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MEMORANDUM

TO: **THE BOARD OF DIRECTORS**

FROM: **Cecilia AKINTOMIDE**
Secretary General

SUBJECT: **MULTINATIONAL (LAKE VICTORIA BASIN – EAST AFRICAN COMMUNITY): PROPOSAL TO AWARD AN ADF GRANT OF UA 75.43 MILLION TO FINANCE THE LAKE VICTORIA WATER SUPPLY AND SANITATION PROGRAM - PHASE II**

TECHNICAL DOCUMENTS*

Please find attached the **technical documents** related to the above-mentioned program.

Attach.

Cc.: **The President**

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LAKE VICTORIA WATER AND SANITATION PROGRAM

TECHNICAL ANNEXES

Contents

A. Lake Victoria Basin Key Development Issues and Challenges 1
B1. Lessons Learned 4
B2. Country background and Program Beneficiary Towns 6
B3. Program Descriptions 17
B4. ADF Component Program Costs 25
B5. Implementation Arrangements 32
B6. Financial Management and Disbursement 35
B7. External Audit 41
B8. Procurement Management 47
B9. Financial and Economic Analysis 61
B10. Strategic Environmental and Social Assessment 65
B11: Gender and Social Analysis 87
B12. Program Preparation, Supervision, Monitoring and Evaluation 97

A. Lake Victoria Basin Key Development Issues and Challenges

The Lake Victoria, with a surface area of approximately 68,870 km^2 is the second largest freshwater body in the world. It is a trans-boundary water resource shared by Kenya, Tanzania and Uganda. Rwanda and Burundi lie in the upper watershed that drains into the lake. It is considered as one of the most important shared natural resources by the partners states of the East African Community (EAC) who covers an area of around 1.8 million square kilometres and contains a population in excess of 125 million people. The Lake is a major source of water and fisheries in the region. The socio-economic importance of Lake Victoria to the Eastern Africa region is associated with the fact that it is the largest inland water fishing sanctuary; a major inland water transport linkage for the East African Countries; a source of water for domestic, industrial and commercial purposes; a major reservoir for hydroelectric power generation; a major climate modulator in the region; and rich in biodiversity. Recognising the importance of the lake and its contribution to the region's economy, the EAC declared the lake basin as a regional economic growth zone.

The lake basin however suffers from a multitude of natural and human induced challenges. The following challenges and threats are key to the development of the region.

- Fishery: The economy of the region is characterized by a heavy dependence on the fish resources of Lake Victoria, which accounts for between 2 and 3% of the region's GDP. The fisheries industry provides employment for about 197,000 fisher men and more than 600,000 take part in direct fish trading activities. [1]The lake produces a fish catch of over 800,000 tonnes of fish annually, however, the trend in fish catch in the last few years shows a decline in the catch level and average size. This has further pushed fisher men to use unsustainable over fishing methods with consequential damage to the fish stock.
- Catchment: The land use pattern continues to exert pressure on the forest cover, wetlands and riverbanks. In many parts, ongoing destruction of vegetation for expansion of human settlements, forest fires, mining activities, over grazing and demand for agricultural land render soil vulnerable to water and wind erosion increasing sedimentation with consequential decline in water levels. Rivers that flow into Lake Victoria are therefore heavily loaded with silt derived from eroded catchments. The largest contribution of inflow comes from River Kagera.
- Discharge of waste and refuse to water bodies: discharge of agricultural inputs, nutrients, fertilisers, industrial and municipal waste have an influence on water quality and nutrient level, and these adversely affect aquatic life and integrity of water resources. Microbiological, eutrophication, chemical and suspended solids were identified as being the most important pollution issues. The increased inflow of nutrients has resulted in changing the lake chemical and bio-physical characteristics, increased eurtrophication, health problems to riparian communities and proliferation of water hyacinth. High population Density: the population in the basin is estimated about 35 million with large concentrations along the lake shore and within the Kagera River Basin, which is shared by Burundi, Rwanda, Tanzania and Uganda. Although there are a few large cities such as

[1] Lake Victoria Environment Management Project phase II - 2009

Kampala, Kisumu and Mwanza, most of the population lives in rural villages and small towns. However, the region has experienced a process of rapid urbanization over recent years with the mushrooming of towns, many of which are concentrated along the shores of the lake. The high population growth has serious implications for service delivery and resource conservation. The annual average population growth in the region is estimated at 3%.

- Poverty and quality of life: More than half of the population in the basin is living on an income of less than 1 USD per day (2007) and relying heavily on subsistence production. There is a high level of illiteracy, inappropriate skills for production and income generation activities, and lack of socio-economic incentives to meet the challenges of management and development.
- Governance and Institutions: National policies and legal frameworks, and institutions in the partner states are at variance and require further coherence and harmonisation geared towards their common goal. Through the support of the LVEMP project funded by the World Bank, the countries are expected to make progress on this front through the harmonisation of policy, legal and regulatory frameworks for water and fish quality and development of regional water resources management plan, fisheries management plan, development of sustainable land management strategy.
- Other challenge areas include encroachment to wild life, gender inequalities, HIV/AIDs, resource use conflict

In recognition of these challenges and constraints, the EAC has formulated a framework to reverse the deteriorating conditions in the lake and established the Lake Victoria Basin Commission (LVBC) whose mandate is to coordinate and promote integrated management of the lake basin ecosystem. A Protocol on Sustainable Development of the Lake Victoria Basin signed in November 2003 and ratified in November 2004 sets out an agreement of cooperation in a number of key areas that include improvement in public health, living conditions and quality of life. Water supply and sanitation are some of the key areas for cooperation in this respect. The EAC's development strategy articulates the need for sustainable development of the LVB ecosystem and is focusing on two key pillars; (i) political and socio-economic development (ii) deepening and accelerating regional integration. The LVBC has developed its operational strategy (2007-10) on the basis of the EAC development strategy. The top five prioritized key trans-boundary issues identified are: (i) Land, wetland, and forest degradation; (ii) Weak governance, policy, and institutional framework; (iii) Declining fish stocks, and loss of habitats and biodiversity; (iv) Increasing pollution and eutrophication; and (v) Unsustainable water resources management, declining water levels, and climate change.

The LVBC has transformed the vision and strategy framework of the stakeholders in the LVB, into a number of programs as part of a broader agenda to strengthen shared interest and regional cooperation. Among these programs is the Lake Victoria Water and Sanitation ("LVWATSAN") initiative which has the overall objective of supporting secondary urban centres in the basin to meet the water and sanitation related Millennium Development Goals (MDGs) and contribute to the improvement of the lake's environment and ecological system. The first phase of this program was implemented in ten towns in Kenya, Tanzania and Uganda with support from the UN-Habitat.

In addition to the interventions referred to above, the LVBC is coordinating several other interventions in the basin, including the phase 1 and 2 of the Lake Victoria Environmental Management Project (LVEMP) supported by WB, GEF, and SIDA. Phase 2 of that project is currently under implementation, with the objectives of improving the collaborative management of the trans-boundary natural resources of the Lake Victoria Basin ('LVB') and the reduction of environmental stress in targeted pollution hotspots and selected degraded sub-catchments. Furthermore, preparatory activities are ongoing with EIB, KFW, AFD and UN-HABITAT for bigger scale interventions in the larger towns such as Kisumu, Mwanza and Kampala. Within the same broad objective of reducing the level of pollution reaching the lake from urban settlements, the Bank is already financing the Kampala Sanitation project at UA 35 million.

B1. Lessons Learned

Lessons Learnt From Similar Operations in the Region

	Project	Date & amount	Intervention area	Rating	Lessons Learnt
1	Lake Victoria Environment Management Project I	1997-2005 USD xxx million – World Bank	• Provide necessary information to improve management of the lake eco-system • Establish mechanism of cooperative management • Identify and demonstrate practical, self sustaining remedies • Build capacity for ecosystem management	NA	• Clear delineation of responsibility between national and regional organisations and for implementation through government structures • Clear accountability mechanisms and monitoring frameworks • A basin perspective, while at the same time linking environmental benefits to local livelihoods improvements • Long term capacity building • Awareness building among the public and communities as key to sustainability
2	Lake Victoria Environment Management Project II	2009-2013 USD 114.8 World Bank, GEF, Sweden	• Institutional capacity for managing shared water and fisheries resources • Point source pollution control and prevention • Watershed management	NA	• Need for inclusion of all basin countries including Rwanda and Burundi • Institutional sustainability requires working through government structures as well as strong country commitment to regional cooperation.
3	Kisumu Water and Sanitation Project	2006-2013 Euro 20 million AFD	• Rehabilitation of water production, treatment, transmission, storage and distribution facilities • Rehabilitation of waster water treatment and sewerages systems • Expansion of water supply and sanitation infrastructure • Institutional development	NA	• Institutional transformation/reforms is key to attracting new forms of financing through loans and ensuring the sustainability of infrastructure • Integration of service expansion to informal settlements and pro-poor approach is critical for coverage
4	Kisumu districts primary schools water and sanitation project	2007 – 2008 Euros 228,606		Satisfactory	• Continuous sensitization and training of UD toilet use and treatment of human waste is important for communities that introduce this technology. • Construction works for this type of project should start right at the beginning, to ensure sufficient time for use of the facilities during the project implementation period. • It is very important to clarify right from the beginning who owns the project. The project brought a tangible benefit to the communities: water. The control over this valuable resource has led in some communities to tensions between community structures and school management. To solve those tensions, the project tried to have representatives from the school management and the community involved in the committees. • The design of the UD toilets did not take into consideration the special needs of physically challenged users. This should be considered in a next project phase. • Tippy-taps are a very cheap and effective way of increasing hygiene in rural communities. The project has seen a replication of the tippy-taps on the household level in the different communities.

	Project	Date & amount	Intervention area	Rating	Lessons Learnt
					•
5	Lake Victoria Water and Sanitation Initiative – Phase I	UN Habitat, Netherlands Govt	• Investment in water and sanitation infrastructure in the secondary urban centres in the Lake Victoria Region • Capacity building support to towns and service providers • Reduce the environmental impact of urbanization in the Lake Victoria Basin • Beneficiary towns were Kisii, Homa Bay and Bondo in Kenya, Bukoba, Muleba, Magata in Tanania, and Kyotera, Nyendo Ssenyange, Mutukula in Ugand	Good	• The integrated approach to water and sanitation development is critical and programmes should reflect a reasonable balance and allocation of resources between; physical infrastructure, solid waste management, basic sanitation and hygiene promotion, training and capacity building for service • The capacity building programme should be start early in the project implementation to engage stakeholders. • Water utilities in small towns can significantly improve their performance to the extent of covering their operation and maintenance costs. This requires an approach that integrates infrastructure improvements with training and capacity building and the adoption of a long term strategic planning approach • Town level institutional structures which engage the key stakeholders are crucial components of the institutional structure for the management of water and sanitation programmes and enhances participation of citizens • The revolving fund approach is feasible as a means of expanding access to basic sanitation for poor and women headed household.
6	Rural Drinking water supply and sanitation program, Rwanda	2004-2009 UA 13 million ADF	• Water and Sanitation infrastructure development • Support to planning • Support to capacity building development	VG	• Private management of water supply systems works • Use of decentralised structures enhanced project ownership and facilitated participation by communities • Institutional transformation critical to consolidate gains and avoids duplication of effort and multiplicity of procedures
7	Small Towns Water Supply and Sanitation Project in Uganda	2004-2009 UA 18.4 million ADF	• improved sustainable water supply • Support to Sanitation improvement • Support to solida waste management • Storm water drainage • Institutional development	VG	• Good quality of designs essential • Participation of beneficiary towns technical personnel in project implementation is essential • Project's integrated approach addresses a wide array of interrelated development issues • Use of indigenous private sector for management of water systems
8	Monduli Water Supply and Sanitation Project in Tanania	2003-2009 UA 14.62Million ADF	• Water supply infrastructure • Capacity building • Environment and watershed management • Sanitation improvement		• Need to contain cost overruns which will invariably put Governments in constraints affecting the flow of counterpart funds • Involvement of communities and training at the early stage of the project critical for sustainability – rural communities under the project demonstrated paying the right price for water
9	Water Sector Reform program, Kenya	2003 – 2013 Euros 17.5 million GTZ, DED and KfW	• Assist MWI to improve management and coordination of the water sector. Advising WSREB on improving regulation and financing of water supply and sanitation services. Assisting selected WSP's to improve water supply and sanitation services. Assisting WARMA in improving their performance	Good	• MWI should continue emphasizing and supporting sanitation measures as sanitation aspects are still lagging behind compared to water supply and water resources management. • The regulator (WASREB) should be supported more by the MWI to strengthen staff capacity in processing of tariff review applications. • The implementation of the transfer plan should be prioritised by the MWI.

B2. Country background and Program Beneficiary Towns

B2.1 Country Information

The EAC which covers an area of 1.8 million km^2 and has an estimated total population of 126.6 million people (2009) and the region's economy has an estimated GDP of US$ 73 billion (2009). The salient features of the member countries are outlined below.

Kenya

Kenya covers an area of 587,000 km^2 of which 576,000 km^2 comprises land surface and 11,000 km^2 is covered in water. This is a developing country where about 80% of population live in rural areas and derive their livelihood from agriculture through crop and livestock production, fishing, forestry and exploitation of other natural resources. According to the 1999 population census report, Kenya's population was estimated to be 28.4 million people. Currently the Kenyan population is estimated to be 35 million people out of whom 3 million reside in Nairobi, the capital city.

About 70% of Kenyan population lives in 12% of the total land area, which is arable and provides the best soils and climatic conditions which are good for agricultural activities. The remaining 30% live in arid areas, which account for 88% of the total land area in Kenya. The high potential areas in Kenya including central highlands, western Kenya, parts of Rift Valley are characterized by high population density of about 300 people per km^2 while the dry lands are sparsely populated with as low as 3 people per km2. Among the urban settlements, Nairobi has the highest density of 3,000 persons per km^2. The main environmental challenges in Kenya include land degradation, loss of biodiversity, environmental pollution and poor management of natural resources including water resources.

Poverty remains perhaps the single most critical barrier to the socio-economic development in Kenya. It hinders population access to basic needs such as health care, nutrition and education. It is estimated that 57% of the Kenyan population lives below the poverty datum line (less than one US Dollar per day). Major sources of poverty in Kenya include poor economic performance, low agricultural productivity, unemployment and low incomes, HIV/AIDS pandemic, landlessness, poor physical infrastructure, gender imbalance and poor governance, natural disasters, internal human/ethnic conflicts, human/wildlife conflicts and effects of climatic change. Given the fact that Kenya's economy depends on natural resources, poverty eradication remains the greatest challenge to sustainable development.

Uganda

Uganda is a land locked east African country situated between latitudes and longitudes 4.2^oN and 1.5^oS and 28^oE and 35^oW respectively. The country covers an estimated total area of 241,020 km^2 of which 15.1% is open water, 11% is protected areas (national parks, game reserves) and about 5.9% forest reserves. Much of Uganda's terrain consists of plateau, rolling hills, flatlands and mountains which are traversed by numerous lakes, rivers, streams and wetlands. Uganda's water resources cover about 16% of the country's total area. The water resources are currently

under pressure from the growing population and poor waste management practices of the industries located near the water systems.

Uganda's population was 28.4 million people in 2007. The population has increased by 70% since 1991 when it was 16.7 million people. The population growth rate in Uganda is 3.4%, one of the highest in the world. At this rate it is projected that Uganda's population will exceed 50 million in 2025.

Agriculture (comprising crops, fish and livestock) is the mainstay of Uganda's economy. It provides significant share (about 40%) of gross domestic product (GDP), 85% of export earnings, 80% of total employment and the bulk of raw materials used by the agriculture based industrial sector. The economy of Uganda has registered an impressive growth. Between 1994 and 2006 growth of the economy (measured in terms of increases in gross domestic product) has averaged 5% per annum. Over the same period head count poverty decreased from 56% in 1992 to 31.1% in 2006.

Uganda has 7.2 million ha of arable land under crop agriculture. This is less than 50% of total arable land estimated to be 16.8 million ha. However, it has been estimated that available arable land for agriculture will run out in most parts of Uganda by 2022. Fisheries especially from Lake Victoria provide an important source of livelihood to many Ugandans. The sector also provides significant foreign exchange to the country. The resources are, however, faced with pressure from several sources including the growth in international market demand in Nile Perch and Tilapia, deterioration in water quality due to excessive pollution, re-invasion of the lake from water hyacinth, poor fishing practices and prevalence of diseases especially HIV/AIDS among the fishing communities.

Tanzania

Tanzania is located in eastern Africa along the 800km Indian Ocean coastline. It is bordered by Kenya and Uganda to the north, Democratic Republic of Congo, Rwanda and Burundi to the west and Zambia, Malawi and Mozambique to the south. It covers an area of 945,000km^2 out of which Tanzania mainland covers an area of 881,000km^2 while Zanzibar covers only 2,000km^2. Its physical features are characterised by plains along the coast, a central plateau and highlands in the north and south. Elevations range from sea level to the highest point in Africa, the glaciated peak of Mt. Kilimanjaro (5,895 m above sea level). The northwest of the country encompasses approximately one half of Lake Victoria. To the west and south western borders are Lakes Tanganyika and Nyasa.

Tanzania's population is estimated at 37.4 million people (2002) with a population density of 38 persons per km^2, growth rate of 2.9% (2002) and a life expectancy of 53.5 years. The country's economy is heavily dependent on agriculture. The annual per capita income of Tanzania is estimated at US$390 in 2006. Approximately 45.7% of GDP and 76.5% of employment is generated from the agriculture sector which employs 80% of the work force and provides 85% of exports.

Tanzania is one of Africa's most ecologically rich countries. The diverse climatic and physical conditions range from arid, semi-arid, woodland and dry savannah to the mountainous areas with afro-alpine vegetation. The diverse ecological landscapes include the Serengeti (site of the last major terrestrial mammalian migration in the world) a prominent tourist attraction. The main environmental problems in Tanzania include loss of wildlife habitats, and biodiversity, deforestation, land degradation, deterioration of aquatic systems, lack of accessible good quality water and pollution.

Rwanda

Rwanda is located in central Africa between $1^{o}\ 04^{1}$ and $2^{o}\ 5^{1}$ south and longitudes $28^{o}\ 45^{1}$ and $31^{o}\ 15^{1}$ east. It has a surface area of 26,338 km^2. The country is divided into two major drainage basins, the Nile Basin to the east covering 67% of the land and delivering 90% of the national waters and the Congo Basin to the east which covers 33% of the land. The country's hydrological network includes many rivers and associated wetlands with a total surface area of 278,536 ha which correspond to 10.6% of the country's surface area. The natural renewable water resources were estimated to be 6.3 km^3/ yr in 2000 with per capita annual renewable water resources at 815 m^3/ per person/yr.

Rwanda has a young but fast growing population. The population was 9.2 million in 2006 and is projected to be 16 million in 2020. The average population density is 321 people per km^2 which makes Rwanda the most populated country in Africa. The high population density puts tremendous pressure on the physical environment and induces labour migration from rural areas and countryside to the towns.

Rwanda economy is agricultural based with an estimated GNP of US$ 365 in 2007. Agriculture contributes 47% of the GNP, accounts for 71% of the country's export revenue and is the main income earner for the 87% of the population. However, only 52% of the land surface is arable representing approximately 1,385,000 hectares of land.

About 57% of Rwandans, the majority of them women live in abject poverty surviving on less than one US$ per day. Sources of poverty are attributed to lack of land, soil infertility, weather conditions, lack of livestock, ignorance, sickness, polygamy and lack of access to water.

The country's natural resources including the land resources are increasingly under pressure from the increasing population and unsustainable use leading to environmental degradation. High population density in fragile ecosystems exposes the country's natural resources to degradation. This underlies the major environmental problems facing the country which include land degradation, decline in soil fertility, deforestation, wetlands degradation, soil erosion, loss of biodiversity and pollution.

Burundi

Burundi is a landlocked country located in central Africa east of the Democratic Republic of Congo between geographical coordinates $30^{o}\ 30^{1}$S and $30^{o}\ 00^{1}$E. The country has a total area of 27,830 km^2 of land and 2,150km^2 of surface water. Burundi is basically a high plateau country

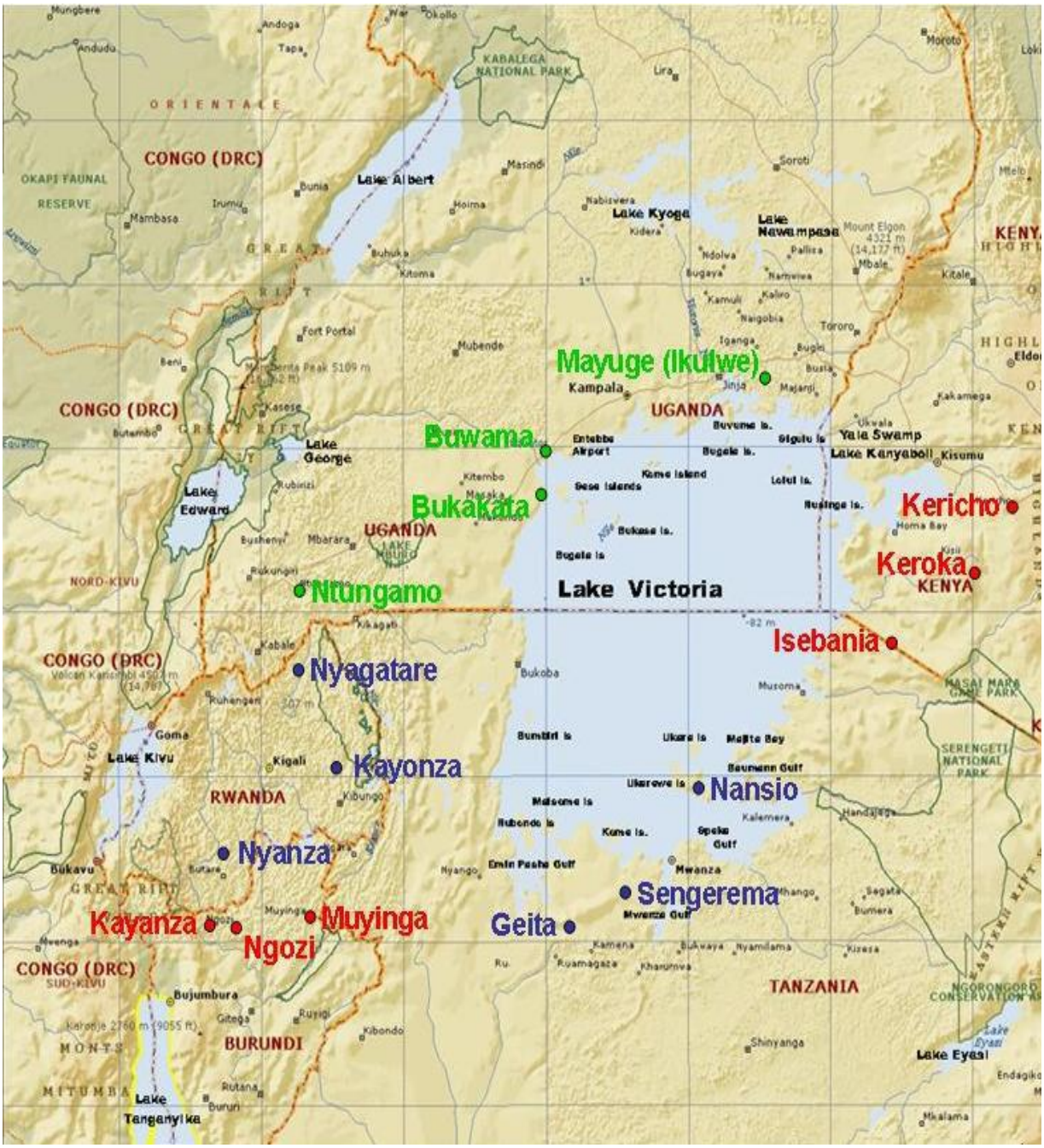
with an altitudinal variation between 772 and 2670m above sea level and an average altitude of 1,700m above sea level. Like Rwanda, Burundi straddles the crest of both the Nile and Congo watersheds.

Burundi population is estimated to be 9.9 million with growth rate of 3.6%, one of the highest in the world. The economy is predominantly agricultural based, which accounts for 35% of GDP and employs more than 90% of the population. The rapidly growing population is fast reducing the amount of uncultivated land. Soil erosion, mainly due to overgrazing and expansion of agriculture into marginal lands, is a significant environmental problem in Burundi. Other environmental problems include drainage of wetlands, deforestation and loss of biodiversity and wildlife habitats.

B2.2 Program Beneficiary Towns

The program will be implemented in selected 15 towns located within the Lake Victoria basin, within the EAC partner states of Kenya, Uganda, Tanzania, Rwanda and Burundi as shown in Figure 1.

Figure 1. Map of the Program Area showing the Participating Towns



Towns in Kenya

The towns selected for the implementation of the program intervention in Kenya are Kericho, Keroka and Isebania.

Kericho

Kericho town, approximately 85km south-east of Kisumu city, is located in the Rift Valley province and is principally engaged in commerce and agricultural activities. The current (2009) population in Kericho Municipality is estimated to be 132,010 people.

The municipal water supply is currently taken from three sources (Rivers Timbilil and Kimungu and the Negechorock Springs). The existing infrastructure is in reasonable condition but the critical concern is the low flow of water from the River Timbilil intake. Kericho is served by a sewerage system centred in the CBD area. However, the majority (70%) of Kericho's residents are served by a mixture of septic tanks and pit latrines. A formal sludge exhausting service is in place.

The municipal council is responsible for solid waste management and solid waste collections occur on a regular basis. The majority of roads in low income areas are not served by any formal road drainage network and issues associated with storm water pose a major problem.

Keroka

Keroka town is situated in Masaba district, Nyanza province, approximately 25km east of Kisii Municipality. The current population, for the whole town, is estimated to be 53,484. The piped water supply coverage is low (20%) with poor reliability of service being a major problem. The remaining 80% of the residents rely on collection of water from springs and surface water (streams). Keroka has no piped sewerage system and the majority of residents are served by simple pit latrines.

The town council is responsible for solid waste management and a council owned truck collects waste from designated points along the main road. Lined storm water drainage is limited to one side of the town and lack of erosion protection on the other side has caused major erosion problems.

Isebania

Isebania is a small town on the Kenya/Tanzania border which has seen rapid growth over the last few decades. The town falls in the 'Nyamaharaga Division' of the Kuria (West) District, Nyanza Province. The town's population is estimated to be 24,347 people (2009). The Isebania water supply system was constructed in 1968. It was designed to serve a population equivalent of 2,000 and is now massively inadequate, providing less than 20% coverage. The majority of the people are reliant upon collection of water from shallow wells and surface water (streams). Isebania town has no piped sewerage system and the majority of residents are served by simple pit latrines. No formal sludge exhausting service is provided.

Solid waste management is the responsibility of the Kehancha Municipality. Waste is collected from three temporary sites and then transferred to a permanent dumping site on the outskirts of town. Storm water drainage exists along the main road from Tanzania. The drains are, however, poorly maintained and problems associated with clogging and overflowing is common throughout the rainy season.

Towns in Uganda

The towns selected for the implementation of the proposed program interventions in Uganda are Mayuge, the clusters of Kayabwe and Buwama, Bukakata and Lambu and Ntungamo.

Mayuge

Mayuge situated 120 km east of Kampala covers a total area 32km^2. It has an estimated population of 10,865 of which 80% live in 20% of the Towns' area, which happens to be the home to the business district and most trading activities.

There is no piped water supply in Mayuge. There are 20 point water sources, but with a vastly reduced yield in the dry season, covering only 20% of the population. Access to sanitation is limited: there are only two public latrines. Access to school sanitation is poor, with pupil/toilet ratio ranging from 56 to 214.

Solid waste disposal is managed by the Town Council who engage a private firm to collect and transport the refuse to a pit located in a neighbouring village. Storm water drainage is provided by side drains adjacent to the Towns' primary roads, radiating out of town to form the major drainage system.

Kayabwe and Buwama

Buwama and Kayabwe are 65km and 80km west of Kampala respectively, along the Kampala-Masaka highway. The population of Buwama and Kayabwe are estimated to be 4,000 and 4,200 respectively. A few point water sources offer less than 10% of both communities access to safe water. Sanitation coverage is less than 40%; public toilets facilities are almost non-existent. There is no solid waste collection and disposal system.

Bukakata and Lambu

Bukakata, next to Lake Victoria, 135km west of Kampala has an estimated current population of around 10,400, across 6 fishing villages under consideration. A few point water sources and the Lake offer less than 10% of the community's access to water. Access to inadequate sanitation is provided by public and school toilets. There is no solid waste collection and disposal system. The areas are low lying naturally draining soil and, with the exception of Kaziru fishing (of Bukakata), there are no reported drainage problems.

Ntungamo

Ntungamo is located 325km west of Kampala. It covers an area of 56km^2 and has an estimated population of 16,606 people. The town has point water sources in the fringe areas and piped water to its centre. The piped system, constructed in 1998 and expanded in 2005, is sourced from a spring and a borehole, with a combined yield of 6m^3/hr. Water rationing is the norm. Access to sanitation is limited and mainly by pit latrine. The town centre is low lying and water logged; construction and maintenance of toilet at household level is challenging; above the ground vault type toilets is the common technology. School sanitation pupil: stance ratio ranges from 114–132.

Solid waste disposal is managed by the Town Council who engage a private firm to collect and transport the refuse from the central part of the town only to a dumping site outside the town. Refuse generated at fringes of the town is managed on site. Storm water drainage is provided by side drains adjacent to the Towns' roads. Most of the town is situated on high ground and is well drained. The exception is the business district which is located in the lowest part of the town and has a high water table.

Towns in Tanzania

In Tanzania, the three towns of Geita, Sengerema and Nansio were selected for the implementation of the Program interventions.

Geita

Geita Township is within Geita District, located 90 km south-west of Mwanza city. The current (2009) population is estimated to be 82,750. The previous water source was Nyamalembo dam but this was abandoned due to mercury contamination (attributed to informal gold mining activities in the catchment). There is no centralised water supply system in Geita and the town suffers acute water shortages.

Geita town has no formal sewerage system. Septic tank coverage is low and the majority rely on pit latrines of varying quality. The absence of a faecal sludge management system is a major problem. Solid waste management is provided by the council under the public health department and a formal collection system comprising collection from temporary dumping points around town is provided. Geita town is not served by any formal storm water drainage network.

Sengerema

Sengerema town which lies approximately 20km south of Lake Victoria has an estimated population of 62,940(2009). The main water source is the lake with raw water extracted at the Nyamazugo intake. Low coverage of domestic meters in the town, and prevalence of flat rate tariffs, mean that equitable distribution of the water remains a key problem in Sengerema.

There is no formal sewerage system and septic tank coverage is low. The majority rely on pit latrines of varying quality. A high water table and the absence of a faecal sludge management

system are major problems. The management of solid waste is administered by the council under the public health department. Drainage is being provided along the main (Mwanza-Geita) road but the remaining parts of Sengerema town have no storm drainage at all which is a major concern to the town's residents.

Nansio

Nansio Town is situated on the Ukerewe Island. The town's primary economic activities include agriculture, fishing, and commerce. The current population is estimated to be 36,072 people. Lake Victoria provides the single water source for Nansio town. The intake is situated close to the port. A combination of operational problems and inadequate infrastructure means that water supply coverage is low at around 20%.

The town has no formal sewerage network. Septic tank coverage is low and the majority rely on pit latrines of varying quality. The absence of a faecal sludge management system is a major problem. There are four temporary dumping points around town and solid waste collections occur three times per week. Nansio is served by quite a comprehensive road (storm water) drainage system. Most roads in the centre of town are bordered by lined drains which appear in good condition and seem to drain effectively. The final drainage point discharges directly into the lake.

Towns in Rwanda

The towns selected for the implementation of the program interventions in Rwanda are Nyagatare, Kayonza and Nyanza.

Nyagatare

Nyagatare town is situated in the Eastern Province of Rwanda, 200km from Kigali. It has an estimated population of 25,000 people. The town covers an area of 25 km^2 and is home to many institutions. Nyagatare has a piped water supply but is at the end of regional water supply scheme which disadvantages users. It is 70km from the combination of spring and river sources. The source receives basic treatment, sedimentation and filtration. The whole system supplies a maximum of 3,300 m^3/day but the majority of this is consumed upstream of Nyagatare. Available resources from this source are deemed inadequate to meet future demands. The urban population of Nyagatare are charged for the supply although the rural users receive water for free.

The principal method of excreta disposal in the town is the pit latrine, high-income groups use septic tanks. There is no equipment to de-sludge existing facilities and ultimate sludge disposal facilities do not exist. There is no solid waste collection and disposal system. The town generally drains into the river Muvumba. The drains associated with paved roads are lined and operate well.

Kayonza

Kayonza is situated in the Eastern Province of Rwanda, 70 km from Kigali and is close to Lake Muhazi. The town has an estimated population of 16,000 people and covers an area of 4 km^2. Kayonza's piped water supply from a recently rehabilitated powered borehole, serves about 30% of the town. Production figures are not available though an estimated 70% of the population uses lake water.

Excreta are principally disposed in pit latrines. There are public latrines at the market and car park only. The town has no solid waste collection and disposal system. There are some drainage problems which are being addressed.

Nyanza

Nyanza is an old town with an estimated population of 32,000. The town is home to many institutions. The town's water supply is from the River Vogo which is supplemented by a spring. This supply delivers 1,000m^3/day which is inadequate for the town requirements. Nyanza shares its inadequate water supply with Ruhango town situated some 15km away. To augment the inadequate supply, attempts are being made to dam the river to provide increased security of water supply. Water is treated by a rapid gravity plant which is in good condition. The town has an extensive distribution system which is operated by ELECTROGAZ.

The sanitation facilities are a combination of septic tank systems mainly at institutions and pit latrines for the low income groups. There is no solid waste collection and disposal system. The drains associated with paved roads are lined.

Towns in Burundi

The towns selected for the implementation of the interventions are Muyinga, Kayanza and Ngozi.

Muyinga

Muyinga town, which is the headquarters of Muyinga District, has a population of 31,000 people and covers an area of 6 km^2. It is a fast growing town, receiving a steady stream of people returning from exile from Tanzania and Rwanda.

The piped water supply is spring fed and is in the process of being developed further. Total capacity (including the new spring sources being developed) is estimated to be around 1,800m^3/day. The water is boosted to storage and then to the town's piped system that serves 30% of the town. Frequently power and equipment failures hamper the supply and the infrastructure is in desperate need of rehabilitation.

Excreta are principally disposed in pit latrines. There are four public toilets that are community managed and a few septic tanks serving high income groups connected to the water supply

system. There is no solid waste collection and disposal system. The majority of the town is not drained and storm water endangers some buildings and roads

Kayanza

Kayanza, the headquarters of Kayanza Commune and Kayanza Province, has an estimated population of 20,174 inhabitants in an area of 1.3 km^2. The water supply consists of around 650 m^3/day pumped from five springs to the town reservoirs. Two springs supply an additional 215 m^3/day to the town's distribution system which has 700 consumer connections.

Excreta are principally disposed in pit latrines and a few septic tanks serving high income groups. There is no solid waste collection and disposal system. Drainage is a major problem in the town. Most of the roads are narrow, not paved, and without drains. Incidences of storm water flowing into houses in the low income area are evident.

Ngozi

Ngozi is the third largest town in Burundi. It has an estimated population of 36,947 in an area of 3.5 km^2. The town's piped water supply is pumped from springs, capable of delivering an estimated 2,500 m^3/day. This is adequate for existing requirements assuming reliable power supply available. Water from one source is filtered while all sources are chlorinated. The system is in good condition with an extensive distribution system.

Excreta are principally disposed in pit latrines. There are four public toilets that are community managed and a few septic tanks serving high income groups connected to the water supply system. There is no solid waste collection and disposal system. Most of the storm drainage system is due to be reconstructed in a separate program.

B3. Program Descriptions

The program will be implemented in the following fifteen towns; Mayuge, Ntungamo and the cluster of Bukakata, Buwama and Kayabwe in Uganda; Nyanza, Nyagatare and Kayonza in Rwanda; Ngozi, Muyinga and Kayanza in Burundi; Kericho, Keroka, and Isebania in Kenya; Sengerema, Geita and Nansio in Tanzania. KfW is engaging with the Government of Kenya with a view to supporting Kericho in rehabilitating and expanding the water supply and sewerage system, and therefore Bank's intervention is limited to capacity building, public sanitation facilities, solid waste management and immediate service improvement needs.

The program involves a combination of the hardware (physical interventions) required to provide effective water supply and sanitation systems coupled with the appropriate software (capacity building programmes) to ensure that the physical infrastructure are operated efficiently and can be sustained in the long term. The program is designed to address needs and demands for the period up to 2025 design horizon while some specific components and subcomponents of the program will be designed to requirements of shorter period owing to optimized utilization of available resources.

The program will be implemented over a period of 48 months. A rolling program of planning, design and detailed environmental impact studies are planned to commence in 2011. At the same time when sub-project detail design and ESIA studies are carried out, a fast track capacity building interventions will commence to get quick win on the ground and prepare the towns for the interventions. Overall the program comprises the following components: (A) Water Supply, (B) Hygiene and Environmental Sanitation, (C) Urban Drainage Improvement, (D) Capacity Building and (E) Program management.

<u>Water Supply</u>

This component will cover support to provision of appropriate infrastructure to provide water supply systems that can extract, treat, deliver and distribute water in a secure and sustainable manner.

Proposed sources of water in the program towns will include rivers, streams and lakes, springs and groundwater while some towns will get connected to existing other networks. The source strategy is to utilise the cleanest and nearest perennial water source(s) to each of the program towns without depriving existing users of that source of water. Where more than one source is available, the source requiring minimum delivery and treatment costs were chosen. To ensure continued water quality, water sources should be extracted in areas where they are unlikely to be influenced, now and in the future, by localised pollution. The strategy would be to ensure that all sources are protected from the influence of pollution and as such source protection measures will be taken.

Disinfection will be the treatment method for ground and spring water sources. Surface water sources, including Lake Victoria and rivers, will require a higher level of treatment than ground

water sources. In line with regional practise, the raw water from these sources will be treated by flocculation, sedimentation, rapid sand filtration and disinfection. Treatment and transmission facilities are to be provided, where possible, with power from public electricity supplies. Auxiliary power supplies will be provided to operate the supply and treatment facilities at a minimum of 50% of their design capacity.

Service reservoirs will be provided with sufficient volume to provide balancing storage and reserve supply to ensure water security for emergency conditions and planned maintenance. They will have sufficient elevation to provide each program area at positive pressure during peak demand periods.

Distribution systems will include sufficient coverage to ensure access to water supply to the whole population in the program towns. The program will supply the initial requirement for water meters for individual connections. Access to water by those who cannot afford individual house connections is part of the 'pro-poor' objective of the program and will be achieved by sufficient stand pipes and kiosks to avoid queuing at peak times. Through the capacity building component a management model will be developed for the management of the stand pipes.

The program will have an immediate service improvement intervention in order to reduce high levels of unaccounted for water (UFW) for those with existing systems and address the urgent needs for water supply in the beneficiary towns.

Table B3.1: ADF component - Water Supply Works

Town	Intervention level	Source	Treatment		Trans.	Distr.	Storage		Stand pipes	Consumer Meters	Other
			Method	m3/day	pipeline - km	pipe - km	total m3	No.			
Mayuge	STI	Extension from existing line and emergency 10 BHs	Not required	1534	16.5	35	1050	2	25	1000	
Kayabwe and Buwama	STI and LTI	LV intake, pumping, 6BH	RSF	965	20	28	600	2	25	1000	rain water harvesting, boreholes
Bukakata	STI and LTI	LV intake, pumping	RSF	670	0.7	20	400	1	25		
Ntungamo	STI and LTI	2 new motorised BHs dvts, motorise 2 existing, 10 BHs in fring areas	RSF	1920	7.5	36	1500	3	25	2000	emergency wells
Kayonza	STI and LTI	Pumping from existing intake	expansion treatment, pumping	1880	16	15	1350	2	25	500	
Nyanza	STI and LTI	River	RSF, pumping	3700	19	31	1800	3	25	3000	
Nyagatare	STI and LTI	river intake, pumping	RSF, pumping	3116	1.7	27.5	2100	2	25	2000	fittings, valves, bulk meters replacement
Muyinga	STI and LTI	river intake, pumping	treatment, pumping	1904	12	16	2300	3	25	2350	pump, switch gear, auxiliary power, main repair
Ngozi	STI and LTI			3300	17	25	2100	2	25	2500	auxiliary power, repair materials
Kayanza	STI and LTI	river intake, pumping	treatment, pumping	1487	16	22	1200	3	25	1500	
Kericho	STI	river intake, pumping	repair of existing TW				500	1			replacement of valves and bulk meters, repair materials
Keroka	STI and LTI	river intake, pumping	RSF	3346	2.5	14.5	3000	2	23	2000	repair lines, pump and electrical works
Isebania*	STI and LTI	river intake, pumping	RSF, pumping	4729	3.8	6.5	1750	2	13	1500	repair , replace bulk meters, control panels
Geita	STI and LTI	spring, intake, 3 BHs	treatment (balancing/contact), pumping	2100	3	20.5	2200	2	31	7500	install submersible pump, replace bulk meters
Sengerema	STI and LTI	LV intake, pumping	RSF	8445	24	19.5	6200	3	25	4000	replace bulk meters/valves, repair lines
Nansio	STI and LTI	LV intake, pumping	Rapid Sand Filter, pumping	6464	4.6	21.5	4000	3	25	2500	replace bulk meters/valves, repair lines

*the intervention in Isebania will include the provision of potable water supply distribution to Sirare neighbouring village on the Tanzanian side through stand pipes by extending the system in Isebania at an estimated cost of about USD 200,000.

Hygiene and Environmental Sanitation

The sanitation related interventions aim to provide an efficient and cost effective means of collecting, re-using (if appropriate) and disposing of excreta and community waste in a hygienic way so as not to endanger the health of the population or cause environmental degradation. These interventions will therefore include both the 'hardware' (e.g. toilets and sludge treatment facility) and the 'software' (regulation, hygiene promotion etc.) needed to reduce faecal-oral disease transmission or environmental contamination.

Consideration has been given to improvements in on-site sanitation facilities as an intermediate solution owing to the enormous challenges with waterborne sewerage systems at the current levels of development in the towns. Sustainable sewerage systems in most of the program towns pose significant technical, institutional and financial challenges and are deemed to be not feasible within the program design period. The program is therefore focusing on incremental improvements in the interim period.

The strategy will aim to promote incremental improvements in on-site sanitation facilities at the household level. The program will undertake hygiene promotion campaigns to communicate the importance and benefits associated with improved 'on-site' sanitation facilities and behavioural transformation towards proper hygiene. The program will support existing mechanisms to intensify the campaign and raise awareness through creating peer pressure in the communities. Various communications means such as posters, leaflets, newspaper, radio, public meetings, schools and clubs will be used. The promotional materials shall be gender and culturally sensitive and shall cover promotion of personal hygiene, cleanliness within the household, disposal of solid waste, proper use of toilet facilities and hand washing as well as handling of food. Preventive measures against water borne diseases including diarrhoea, typhoid, cholera and malaria shall also be explored.

The program will identify peers, especially women, in the communities and provide training to create pressure in their communities. Over 3,000 people will be trained with a target of about 50% of them being women. After the training of the trainers and production of educational materials, the program shall be rolled out starting with general sensitization for the general public on the important cleanness. The local leaders, including politicians, church leaders and community elders shall be asked to help to reach the people. The programs shall then concentrate to cover the identified and deserving core influencing institutions. The educational material and radio programs / messages shall be staged in such a way that there will be repeat sessions on a regular base during the implementation of the entire program. Throughout the implementation of this sanitation and hygiene component, the consultant NGO shall keep and maintain clear records and data, to facilitate measurement of the inputs and outputs as well as impacts and outcomes from the intervention.

An NGO or other locally based organization shall be recruited as a consultant to undertake the sanitation and hygiene promotion and education for each country. The NGO shall work closely with the units responsible for public health and community welfare in both, water utility and the town council. The NGO in consultation with the Multi-stakeholders Forums (MSF) will identify potential trainers as peers and facilitators to undergo training. These people will be trained on the

best approaches and methods of educating the public proper hygiene and sanitation, taking care of conducting separate sessions for both men and women whenever sensitivity calls for this. They should also be able to handle and work with the young people.

The hygiene and sanitation promotion does not focus on a single form of sanitation but provides information on the different types of facilities available and helps people select the most appropriate type of latrine or toilet for their household use. The support will need to outline the key difference between available technologies with regards to: i) key advantages and/disadvantages; ii) specialist requirements for operation and maintenance; iii) suitability in different areas (ground conditions etc), and; iv) indicative costs associated with construction and operation.

In terms of hardware provisions, the program will provide each town with a faecal sludge management system that is affordable and capable of collecting, transporting and treating the forecasted volumes of latrine sludge and seepage that will be generated during the program design horizon. Only Kericho has got an existing sewerage and waste water treatment works and support will be provided to improve service by undertaking major repair works and also expanding the system using existing stock of pipes. Each town will be provided with public toilets for public places such as markets, bus/taxi stations, business districts, schools, and other major service centres. For instance, public latrines in the three beneficiaries' towns in Rwanda will be in the market places as there is an on-going program for up-grading schools infrastructure including the water and sanitation facilities. For the beneficiaries' towns in Tanzania, Kenya, Burundi and Uganda, an inventory of the most needed schools and health centres will be conducted in the beginning of the program to determine the location of the public latrines. For the management side of the public latrines, the program will promote the use of the private sectors; women's groups would be given special attention through training of trainers to undertake this job.

The beneficiary towns will also be provided with standard sludge exhausters and ugotugs/Vacuutug as an alternative for use in narrow and high density areas. This will help to minimise manual emptying and overflow of pit latrines due to absence of service. In order to eliminate the environmental faecal pollution, each town will have a proper faecal sludge disposal and treatment facility.

The solid waste management strategy to be employed within the program beneficiary towns will be to provide sufficient public containers for waste collection based on 80% estimated volumes of refuse by 2015 using 4 m^3 steel skips and tractors and trailer system. Each town will develop its own land fill-sites as well as skip locations. The support in solid waste management infrastructure will be made in a way to strengthen existing well functioning systems where private sector and community groups are involved; a management model will be further developed through the capacity building component.

Table B3.2: ADF component of the Environmental Sanitation

Town	Faecal treatment	Public Toilets	Exhausters	Ugo Tugs	Solid Waste Management system		
					Skips	Tractor and Trailer	Land Fill
	m3	No.	No.	No.	No.	No.	No.
Mayuge	10	7	1	1	13	2	1
Kayabwe and Bwama	10	8	1	2	6	1	2
Bukakata	10	10	1	1	8	1	1
Ntungamo	20	7	1	1	13	2	1
Kayonza	10	12	1	1	12	1	1
Nyagatare	10	13	1	1	19	2	1
Nyanza	25	8	1	1	23	2	1
Muyinga	25	14	1	1	23	2	1
Ngozi	10	16	1	1	26	2	1
Kayanza	10	14	1	1	15	2	1
Kericho		16	2	1	40	3	1
Keroka	15	12	1	1	25	2	1
Isebania	15	11	1	1	21	2	1
Geita	50	13	2	1	40	3	1
Sengerema	37	18	2	1	37	3	1
Nansio	10	17	1	1	27	2	1
Total	267	196	19	17	348	32	17

Urban Drainage Improvement

This component will provide additional storm water drainage to areas that can be naturally drained into water courses with a suitable capacity or areas of unused public land which can attenuate the flow before naturally infiltrating into the ground. This drainage would be adjacent to existing roads or in areas where a particular problem has been identified. The strategy is to provide a combination of masonry lined channels and unlined channels depending on the type of roads and location. While ideally, the installation of new lined drainage channels would have to be carried out simultaneously with roads projects and should form part of any highway schemes within each program area, the program will address particular problematic sections which pose environmental sanitation hazard to residents owing to pooling of water and clear pollution path way to Lake Victoria.

While bigger urban drainage improvements are well underway along with access and road improvement in the towns and this will continue as the municipals capacities increase, this program will provide a modest support in this area and its priority significantly vary from town to town. Major drainage works will be undertaken in Nyanza (33km) and Ntungamo (8km) while

in all the other towns the size of drainage works is very small (9km) focusing on specific spots. A total of estimated 50kms of drains will be constructed.

Capacity Building

The main objectives of the capacity building programme are to provide efficient and timely implementation of program activities, enhance community participation in ownership of program activities, provide the necessary spatial planning framework to optimize the design and location of the physical infrastructure, ensure the financial and operational sustainability of the program investments; and ensure that the poverty reduction and public health benefits of the program are fully realized.

The ADF component of the Technical Assistance and Capacity Building Programme will address five major focus areas in all the program beneficiary towns

- Program management to ensure local stakeholder participation, timely and efficient delivery of program outputs and an effective monitoring and evaluation system is in place;
- Institutional capacity of service providers to ensure the efficient delivery of water, sanitation and refuse collection and disposal services and the long term sustainability of program investments
- Urban planning to ensure integration of infrastructure development with town-level spatial planning and land management systems
- Hygiene promotion and sanitation to maximize the public health benefits of the program, strengthen local structures to manage sanitation programmes and promote access to household sanitation
- Urban catchment management to reduce environmental degradation and contribute to the long term sustainability of water resources.

The capacity building activities will be implemented by UN-HABITAT, under the direction of LVBC within the overall framework of existing MOU and the capacity building MOU to be signed by LVBC and UN-HABITAT. This will ensure that the capacity building efforts are managed as a core objective of the program. UN-HABITAT will carry out the capacity building activities based on an approved work program by LVBC and provide written presentations and reports to LVBC, on a regular basis, regarding (a) work progress, (b) summary of issues noted, and (c) how lessons learned are being incorporated in on-going capacity assessment/building activities. At the start of the program the capacity needs/requirements will be re-assessed and confirmed and based on the outcome a detailed work program will be designed.

The summary of activities is packaged under ten key activities;

1. Strengthening, training and Orientation of Program Implementing Agencies (IAs), Program Coordination Teams (PCTs) and Multi Stakeholder Forums (MSFs)
2. Capacity development for the preparation of strategic urban plans
3. Fast-Track Capacity Building Programme in Utility Management and development of pro poor strategy for service provision

4. Capacity building in solid waste management
5. Technical and Operational Training for Water Utilities
6. Capacity building in sanitation and hygiene promotion
7. Capacity building in urban catchment management
8. Technical assistance to establish a tariff setting and review process in each town
9. Technical assistance to the EAC to establish a monitoring system and mainstream gender in water and sanitation

In addition to the above activities, the component will include support to EAC/LVBC for the development of the basin wide environmental monitoring information system and support in capacity building for the implementation of the harmonisation and monitoring mechanisms for the water release and abstraction in Lake Victoria. The support will also include the role out of the regional water resources management plan developed under LVEMP II.

Program Management

This component will provide assistance for the program management at local, national and regional level. The ADF component of program management will support LVBC to recruit a regional program coordinator and an accountant. The wider organisation will support in all other functions such as procurement, M&E, secretariat and administrative support. The ADF program will procure a vehicle and recruit a driver to support the program's monitoring functions. LVBC, through the East African Community Audit Commission, will recruit a regional auditor to undertake an independent annual audit of the ADF supported program at regional and national level. In addition it will engage the services of consultant to undertake specialised services and preparation of MTR and program completion report. The program will have semi-annual Regional Program Steering Committee and Annual Program Progress Review meetings

At the national level, the IAs will second key experts for the program management, including but not limited to program coordinator, accountant and procurement expert. Due to weak capacity in Burundi, the IA will recruit coordinator, accountant and procurement officer. The IAs will involve experts from the town councils as members of the project management team and town level project implementation teams. The IAs will in particular involve the services of environmental, social and gender officers and hygiene and sanitation specialists from the local councils. With support from the town level project teams, under this component the program will undertake base line and end line surveys. It will also undertake national program annual reviews and midterm review.

The ADF supported program will in addition provide office furniture and equipment, communication support, 2 vehicles for each country program IA and one for LVBC.

B4. ADF Component Program Costs

Table B4.1 – Uganda Investment Costs

Uganda towns' investment ('000 USD)						
		Mayuge (Option 1)	**Kayabwe & Buwama**	**Bukakata**	**Ntungamo**	**Uganda Total**
1	Source Development	-	-	-		-
2	river intake					-
3	dam					-
4	boreholes				296.48	296.48
5	springs					-
6	WTWs & Raw Water PS	-	1,348.33	919.96	219.09	2,487.38
7	Pump Stations	189.66	-	26.16	296.48	512.30
8	Transmission Pipelines	-	1,022.09	12.75	97.88	1,132.73
9	Storage Facilities	575.52	344.44	313.92	747.74	1,981.62
10	Distribution System	290.05	487.88	390.77	601.90	1,770.60
11	Water Meters	109.00	100.00	-	200.00	409.00
12	Vehicles and motor cycle	-	45.00	45.00	-	90.00
13	STI	1,620.00	197.00		120.00	1,937.00
14	Design and Supervision	243.62	310.17	149.50	225.71	929.00
	Water base cost	**3,027.85**	**3,854.91**	**1,858.06**	**2,805.28**	11,546.10
	Physical Contingency - 7.5%	227.09	289.12	139.35	210.40	865.96
	Pirce Contingency - 3% pa	302.78	385.49	185.81	280.53	1,154.61
	Total Water	**3,557.72**	**4,529.52**	**2,183.22**	**3,296.21**	13,566.67
15	Communal toilet facilities	114.45	152.60	381.50	114.45	763.00
16	Household Sanitation Strategy	50.00	50.00	50.00	50.00	200.00
17	Sludge exhausting vehicles	210.00	210.00	210.00	210.00	840.00
18	Dedicated FS Treatment Plant	130.80	130.80	130.80	261.60	654.00
19	Solid Waste	219.85	191.95	203.29	231.19	846.28
20	STI	12.00	12.00		90.00	114.00
21	Design and Supervion	64.50	65.39	85.36	83.76	299.01
	Sanitation Base cost	**801.60**	**812.74**	**1,060.95**	**1,041.00**	3,716.29
	Physical Contingency - 7.5%	60.12	60.96	79.57	78.07	278.72
	Pirce Contingency - 3% pa	80.16	81.27	106.09	104.10	371.63
	Total Sanitation	**941.88**	**954.97**	**1,246.61**	**1,223.17**	**4,366.64**
22	Storm Water	-	14.00	-	539.20	553.20
23	Design and Supervision	-	1.23	-	47.18	48.41
	Storm Water Base Cost	-	**15.23**	-	**586.38**	**601.61**
	Physical Contingency - 7.5%%	-	1.14	-	43.98	45.12
	Pirce Contingency - 3% pa	-	1.52	-	58.64	60.16
	Total Urban Drainage	-	**17.89**	-	**689.00**	**706.89**
24	**Program Management base cost**	-	-	-	-	631.14
	Price contingency - 10%					**63.11**
	Total Program Management					**694.25**
	Land acquisition cost	**15.60**	**9.60**	**27.60**	**18.00**	**70.80**
	Physical Contingency - 15%	**2.26**	**1.39**	**4.00**	**2.61**	**10.27**
	Pirce Contingency - 3% pa	**0.47**	**0.29**	**0.83**	**0.54**	**2.12**
	Total Land	**18.33**	**11.28**	**32.43**	**21.15**	**83.19**
	SCHEME TOTAL	4,499.60	5,502.38	3,429.83	5,208.38	19,334.44

Table B4.2 – Rwanda Investment Costs

		Rwanda towns' investment ('000 USD)				
		Nyagatare	Kayonza (Option 1)	Nyanza		Rwanda Total
1	Source Development	-	-			-
2	river intake					-
3	Reservoir improvement			3,815.00		**3,815.00**
4	boreholes					-
5	springs					-
6	WTWs & Raw Water PS	1,249.14	1,014.79	916.69		**3,180.62**
7	Pump Stations	337.90	419.65	500.31		**1,257.86**
8	Transmission Pipelines	106.06	427.17	719.95		**1,253.17**
9	Storage Facilities	602.77	598.41	771.72		**1,972.90**
10	Distribution System	610.62	187.92	547.07		**1,345.61**
11	Water Meters	200.00	50.00	327.00		**577.00**
12	Vehicles and motor cycle	45.00	45.00	45.00		**135.00**
13	STI	533.00	764.00	360.00		**1,657.00**
14	Design and Supervision	322.39	306.86	700.24		**1,329.49**
	Water base cost	**4,006.88**	**3,813.79**	**8,702.98**		**16,523.65**
	Physical Contingency - 7.5%	300.52	286.03	652.72		1,239.27
	Pirce Contingency - 3% pa	400.69	381.38	870.30		1,652.36
	Total Water	**4,708.08**	**4,481.21**	**10,226.00**		**19,415.29**
15	Communal toilet facilities	343.35	381.50	305.20		**1,030.05**
16	Household Sanitation Strategy	50.00	50.00	50.00		**150.00**
17	Sludge exhausting vehicles	210.00	210.00	210.00		**630.00**
18	Dedicated FS Treatment Plant	130.80	130.80	327.00		**588.60**
19	Solid Waste	313.16	225.96	608.33		**1,147.44**
20	STI	85.00	37.00	111.00		**233.00**
21	Design and Supervion	99.08	90.58	141.01		**330.67**
	Sanitation Base cost	**1,231.38**	**1,125.84**	**1,752.54**		**4,109.76**
	Physical Contingency - 7.5%	92.35	84.44	131.44		308.23
	Pirce Contingency - 3% pa	123.14	112.58	175.25		410.98
	Total Sanitation	**1,446.88**	**1,322.86**	**2,059.23**		**4,828.97**
22	Storm Water	59.00	28.00	1,084.21		1,171.21
23	Design and Supervision	5.16	2.45	94.87		102.48
	Storm Water Base Cost	**64.16**	**30.45**	**1,179.08**		**1,273.69**
	Physical Contingency - 7.5%	4.81	2.28	88.43		95.53
	Pirce Contingency - 3% pa	6.42	3.05	117.91		127.37
	Total Urban Drainage	**75.39**	**35.78**	**1,385.42**		**1,496.59**
24	**Program Management base cost**	-	-	-		631.14
	Pirce Contingency - 3% pa					**63.11**
	Total Program Management					**694.25**
	Land acquisition cost	**72.00**	**24.00**	**24.00**	-	**120.00**
	Physical Contingency - 7.5%	**10.44**	**3.48**	**3.48**	-	**17.40**
	Pirce Contingency - 3% pa	**2.16**	**0.72**	**0.72**	-	**3.60**
	Total Land	**84.60**	**28.20**	**28.20**	-	**141.00**
	SCHEME TOTAL	6,230.35	5,839.85	13,670.65	-	26,435.09

Table B4.3 – Burundi Investment Costs

		Burundi towns' investment ('000 USD)				
			Muyinga	Kayanza	Ngozi	Burundi Total
1	Source Development		-	-		-
2	river intake					-
3	dam					-
4	boreholes				795.70	**795.70**
5	springs				27.25	**27.25**
6	WTWs & Raw Water PS		1,163.03	1,330.89	-	**2,493.92**
7	Pump Stations		499.22	176.58	-	**675.80**
8	Transmission Pipelines		933.37	1,045.86	326.24	**2,305.46**
9	Storage Facilities		951.57	509.03	704.14	**2,164.74**
10	Distribution System		305.75	510.67	278.50	**1,094.91**
11	Water Meters		200.00	150.00	109.00	**459.00**
12	Vehicles and motor cycle		45.00	45.00	-	**90.00**
13	STI		740.00	450.00	571.00	**1,761.00**
14	Design and Supervision		423.32	369.08	246.03	**1,038.43**
	Water base cost		**5,261.25**	**4,587.10**	**3,057.86**	**12,906.20**
	Physical Contingency - 7.5%		394.59	344.03	229.34	967.97
	Pirce Contingency - 3% pa		526.13	458.71	305.79	1,290.62
	Total Water		**6,181.97**	**5,389.84**	**3,592.98**	**15,164.79**
15	Communal toilet facilities		327.00	381.50	381.50	**1,090.00**
16	Household Sanitation Strategy		50.00	50.00	50.00	**150.00**
17	Sludge exhausting vehicles		210.00	210.00	210.00	**630.00**
18	Dedicated FS Treatment Plant		327.00	130.80	130.80	**588.60**
19	Solid Waste		335.83	290.49	625.33	**1,251.65**
20	STI		74.00	74.00	111.00	**259.00**
21	Design and Supervion		115.84	99.47	132.01	**347.31**
	Sanitation Base cost		**1,439.66**	**1,236.25**	**1,640.64**	**4,316.56**
	Physical Contingency - 7.5%		107.97	92.72	123.05	323.74
	Pirce Contingency - 3% pa		143.97	123.63	164.06	431.66
	Total Sanitation		**1,691.61**	**1,452.60**	**1,927.75**	**5,071.95**
22	Storm Water		60.00	20.00	76.00	156.00
23	Design and Supervision		5.25	1.75	6.65	13.65
	Storm Water Base Cost		**65.25**	**21.75**	**82.65**	**169.65**
	Physical Contingency - 7.5		4.89	1.63	6.20	12.72
	Pirce Contingency - 3% pa		6.53	2.18	8.27	16.97
	Total Urban Drainage		**76.67**	**25.56**	**97.11**	**199.34**
24	**Program Management base cost**		-	-	-	762.05
	Price contingency - 10%					**76.20**
	Total Program Management					**838.25**
	Land acquisition cost	-	**38.40**	**15.60**	**36.00**	**90.00**
	Physical Contingency - 7.5%	-	**5.57**	**2.26**	**5.22**	**13.05**
	Pirce Contingency - 3% pa	-	**1.15**	**0.47**	**1.08**	**2.70**
	Total Land	-	**45.12**	**18.33**	**42.30**	**105.75**
	SCHEME TOTAL		7,950.24	6,867.99	5,617.85	21,274.33

Table B4.4 – Kenya Investment Costs

		Kenya towns' investment ('000 USD)			
		Kericho (Option 5)	Keroka (Option 2)	Isebania	Kenya Total
1	Source Development				-
2	river intake	-	65.40	32.70	**98.10**
3	dam				-
4	boreholes				-
5	springs				-
6	WTWs & Raw Water PS	-	1,168.48	1,876.98	**3,045.46**
7	Pump Stations	-	598.41	306.29	**904.70**
8	Transmission Pipelines	-	318.28	-	**318.28**
9	Storage Facilities	-	807.69	543.91	**1,351.60**
10	Distribution System*	-	474.59	397.21	**871.80**
11	Water Meters	-	150.00	150.00	**300.00**
12	Vehicles and motor cycle	-	45.00	45.00	**90.00**
13	STI	300.00	514.50	918.00	**1,732.50**
14	Design and Supervision	26.25	362.46	373.63	**762.34**
	Water base cost	**326.25**	**4,504.80**	**4,643.73**	**9,474.78**
	Physical Contingency - 7.5%	24.47	337.86	348.28	710.61
	Pirce Contingency - 3% pa	32.63	450.48	464.37	947.48
	Total Water	**383.34**	**5,293.14**	**5,456.38**	**11,132.86**
15	Communal toilet facilities	76.30	152.60	114.45	**343.35**
16	Household Sanitation Strategy	50.00	50.00	50.00	**150.00**
17	Sludge exhausting vehicles	210.00	210.00	210.00	**630.00**
18	Dedicated FS Treatment Plant	-	196.20	196.20	**392.40**
19	Waste Water Collection and Treatment	1,249.75			**1,249.75**
20	Vehicle and motor cycle	45.00			
21	Solid Waste	545.00	347.17	324.49	**1,216.66**
22	STI	309.00	117.00	86.00	**512.00**
23	Design and Supervion	217.44	93.88	85.85	**397.18**
	Sanitation Base cost	**2,702.49**	**1,166.85**	**1,066.99**	**4,936.33**
	Physical Contingency - 7.5%	202.69	87.51	80.02	370.23
	Pirce Contingency - 3% pa	270.25	116.68	106.70	493.63
	Total Sanitation	**3,175.43**	**1,371.05**	**1,253.72**	**5,800.19**
					-
24	Storm Water	-	22.00	80.00	102.00
25	Design and Supervision	-	1.93	7.00	8.93
	Storm Water Base Cost	-	**23.93**	**87.00**	**110.93**
	Physical Contingency - 7.5%	-	1.79	6.53	8.32
	Pirce Contingency - 3% pa	-	2.39	8.70	11.09
	Total Urban Drainage	-	**28.11**	**102.23**	**130.34**
26	**Program Management base cost**	-	-		631.14
	Pirce Contingency - 3% pa				**63.11**
	Total Program Management				**694.25**
	Land acquisition cost	-	**15.00**	**21.00**	**36.00**
	Physical Contingency - 7.5%	-	-	**2.18**	**3.05**	**5.22**
	Pirce Contingency - 3% pa	-	-	**0.45**	**0.63**	**1.08**
	Total Land	-	-	**17.63**	**24.68**	**42.30**
	SCHEME TOTAL	3,558.77	6,692.30	6,812.32	17,757.64
	* the item for Isebania includes support to Sirare to the tune of USD 200,000.00				

Table B4.5 – Tanzania Investment Costs

		Tanzania towns' investment ('000 USD)				
		Geita	**Sengerema**	**Nansio**		**Tanzania Total**
1	Source Development		-	-		-
2	river intake					-
3	dam					-
4	boreholes	174.40				**174.40**
5	springs	27.25				**27.25**
6	WTWs & Raw Water PS	372.78	2,748.98	1,996.88		**5,118.64**
7	Pump Stations	327.00	480.69	259.42		**1,067.11**
8	Transmission Pipelines	382.48	3,073.92	754.72		**4,211.12**
9	Storage Facilities	817.50	1,783.24	1,144.50		**3,745.24**
10	Distribution System	480.58	789.38	569.74		**1,839.70**
11	Water Meters	400.00	436.00	200.00		**1,036.00**
12	Vehicles and motor cycle	45.00	45.00	45.00		**135.00**
13	STI	260.00	460.00	567.50		**1,287.50**
14	Design and Supervision	287.61	859.01	484.55		**1,631.17**
	Water base cost	**3,574.60**	**10,676.21**	**6,022.31**		**20,273.13**
	Physical Contingency 7.5%	268.10	800.72	451.67		1,520.48
	Pirce Contingency - 3% pa	357.46	1,067.62	602.23		2,027.31
	Total Water	**4,200.16**	**12,544.55**	**7,076.22**		**23,820.93**
15	Communal toilet facilities	190.75	190.75	190.75		**572.25**
16	Household Sanitation Strategy	50.00	50.00	50.00		**150.00**
17	Sludge exhausting vehicles	210.00	210.00	210.00		**630.00**
18	Dedicated FS Treatment Plant	654.00	483.96	261.60		**1,399.56**
19	Solid Waste	**479.71**	**462.71**	**359.00**		**1,301.41**
20	STI	175.11	481.00	175.07		**831.18**
21	Design and Supervion	153.96	164.36	109.06		**427.38**
	Sanitation Base cost	**1,913.53**	**2,042.78**	**1,355.48**		**5,311.78**
	Physical Contingency - 7.5%	143.51	153.21	101.66		398.38
	Pirce Contingency - 3% pa	191.35	204.28	135.55		531.18
	Total Sanitation	**2,248.39**	**2,400.26**	**1,592.69**		**6,241.35**
22	Storm Water	20.00	20.00	20.00		60.00
23	Design and Supervision	1.75	1.75	1.75		5.25
	Storm Water Base Cost	**21.75**	**21.75**	**21.75**		**65.25**
	Physical Contingency - 7.5%	1.63	1.63	1.63		4.89
	Pirce Contingency - 3% pa	2.18	2.18	2.18		6.53
	Total Urban Drainage	**25.56**	**25.56**	**25.56**		**76.67**
	Program Management base cost	-	-	-		631.14
	Pirce Contingency - 3% pa					**63.11**
	Total Program Management					**694.25**
	Land acquisition cost	**12.00**	**24.00**	**30.00**	-	**66.00**
	Physical Contingency - 7.5%	**1.74**	**3.48**	**4.35**	-	**9.57**
	Pirce Contingency - 3% pa	**0.36**	**0.72**	**0.90**	-	**1.98**
	Total Land	**14.10**	**28.20**	**35.25**	-	**77.55**
	SCHEME TOTAL	6,474.11	14,970.37	8,694.46	-	30,833.19

Table B4.6 – Capacity Building

Capacity Building costing		
Activity	Cost per per twons x 1000 usd	total for 15 towns x1000 USD
1.0 Strengthening, training and Orientation of Project	27.95	419.22
2.0 Preparation of Strategic Urban Plans	47.22	708.35
3.0 Fast Track Capacity Building Programme, propoor strategy	138.09	2,071.41
4.0 Capacity Building Programme in SWM	25.43	381.46
5.0 Technical and Operational Training	29.53	442.98
6.0 Capacity Building in Sanitation, Micro-Credit assessment	26.67	400.00
7.0. Capacity Building in Urban Catchment Management	18.89	283.28
8.0. Tariff Studies	23.47	352.03
9.0 Technical Assistance for M&E System and gender mainstreaming in EAC water and san program	21.42	321.27
10. Development Environmental monitoring information system for LVB		339.45
11. Support to the implementation of the mechanism for harmonisation and monitoring of the water release and abstraction in LV		400.00
Sub Total		6,119.45
contingency	-	611.95
Grand Total	-	**6,731.40**

Table B4.7 Program Management

Detail Costing of Program Management		USD					
		LVBC	Uganda	Rwanda	Burundi	Kenya	Tanzania
Item Description							
Goods							
IT Equipment	LS	18,600.00	18,600.00	18,600.00	18,600.00	18,600.00	18,600.00
Office furniture	LS	6,900.00	6,900.00	6,900.00	6,900.00	6,900.00	6,900.00
2 Vehicle 4x4 six siter pick up vehicle	No.	60,000.00	80,000.00	80,000.00	80,000.00	80,000.00	80,000.00
Subtotal Goods		**85,500.00**	**105,500.00**	**105,500.00**	**105,500.00**	**105,500.00**	**105,500.00**
Services							
Project Audit	LS	500,000.00	-	-	-	-	-
Consultancy(MTR, PCR, other study)	LS	150,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00
Subtotal Services		**650,000.00**	**50,000.00**	**50,000.00**	**50,000.00**	**50,000.00**	**50,000.00**
Operating Expenses							
Program Management personnel	LS	654,000.00	392,250.00	392,250.00	536,250.00	392,250.00	392,250.00
Program Management Transportation	trips	30,000.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00
Training		-	-	-	-	-	-
General Operation Charges		100,000.00	64,000.00	64,000.00	64,000.00	64,000.00	64,000.00
RPSC Meetings - LVBC	bi-ann	225,000.00	-	-	-	-	-
Reg. APR and MTR / National APR/MTR	Yearly	210,000.00	75,000.00	75,000.00	75,000.00	75,000.00	75,000.00
Subtotal Operating expenses		**1,219,000.00**	**538,750.00**	**538,750.00**	**682,750.00**	**538,750.00**	**538,750.00**
		1,954,500.00	694,250.00	694,250.00	838,250.00	694,250.00	694,250.00

Table B4.8 Summary Cost by Component

Cost By Component	x 1000 USD		x 1000 UA
Water Supply	70,723.86		47,821.93
Environmental Sanitation	22,390.73		15,140.12
Drainage	2,221.12		1,501.87
Capacity building	6,119.45		4,137.84
Project Management	5,063.41		3,423.77
Land acquisition	382.80		258.84
Total Base Cost	106,901.36		72,284.38
Physical Contingency	7,178.89		4,854.21
Price Contingency	10,690.14		7,228.44
Total project cost	124,770.39		84,367.02

Table B4.9 Summary Cost by Category and Source in million UA

Expenditure Categories	Partner States Financing	ADF financing		
	All Local	Foreign	Local	Total
Works	8.66	36.15	18.31	54.45
Goods		5.65	0.71	6.36
Services		9.26	2.63	11.89
Operating Costs	0.30	0.82	1.90	2.72
Total	8.96	51.88	23.55	75.43

B5. Implementation Arrangements

The East African Community (EAC) will be the grant recipient for ADF grant and will sign the grant agreement with the Fund. Subsidiary agreements will be signed between the EAC and beneficiary countries to enable the direct transfer of the grant resources from the Fund to the beneficiary countries. Each member country shall be responsible for execution of program activities within their beneficiary towns through the existing institutions, utilising and incorporating lessons learnt and experiences gained from implementing the Bank and other development partners' interventions in the RMCs. The following institutions, which fall under the partner states' line Ministries, will be the IAs;

- The Directorate for Water Development for Uganda
- Régie de Production et de Distribution de l'Eau et de l'Electricité (REGIDESO) for Burundi
- The Water Supply & Sanitation Sector Co-ordination Unit in the Ministry of Infrastructure for Rwanda
- Lake Victoria South Water Services Board for Kenya
- Mwanza Water and Sewerage Authority for Tanzania

Since in all the countries, the management of sanitation and hygiene initiatives rests with the local authorities, each beneficiary town/local authority will sign a program implementation MOU with the program IAs. The MOUs are meant to ensure that the interventions will be sustainable, while the towns build capacity to adequately manage and maintain the infrastructure. IAs should ensure that local town level involvement is engendered throughout the implementation of the program.

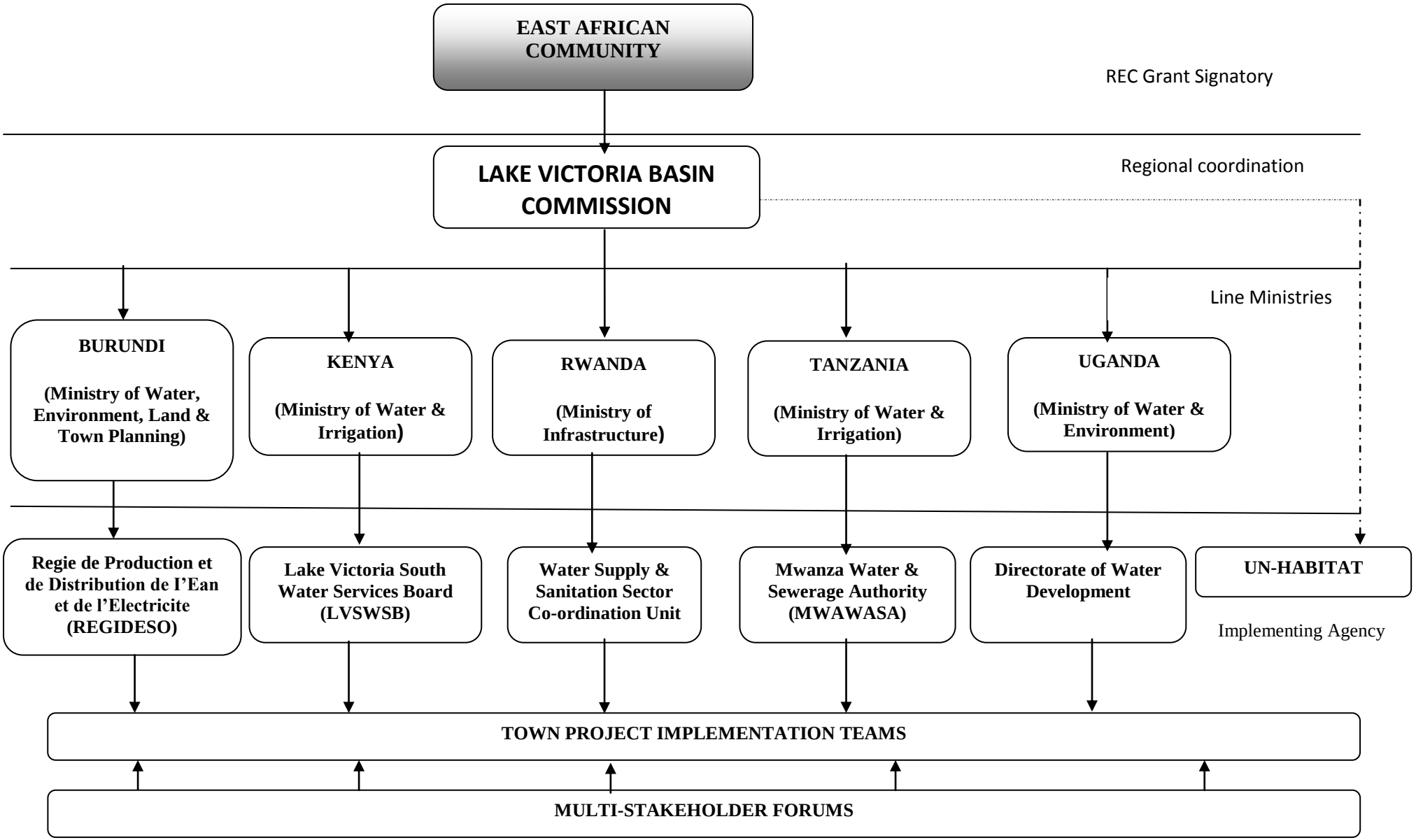
In addition to the five IAs listed above, the LVBC, an institution of the EAC based in Kisumu, kenya, will play overall program oversight at regional level. Regional level capacity building and reporting will be coordinated and implemented at LVBC level, and the UN-HABITAT will actively participate in undertaking most of the capacity building initiatives. The UN-HABITAT will execute the capacity building component of the program targeting the towns, IAs and service providers. Within the framework of UN-HABITAT's existing MOU for collaboration with the EAC, a specific project agreement will be signed between LVBC and UN-HABITAT to execute the capacity building component of the program.

The regional level coordination will further be strengthened through the existing Regional Policy Steering Committee (RPSC) composed of the permanent secretaries of the line ministries of the five partner states and the various technical organs of the EAC. The RPSC will provide the overall operational policy guidance to ensure that the program objectives are attained.

The IAs will report technical and financial progress through their line ministries to LVBC, who will consolidate the report and submit to the Fund on a quarterly basis. For the implementation of the program, the IAs shall establish program management teams containing, but not limited to the following skills; program coordinators, procurement, accounting, environmental health experts whose qualifications will be acceptable to the Fund.

Stakeholder involvement in the implementation and management of the program will be paramount as it will contribute to local buy-in and support the sustainability of the interventions. As such town level project teams involving all stakeholders will be set up, which will ensure the involvement of all stakeholders. In line with lessons learnt from the LVWATSAN phase one, Multi Stakeholders Forums (MSFs) will be set up in each town, and will have at least 50% women representation in decision making positions to encourage increased participation by women groups. The objective of

the MSF is to help the IAs in the participatory planning and budgeting, preparation of citizen reports cards, strengthening consumer voice in utilities and preparation and implementation of town development strategies. Once the members of the MSFs are selected, training workshops will be held and operations manuals prepared to define the organizational structures as well as roles and responsibilities and to provide guidance to facilitate the day to day operations of these bodies. Exchanges with Phase 1 towns will be organized as a means of creating a clear understanding of roles and responsibilities. The organo-gram below provides a diagrammatical illustration of the envisaged implementation arrangements:


EAST AFRICAN COMMUNITY
REC Grant Signatory
LAKE VICTORIA BASIN COMMISSION
Regional coordination
Line Ministries
BURUNDI
(Ministry of Water, Environment, Land & Town Planning)
KENYA
(Ministry of Water & Irrigation)
RWANDA
(Ministry of Infrastructure)
TANZANIA
(Ministry of Water & Irrigation)
UGANDA
(Ministry of Water & Environment)
Regie de Production et de Distribution de I'Ean et de l'Electricite (REGIDESO)
Lake Victoria South Water Services Board (LVSWSB)
Water Supply & Sanitation Sector Co-ordination Unit
Mwanza Water & Sewerage Authority (MWAWASA)
Directorate of Water Development
UN-HABITAT
Implementing Agency
TOWN PROJECT IMPLEMENTATION TEAMS
MULTI-STAKEHOLDER FORUMS

B6. Financial Management and Disbursement

Introduction

The financial management (FM) assessment was done in accordance with the Bank's Guidelines for the Financial Management and Financial Analysis of Projects (2007). The objective of the assessment was to determine whether the program IAs have acceptable financial management arrangements, which will ensure that: (1) the funds are used only for the intended purposes in an efficient and economical way, (2) the preparation of accurate, reliable and timely periodic financial reports, and (3) internal control exist for early detection of errors, unusual practices as adherent to fraud and corruption and (4) the entities' assets are safeguarded. The FM assessments for the different entities were done in June and July 2010 by financial management specialists.

Country Issues

The recent Public Financial Management (PFM) Assessments for Uganda, Tanzania, Kenya and Rwanda indicate that there has been overall progress in aggregate fiscal discipline, strategic allocation of resources and the efficient delivery of services. There are, however, some challenges in the areas of accounting, recording, reporting and auditing. There is no PFM assessment done for Burundi. To address some of the issues mentioned in the PFM assessment reports for each of the countries, there have been various PFM reforms to improve the Public Financial Management System, including the revision of the Government Financial Management Acts in some of the countries.

Implementing Agency

The IAs for the Program will be the Lake Victoria South Water Services Board (LVWSB) in Kenya, the Directorate of Water Development in the Ministry of Water and Environment (MoWE) in Uganda, Mwanza Urban Water Supply and Sewerage Authority (MWAUWASA) in Tanzania, Water Supply & Sanitation Sector Coordination Unit under the oversight function of the Permanent Secretary, Ministry of Infrastructure (MINIFRA) in Rwanda, and Regie De Production Et distribution D'Eau Et D' Elecricite (REGIDESO) a state company under the oversight function of the Permanent Secretary, Ministry of Energy, Mines & Natural Resources. The overall coordination responsibilities rest with the Lake Victoria Basin Commission (LVBC) based in Kisimu, Kenya.

Risk Analysis

Risk	Risk Rating	Risk mitigating measures	Conditions for Disbursements
Inherent risk			
Country level	M	In most of the countries, which are the beneficiaries of the program, there are PFM reforms to strengthen the PFM systems	No
Entity level	L	The impact of the IAs on project implementation is minimal; providing overall guidance on implementation of the Program	No
Program level	M	Most of the IAs have prior experience in the implementation of Bank- financed projects	No
Control Risk			
Budgeting	L	Most of the IAs have in place good systems	No

		for preparing, reviewing, approving and monitoring budget expenditures/ activities that will be extended to the Program. Annual Work plans and Budgets will be prepared	
Accounting	M	In general, accounting systems are satisfactory. Designated qualified and experienced accountant will be assigned to handle the program transactions for each of the IAs. Program accounting will be done using computerized accounting systems	No
Internal control	L	The Internal Audit Unit in each of the IAs will include the Program in their annual work plan. . In Rwanda and Burundi, internal function will be carried out by the Supervising Ministries. The internal control system of the IAs is adequate.	No
Fund flows	M	Procedures are in place for effecting payments	No
Financial reporting	M	Program reporting will be done using accounting software. Financial management training will be provided during the launch workshop.	No
Auditing	L	An independent auditor will be appointed by the East African Community Audit Commission to carry out the audit of the program in accordance with the Bank‘s approved Terms of Reference	No
Overall risk	**M**		

H – High M – Modest L – Low

The overall risk for the Program is modest. All IAs have reasonable financial management systems to report and account for the financial transactions of the Program.

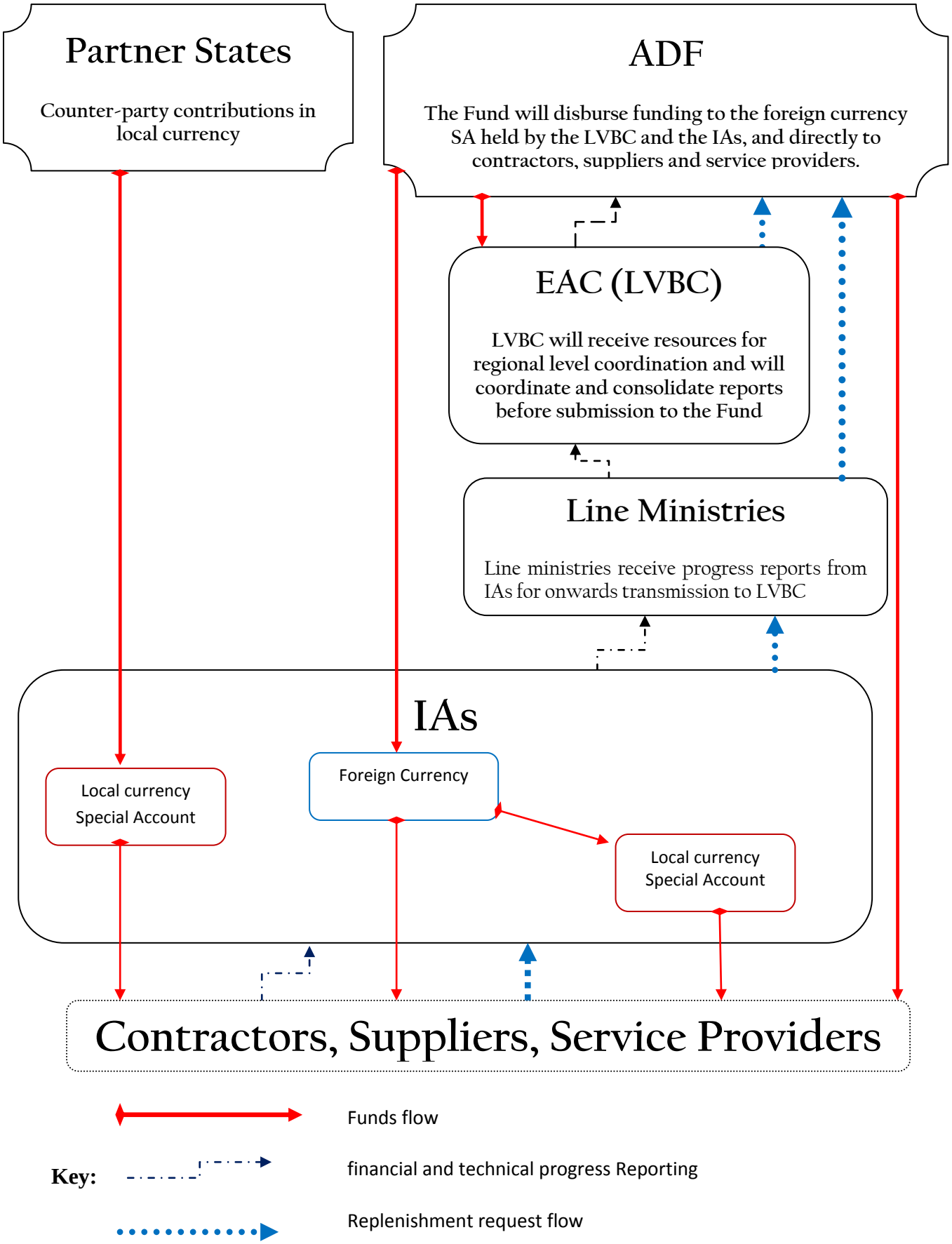
Strengths and Weaknesses

The main strengths of the program financial management systems for the various IAs is that most of them have been handling donor-financed projects, and their staff have adequate and relevant experience in handling the management of project resources. Most of the IAs use computerized accounting systems, which will facilitate the recording and accounting of financial transactions. The ability of the LVBC to consolidate and submit regular financial reports may be affected by the relatively high number of program IAs in the five countries.

Funds Flow Arrangements

Each of the IAs in the five partner states and the LVBC will receive money from the Grant Account through a special foreign currency account to be opened in a bank acceptable to the Fund. Each of the IAs will also open a local currency account to transfer money from the special foreign currency account to effect payments for eligible expenditures. The program will also use the direct payment disbursement method to effect payments to contractors, consultants and suppliers. All payments will be made by each of the IAs and LVBC. The project funds and reporting flow chart is shown below.

FUNDS AND REPORTING FLOW-CHART



Budgeting Arrangements

Each of the IAs will prepare an annual work plan and budget for implementing program activities taking into account the specific program components. The plans and budgets will be submitted to the partner state's line ministry for onward transmission to LVBC for consolidation. The consolidated work plan and budget will be submitted to the Bank by the LVBC.

Key Accounting Policies and Procedures

The IAs will maintain program books of accounts, including a Cash Book, ledgers, journal vouchers, fixed asset register and contracts register. The cash-basis of accounting will be used to account and report the Program transactions. The financial statements will be prepared in line with the International Public Sector Accounting Standards. All of the IAs will observe the accounting practices acceptable to each of the recipient countries, where it is appropriate.

Financial Reporting

The Bank requires the submission of Quarterly Progress Reports (within 45 days after the end of each quarter) showing cash receipts by sources and expenditures by main expenditure classifications together with Physical Progress Reports linking financial information with physical progress and highlighting issues that require attention. The Program financial statements will include:

i) Statement of Receipts (funds received from the Bank and counterpart funding) and Expenditures (expenditures incurred for both the current year and accumulated to-date) showing separately Bank's funding and the counterpart contributions and cash balances;

ii) Statement of Special Account;

iii) Statements of Expenditures describing the applicable accounting standards and a detailed analysis of the main accounts;

iv) Notes to the Financial Statements describing the applicable accounting principles in place and a detailed analysis of the main accounts; and.

v) Payment applications submitted to the Bank

Internal Control and Internal Auditing

There are good internal control systems in each of the IAs. Most of the IAs have internal audit units, staffed with adequate and qualified staff. The internal auditors will also cover the Program transactions in their work program.

Disbursement Arrangements

The Program will use the four disbursement methods and procedures prescribed in the disbursement handbook. The Bank's Disbursement Handbook could be accessed from the Bank's website. In addition, the Bank will issue a Disbursement Letter of which the content will be discussed and agreed during negotiations.

Each of the IAs and the LVBC will open a program Special Account in foreign currency, and a local currency account in a bank acceptable to the Fund. The local currency account will be used to transfer money from the special account to cover eligible Program expenditures. Replenishment of the special accounts will be in accordance with the disbursement handbook. Replenishments to each of the IAs and LVBC will not be linked to other IAs' progress. Each of the IAs and LVBC will, through their respective ministries and ministry of finance, submit payment requests to the Bank. All replenishment and payment request to the Bank by the IAs shall be copied to the LVBC.

Overall Program Categories of Program Expenditure for each country is as shown below.

Uganda - Categories of Program Expenditure (Million UA)

Expenditure Categories	Government			ADF		
	Foreign	Local	Total	Foreign	Local	Total
Works		1.78	1.73	6.06	2.61	8.67
Goods				0.98	0.13	1.11
Services				0.71	0.50	1.21
Operating cost		0.06	0.06		0.36	0.36
Total		1.78	1.78	7.75	3.60	11.35

Rwanda - Categories of Program Expenditure (Million UA)

Expenditure Categories	Government			ADF		
	Foreign	Local	Total	Foreign	Local	Total
Works		2.47	2.47	7.74	4.48	12.22
Goods				1.13	0.14	1.27
Services				0.98	0.57	1.55
Operating cost		0.10	0.10		0.36	0.36
Total		2.57	2.57	9.85	5.55	15.40

Burundi - Categories of Program Expenditure (Million UA)

Expenditure Categories	Government			ADF		
	Foreign	Local	Total	Foreign	Local	Total
Works				6.75	4.60	11.35
Goods				1.17	0.15	1.32
Services				0.78	0.49	1.27
Operating cost		0.07	0.07		0.46	0.46
Total		0.07	0.07	8.70	5.70	14.40

Kenya - Categories of Program Expenditure (Million UA)

Expenditure Categories	Government			ADF		
	Foreign	Local	Total	Foreign	Local	Total
Works		1.42	1.42	5.04	2.83	7.86
Goods				1.14	0.14	1.28
Services				0.65	0.43	1.08
Operating cost		0.03	0.03		0.36	0.36
Total		1.45	1.45	6.83	3.76	10.59

Tanzania - Categories of Program Expenditure (Million UA)

Expenditure Categories	Government			ADF		
	Foreign	Local	Total	Foreign	Local	Total
Works		3.04	3.04	10.56	3.79	14.35
Goods				1.17	0.15	1.32
Services				1.15	0.64	1.79
Operating cost		0.05	0.05		0.36	0.36
Total		3.09	3.09	12.88	4.94	17.82

Regional - Categories of Program Expenditure (Million UA)

Expenditure Categories	Government			ADF		
	Foreign	Local	Total	Foreign	Local	Total
Works						
Goods				0.06		0.06
Services				4.99		4.99
Operating cost				0.82		0.82
Total				5.87		5.87

Counterpart Funding

Countries	Government Contribution – million UA
Uganda	1.78
Rwanda	2.57
Burundi	0.07*
Kenya	1.45
Tanzania	3.09
Total	8.96

***Land acquisition**

B7. External Audit

External Audit

The program accounts of each of the IAs and the LVBC will be audited by an independent auditor, appointed by the East African Community Audit Commission and acceptable to the Fund. The audited program accounts along with the management letters will be submitted to the Bank within six months after the end of each fiscal year. The Program audit will be carried out in accordance with Terms of Reference (TOR) that has been approved by the Bank.

The selected audit firm shall have sufficient demonstrated capacity and presence in at least three of the partner states to undertake audit exercise within the stipulated time limit (six months after financial year end).

TERMS OF REFERENCE FOR EXTERNAL AUDITORS OF THE AFRICAN DEVELOPMENT BANK GROUP FINANCED PROGRAMS

BACKGROUND

1.1 The African Development Bank Group (the Bank) has been supporting the Government of (***name the Country***) in its development efforts since ***19XX/20XX*** (***to be determined***). A Loan/Grant of UA **XX** million (***to be determined***) was approved in 19XX/***20XX*** (***to be determined***) to finance the (***name the Program***).

1.2 ***Provide other formation such as Development objectives of the program; Institutional and program financial management arrangements; Other co-financiers if any; Financial year/period to be audited; Level of disbursements; and any other pertinent information that should be brought to the attention of the auditors.***

OBJECTIVE OF THE AUDIT

2.1 The objective of the audit of the Program financial statements (PFSs) is to enable the auditors to express an independent[2] professional opinion on the financial position of the Program as at (***date to be determined***); and to ensure that the funds granted to the Program have been used for their intended purposes.

2.2 The program books of accounts provide the basis for preparation of the PFSs by the program implementing agency and are established to reflect the financial transactions in respect of the program. The implementing agency maintains adequate internal controls and supporting documentation for transactions.

RESPONSIBILITY FOR PREPARATION OF FINANCIAL STATEMENTS

The responsibility for the preparation of PFSs lies with the Program Implementation Unit (PIU). The PIU is also responsible for :

the selection and application of accounting policies. The PIU will prepare the PFSs in accordance with applicable accounting standards-either the International Public Sector Accounting Standards

[2] The auditors will not provide any other services that may result to a conflict of interest.

(IPSASs), International Financial Reporting Standards (IFRs), or National Accounting Standards that comply with IPSASs or IFRs in all material respects; and

Implementing accounting, administrative and financial procedures documented in a manual/s..

The auditors are responsible for the formulation of an opinion on the PFSs based on their audit conducted in accordance with ISAs (International Standards on Auditing) issued by the IFAC (International Federation of Accountants) or ISSAIs (International Standards of Supreme Audit Institutions) issued by the INTOSAI. National Auditing Standards that comply with ISAs or ISSAIs in all material respects will also be accepted. In accordance with these standards, the auditors will request the PIU for an Engagement/Confirmation Letter committing the PIU's management to the preparation of the PFSs and maintenance of proper internal control systems as well as acceptable documentation for all financial transactions.

SCOPE OF THE AUDIT

The audit will be carried out in accordance with the Standards specified in 3.2 above and will include such tests and controls as the auditors consider necessary under the circumstances. In conducting the audit, special attention should be paid to the following:

All Bank funds have been used in accordance with the conditions of the loan agreement, with due attention to economy and efficiency and only for the purposes for which the funds were provided;

Counterpart funds (government budget) and external funds (in case of co-financing) have been provided and used in accordance with the conditions of the loan agreement, with due attention to economy and efficiency and only for the purposes for which they were provided;

Goods, works and services financed have been procured in accordance with the loan agreement and in accordance with the Bank's rules and procedures[3]; and have been properly accounted for ;

Appropriate supporting documents, records and accounts relating to all program activities have been kept. Clear linkages should exist between the books of accounts and the financial statements presented to the Bank;

Special accounts have been maintained in accordance with the provisions of the loan agreement and in accordance with the Bank's rules and procedures (refer to sections 6 and 7 for further guidance);

The financial statements have been prepared by program management in accordance with applicable accounting standards mentioned (cf. section 3 above) and give a true and fair view of the financial position of the Program as at the year end and of its receipts and expenditures for the period ended on that date;

[3] Depending on the complexity of certain procurement activities, the Auditors may integrate, in the audit team, technical experts during the period of the contract. In such a case, the Auditors will conform to **ISA 620: (Using the Work of an Auditor's Expert)**. The necessity for the use of an expert's works should be brought to the attention of the Borrower and the Bank for a mutual agreement and appropriate decisions.

Comprehensive assessment of the adequacy and effectiveness of the accounting and overall internal control system to monitor expenditures and other financial transactions and ensure safe custody of program-financed assets and that they are being used for the intended purposes;

Program's fixed assets are real and properly evaluated and program property rights or related beneficiaries' rights are established in accordance with loan conditions; and

Ineligible expenditures identified during the audit will be reflected in a separate paragraph of the audit report and if material, the point should be reflected in the auditors' opinion.

4.2 In accordance with International Standards on Auditing, the auditors shall pay attention to the following:

Fraud and Corruption : In accordance with **ISA 240 (The Auditor's Responsibilities Relating to Fraud in an Audit of Financial Statements)** the auditors shall identify and evaluate risks related to fraud, obtain or provide sufficient evidence of analysis of these risks and assess properly the risks identified or suspected;

Rules and regulations : In preparing the audit approach and in executing the audit procedures, the auditors shall evaluate the PIU's compliance with the rules and regulations that might impact significantly the PFSs as required by **ISA 250 (Considerations of Laws and Regulations in an Audit of Financial Statements)**;

Governance : Communicate with the PIU's Management responsible for Governance regarding significant audit issues related to governance in accordance with **ISA 260: (Communication with those charged with Governance)**; and

Risks : With a view to reducing audit risks to a relatively low level, the auditors will apply appropriate audit procedures and handle anomalies/risks identified during their evaluation. This is in accordance with **ISA 330 (The Auditor's Responses to Assessed Risks)**.

FINANCIAL STATEMENTS

5.1 The auditors will ensure that the PFSs are prepared in accordance with the standards mentioned above (cf. section 3 above) and give a true and fair view of the financial position of the program as at the fiscal year end and its receipts and expenditures for the financial year ended on that date.

5.2 The program financial statements prepared by program management shall include:

(a) **Non-Revenue Earning Programs**

i) Statement of Receipts[4] (funds received from the Bank, counterpart funding and where applicable, co-financiers' funding) and Expenditures (expenditures incurred for both the current year

[4] Any revenue generated by the Project e.g. sale of bid documents, disposal of project assets, bank credit interests earned in the special account and fees earned should be accounted for and disclosed.

and accumulated to-date) showing separately Bank's funding, those of counterparty and co-financiers if applicable and cash balances;

ii) Statement of Special Account;

iii) Statements of Expenditures describing the applicable accounting standards and a detailed analysis of the main accounts; and

iv) Notes to the Financial Statements describing the applicable accounting principles in place and a detailed analysis of the main accounts.

(b) Revenue-Earning Programs

i) Balance Sheet showing accumulated funds of the program, bank balances and other assets and liabilities of the program as at the close of each fiscal year;

ii) Income (or Operating, or Income and Expenditure, or Profit and Loss) Statement;

iii) Cash Flow Statement that should disclose the cash flows during each fiscal year;

iv) Statement of special account;

v) Statements of expenditures; and

vi) Notes to the Financial Statements describing the applicable accounting principles in place and a detailed analysis of the main accounts.

5.3 As an annex to the financial statements mentioned above, the audit report should include:

(a) A reconciliation between the amount shown as "received from the Bank" and that shown as having been disbursed by the Bank. The reconciliation should indicate the methods used for disbursement, i.e. special account, direct payment or reimbursement guarantee, reimbursement methods with those recommended in the appraisal report and the disbursement letter ; and

(b) A comprehensive list of all fixed assets purchased, with given dates, values and condition of the assets.

6. STATEMENT OF EXPENDITURES (SOE)

In conjunction with the audit of the PFSs, the auditors should apply such tests and controls as they consider necessary to:

(a) Audit all Statements of Expenditures (SOEs) used as a basis for the submission of withdrawal applications to the Bank by the program;

(b) Determine the eligibility of expenditures in accordance with the loan agreement and appraisal report. Where ineligible expenditures are identified as having been included in the withdrawal applications and replenished, these should be noted separately by the auditors; and

(c) Annexed to the PFSs should be a schedule listing withdrawal applications submitted on the basis SOEs with their reference number and the amount involved.

7. SPECIAL ACCOUNT (SA)

7.1 In conjunction with the audit of the PFSs, the auditors are also required to review the activities of the special account associated with the program. The auditors should examine the :

(a) eligibility and correctness of financial transactions during the period under review and fund balances at the end of such period;

(b) operation and use of the SA in accordance with Loan/Grant Agreement/Disbursement Letter; and

(c) adequacy of internal controls for this type of disbursement mechanism.

7.2 The Special Account usually comprises:

- Initial deposit and subsequent replenishments received from the Bank;
- Withdrawals related to program expenditures;
- Interest that may be earned on the account balance; and
- The remaining balance at the end of the period.

AUDIT REPORT

8.1 The audit report will comprise (i) the auditors' opinion on the program financial statements and (ii) a complete set of program's financial statements and other relevant statements as mentioned in section 5.2 above.

8.2 All ineligible expenditures will be disclosed in an annex to the audit report.

9. MANAGEMENT LETTER

9.1 In addition to the audit report, the auditors will prepare a "management letter" in which they will:

- Give comments and observations on the accounting records, procedures, systems and controls that were examined during the course of the audit;
- Identify specific deficiencies and areas of weakness in systems and controls and make recommendations for improvement;
- Report on the degree of compliance with each of the financial covenants on the Loan/Grant agreement and give comments, if any, on internal and external matters affecting such compliance;
- Report on the implementation status of recommendations pertaining to previous period audit reports;
- Communicate matters that have come to their attention during the audit which might have a significant impact on the implementation and sustainability of the program; and
- Bring to the borrower's attention any other matters that the auditors consider pertinent.

9.2 Ideally, the management letter will include reactions/comments from PIUs on the weaknesses noted by the auditors.

10. GENERAL INFORMATION

10.1 The Financial statements including the audit report, management letter and the PIU's responses should be received by the Bank within six (6) months after the end of the fiscal year under review.

10.2 The auditors should be given access to all legal documents, correspondence and any other information associated with the program and deemed necessary by them. Confirmation of amounts disbursed and outstanding at the Bank should also be obtained. The program task manager at the Bank can assist in obtaining these confirmations.

10.3 It is recommended that the auditors become familiar with the following documents that may have been prepared by the Bank:

- General Conditions Applicable to Loan, Guarantee and Grant Agreements;
- Protocol of Grant Agreement;
- Program Appraisal Report;
- Guidelines for Financial Management and Financial Analysis of programs;
- Disbursement Handbook;
- Aide Memoires and official communications with the Bank; and
- Procurement rules and procedures for work, goods and services.

11 AUDITORS EXPERIENCE AND QUALIFICATIONS

11.1 The audit firm should be registered and have a license from a national or regional professional Accountancy Body. The firm should have relevant experience in accounting and auditing development programs, especially donor-funded operations.

11.2 The key audit team will comprise, at least:

(a) An audit manager with at least 10 years experience in auditing and with a sound knowledge of donor-financed programs. In addition he/she should be a member of a recognized accountancy professional body;

(b) A team leader with at least a Masters degree in auditing/accounting or equivalent with a minimum of 5 years experience in auditing; and

(c) An assistant auditor with adequate experience and professional qualifications.

B8. Procurement Management

All procurement of goods, works and services financed by the Bank will be in accordance with the Bank's Rules and Procedures for the Procurement of Goods and Works or, as appropriate, Rules and Procedures for the use of Consultants, using the relevant Bank Standard Bidding Documents. Regional firms with respect to East African Community economic grouping participating in tenders under International Competitive Bidding will receive a maximum of 10% and 7.5% margin of preference on procurement of goods and works respectively in accordance with the African Development Bank Rules and Procedures for Procurement of Goods and Works. The program will be implemented by five IAs namely the DWD in the Ministry of Water and Environment in Uganda, WSSCU in the Ministry of Infrastructure in Rwanda, La REGIDESO in Burundi, the LVSWSB in Kenya, and MWAUWASA in Tanzania who will be responsible for the procurement of goods, works, services, and miscellaneous items in each country; while the LVBC will be responsible for procurement of goods, services and miscellaneous for activities under its responsibility and ensures the overall coordination of the Program. The procurement arrangements for the ADF component are derived from the following thresholds based on the assessment undertaken for each IA.

Thresholds (Amounts in UA)

	ICB	NCB	Shopping
Works	Amount > 600,000	50,000 < Amount <= 600,000	Amount <= 50,000
Goods	Amount > 200,000	20,000 < Amount <= 200,000	Amount <= 20,000

Procurement arrangements under each IA will be as follows:

Procurement by Directorate of water development – Uganda

Uganda - Summary of Procurement Arrangement (in millions UA)						
Description	ICB	NCB	Short List	Other*	Non-Bank-Funded**	Total
A. WORKS						
Short term interventions						
Water supply	1.291					1.291
	(1.024)					(1.024)
Sanitation		0.091				0.091
		(0.091)				(0.091)
Borehole drilling		0.248				0.248
		(0.197)				(0.197)
Long term interventions						0.000
Borehole drilling		0.236				0.236
		(0.187)				(0.187)
Water supply system	6.589					6.589
	(5.229)					(5.229)
Sanitation		1.126				1.126
		(1.126)				(1.126)
Water drainage		0.440				0.440
		(0.440)				(0.440)
Land fill and skip site development		0.373				0.373
		(0.373)				(0.373)
B. GOODS						0.000
Tractors, trailers and skips	0.299					0.299
	(0.299)					(0.299)
Exhausters and ugotugs	0.667					0.667
	(0.667)					(0.667)
Vehicles and motorcycles		0.126				0.126
		(0.126)				(0.126)
Furniture and office equipment (PMU)				0.017		0.017
				(0.017)		(0.017)
C. SERVICES						0.000
Study, Design, Supervision			1.014			1.014
			(1.014)			(1.014)
Hygiene and sanitation promotion			0.159			0.159
			(0.159)			(0.159)
Other consultant services			0.034			0.034
			(0.034)			(0.034)
D. PMU						0.000
Operating expenses				0.364		0.364
				(0.364)		(0.364)
Land acquisition					0.056	0.056
						0.000
Total Project	**8.847**	**2.638**	**1.207**	**0.382**	**0.056**	**13.130**
	(7.219)	(2.539)	(1.207)	(0.382)		(11.346)
[] Figures in brackets are amounts financed by ADF						
* «Other» may be LIB, Shopping, Direct Contracting or Force Account						
** Non-Bank financed refers to acquisitions financed by other sources according to their procurement procedures						

Civil works:

Short term interventions

Procurement of civil works for water supply system in three towns estimated at UA 1.291 million in aggregate will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in three towns estimated at UA 91,000 and civil works for borehole drilling estimated at UA 248,000 in aggregate will be carried out under National Competitive Bidding (NCB) procedures.

Long term interventions

Procurement of civil works for water supply system in three towns estimated at UA 6.589 million in aggregate utilising a maximum of four (4) contracts will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in three towns estimated at UA 1,126 million in aggregate will be carried out under National Competitive Bidding (NCB) procedures through three contracts, each contract worth no more than UA 500 000 maximum. Procurement of civil works for land fill and skip site development in three towns estimated at UA 373,000 in aggregate, civil works for water drainage system in three towns estimated at UA 440,000 in aggregate and civil works for borehole drilling in three towns estimated at UA 236,000 in aggregate will be carried out under NCB procedures. Each town may constitute a lot.

Goods:

Procurement of tractors, trailers and skips for an estimated amount of UA 299,000 and exhausters and ugotugs for an estimated UA 667,000 will be carried out under International Competitive Bidding (ICB) procedures. Procurement of vehicles and motorcycles estimated at UA 126,000 will be carried out under National Competitive Bidding. The acquisition of furniture and equipment for the IA is estimated at UA 17,000 and will be done through shopping due to the value and goods are readily available with enough suppliers to ensure competition. Procurement of office supplies for the functioning of the IA will equally be done through shopping as the amount per contract will not exceed UA 50.000.

Consultancy services:

Procurement of Consulting services, for study, design, monitoring and supervision of the program estimated at UA 1.014 million will be done through international short-listing using the Quality-and-Cost-based Selection method. Procurement of consulting services for hygiene and sanitation promotion estimated at UA 159,000 will be carried out through regional short listing using the Quality-and-Cost-based selection method. As the assignment emphasizes participation and local knowledge, the short list may comprise entirely NGOs. Procurement of other consultancy services needed for the execution of the program shall be in accordance with the Bank’s Procurement Rules and Procedures for the use of Consultants.

Procurement by Water Supply & Sanitation Sector Coordination Unit – Rwanda

Rwanda - Summary of Procurement Arrangement (in millions UA)						
Description	ICB	NCB	Short List	Other*	Non-Bank-Funded**	Total
A. WORKS						
Short term interventions						
Water supply	1.317					1.317
	(1.044)					(1.044)
Sanitation		0.185				0.185
		(0.185)				(0.185)
Long term interventions						0.000
Water supply system	10.648					10.648
	(8.446)					(8.446)
Sanitation		1.286				1.286
		(1.286)				(1.286)
Water drainage	0.931					0.931
	(0.931)					(0.931)
Land fill and skip site development		0.318				0.318
		(0.318)				(0.318)
B. GOODS						0.000
Tractors, trailers and skips	0.594					0.594
	(0.594)					(0.594)
Exhausters and ugotugs	0.501					0.501
	(0.501)					(0.501)
Vehicles and motorcycles		0.161				0.161
		(0.161)				(0.161)
Furniture and office equipment (PMU)				0.017		0.017
				(0.017)		(0.017)
C. SERVICES						0.000
Study, Design, Supervision			1.400			1.400
			(1.400)			(1.400)
Hygiene and sanitation promotion			0.119			0.119
			(0.119)			(0.119)
Other consultant services			0.034			0.034
			(0.034)			(0.034)
D. PMU						0.000
Operating expenses				0.364		0.364
				(0.364)		(0.364)
Land Acquisition					0.095	0.095
						0.000
Total Project	**13.990**	**1.950**	**1.553**	**0.382**	**0.095**	**17.970**
	(11.515)	(1.950)	(1.553)	(0.382)		(15.401)
[] Figures in brackets are amounts financed by ADF						
* «Other» may be LIB, Shopping, Direct Contracting or Force Account						
** Non-Bank financed refers to acquisitions financed by other sources according to their procurement procedures						

Civil works:

Short term interventions

Procurement of civil works for water supply systems in three towns estimated at UA 1.317 million in aggregate will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in one town estimated at UA 185,000 will be carried out under National Competitive Bidding (NCB) procedures.

Long term interventions

Procurement of civil works for water supply system in three towns estimated at UA 10.648 million in aggregate utilising a maximum of Four (4) contracts and civil works for water drainage system in

three towns estimated at UA 931,000 in aggregate will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in three towns estimated at UA 1,286 million in aggregate (each contract worth no more than UA 500 000) and civil works for land fill and skip site development in three towns estimated at UA 318,000 in aggregate will be carried out under National Competitive Bidding (NCB) procedures.

Goods:

Procurement of tractors, trailers and skips for an estimated amount of UA 594,000 and exhausters and ugotugs for an estimated amount of UA 501,000 will be carried out under International Competitive Bidding (ICB) procedures. Procurement of vehicles and motorcycles estimated at UA 161,000 will be carried out under National Competitive Bidding. The acquisition of furniture and equipment for the IA is estimated at UA 17,000 and will be contracted through shopping. Procurement of office supplies for the functioning of the IA will equally be done through shopping as the amount per contract will not exceed UA 50.000.

Consultancy services:

Procurement of Consulting services, for study, design, monitoring and supervision of the program estimated at UA 1.40 million will done through international short-listing using the Quality-and-Cost-based Selection (QCBS) method. Procurement of consulting services for hygiene and sanitation promotion estimated at UA 119,000 will be carried out through regional/national short listing using the Quality-and-Cost-based selection method. As the assignment emphasizes participation and local knowledge, the short list may comprise entirely NGOs. Procurement of other consultancy services needed for the execution of the program shall be in accordance with the Bank's Procurement Rules and Procedures for the use of Consultants.

Procurement by Régie de production et de distribution de l'eau et de l'électricité – Burundi

Burundi - Summary of Procurement Arrangement (in millions UA)						
Description	ICB	NCB	Short List	Other*	Non-Bank-Funded**	Total
A. WORKS						
Short term interventions						
Water supply	0.748					0.748
	(0.748)					(0.748)
Water elctromechanical	0.651					0.651
	(0.651)					(0.651)
Sanitation		0.206				0.206
		(0.206)				(0.206)
Long term interventions						0.000
Water supply system	7.958					7.958
	(7.958)					(7.958)
Sanitation		1.334				1.334
		(1.334)				(1.334)
Water drainage		0.124				0.124
		(0.124)				(0.124)
Land fill and skip site development		0.318				0.318
		(0.318)				(0.318)
B. GOODS						0.000
Tractors, trailers and skips	0.677					0.677
	(0.677)					(0.677)
Exhausters and ugotugs	0.501					0.501
	(0.501)					(0.501)
Vehicles and motorcycles		0.126				0.126
		(0.126)				(0.126)
Furniture and office equipment (PMU)				0.017		0.017
				(0.017)		(0.017)
C. SERVICES						0.000
Study, Design, Supervision			1.112			1.112
			(1.112)			(1.112)
Hygiene and sanitation promotion			0.119			0.119
			(0.119)			(0.119)
Other consultant services			0.034			0.034
			(0.034)			(0.034)
D. PMU						0.000
Operating expenses				0.462		0.462
				(0.462)		(0.462)
Land Acquisition					0.072	0.072
						0.000
Total Project	**10.535**	**2.107**	**1.265**	**0.479**	**0.072**	**14.457**
	(10.535)	(2.107)	(1.265)	(0.479)		(14.385)
ures in brackets are amounts financed by ADF						
* «Other» may be LIB, Shopping, Direct Contracting or Force Account						
** Non-Bank financed refers to acquisitions financed by other sources according to their procurement procedures						

Civil works:

Short term interventions

Procurement of civil works for water supply system in three towns estimated at UA 748,000 in aggregate and civil works for water electromechanical system in three towns estimated at UA 651,000 in aggregate will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation estimated at UA 206,000 will be carried out under National Competitive Bidding (NCB) procedures.

Long term interventions

Procurement of civil works for water supply system in three towns estimated at UA 7.958 million in aggregate utilising a maximum of three (3) contracts (one contract per town) will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in three towns estimated at UA 1.334 million in aggregate (three contracts, each contract worth no more than UA 500 000); civil works for land fill and skip site development in three towns estimated at UA 318,000 in aggregate and civil works for water drainage system in three towns estimated at UA 124,000 in aggregate will be carried out under National Competitive Bidding (NCB) procedures.

Goods:

Procurement of tractors, trailers and skips for an estimated amount of UA 677,000; and exhausters and ugotugs for an estimated amount of UA 501,000 will be carried out under International Competitive Bidding (ICB) procedures. Procurement of vehicles and motorcycles estimated at UA 126,000 will be carried out under National Competitive Bidding. The acquisition of furniture and equipment for the IA in an estimated amount of UA 17,000 will be contracted through shopping. Procurement of office supplies for the functioning of the IA will equally be done through shopping as the amount per contract will not exceed UA 50,000.

Consultancy services:

Procurement of consulting services, for study, design, monitoring and supervision of the program estimated at UA 1.112 million will be done through international short-listing using the Quality-and-Cost-based Selection method. Procurement of Consulting services for hygiene and sanitation promotion estimated at UA 119 000 will be carried out through regional/national short listing using the Quality-and-Cost-based selection method. As the assignment emphasizes participation and local knowledge, the short list may comprise entirely NGOs. Procurement of other consultancy services needed for the execution of the program shall be in accordance with the Bank’s Procurement Rules and Procedures for the use of Consultants.

Procurement by Lake Victoria south water services board - Kenya

Kenya - Summary of Procurement Arrangement (in millions UA)						
Description	ICB	NCB	Short List	Other*	Non-Bank-Funded**	Total
A. WORKS						
Short term interventions						
Water supply	1.376					1.38
	(1.092)					(1.09)
Sanitation		0.407				0.41
		(0.407)				(0.41)
Long term interventions						-
Water supply system	5.474					5.47
	(4.342)					(4.34)
Sanitation	1.044	0.533				1.58
	(1.044)	(0.533)				(1.58)
Water drainage				0.081		0.08
				(0.081)		(0.08)
Land fill and skip site development		0.365				0.37
		(0.365)				(0.37)
B. GOODS						-
Tractors, trailers and skips	0.601					0.60
	(0.601)					(0.60)
Exhausters and ugotugs	0.501					0.50
	(0.501)					(0.50)
Vehicles and motorcycles		0.161				0.16
		(0.161)				(0.16)
Furniture and office equipment (PMU)				0.02		0.02
				(0.02)		(0.02)
C. SERVICES						-
Study, Design, Supervision			0.93			0.93
			(0.93)			(0.93)
Hygiene and sanitation promotion			0.12			0.12
			(0.12)			(0.12)
Other consultant services			0.03			0.03
			(0.03)			(0.03)
D. PMU						-
Operating expenses				0.36		0.36
				(0.36)		(0.36)
Land Acquisition					0.03	0.03
						-
Total Project	**8.996**	**1.467**	**1.08**	**0.46**	**0.03**	**12.04**
	(7.580)	(1.467)	(1.08)	(0.46)		(10.59)
[] Figures in brackets are amounts financed by ADF						
* «Other» may be LIB, Shopping, Direct Contracting or Force Account						
** Non-Bank financed refers to acquisitions financed by other sources according to their procurement procedures						

Civil works:

Short term interventions

Procurement of civil works for water supply system estimated at UA 1,376 million in aggregate will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation estimated at UA 407,000 in aggregate utilising a maximum of three (3) contracts (one contract per town) will be carried out under National Competitive Bidding (NCB) procedures.

Long term interventions

Procurement of civil works for water supply system in two towns estimated at UA 5.474 million in aggregate will be carried out under International Competitive Bidding (ICB) procedures in accordance with Bank's Rules and Procedures for Procurement of Goods and Works. Procurement of civil works for rehabilitation of waste water and sewerage system estimated at UA 1.044 million will be carried out through ICB procedures. Public/Institutional toilets in three towns estimated at UA 533,000 in aggregate and civil works for land fill and skip site development in three towns estimated at UA 365,000 in aggregate will be carried out under National Competitive Bidding (NCB) procedures. Procurement of civil works for water drainage system in three towns estimated at UA 81,000 in aggregate will be carried out under Shopping procedures, each contract worth no more than UA 50,000 maximum.

Goods:

Procurement of tractors, trailers and skips for an estimated amount of UA 601,000 and exhausters and ugotugs estimated at UA 501,000 will be carried out under International Competitive Bidding (ICB) procedures. Procurement of vehicles and motorcycles estimated at UA 126,000 will be carried out under National Competitive Bidding. The acquisition of furniture and equipment for the IA in an estimated amount of UA 17,000 will be done through shopping. Procurement of office supplies for the functioning of the IA will equally be done through shopping as the amount per contract will not exceed UA 50,000.

Consultancy services:

Procurement of Consulting services for study, design, monitoring and supervision of the program estimated at UA 928,000 will be done through international short-listing using the Quality-and-Cost-based selection method. Procurement of Consulting services for hygiene and sanitation promotion for an estimated amount of UA 119,000 will be carried out through regional/national short listing using the Quality-and-Cost-based selection method. As the assignment emphasizes participation and local knowledge, the short list may comprise entirely NGOs. Procurement of other consultancy services needed for the execution of the program shall be in accordance with the Rules and Procedures for the use of Consultants.

Procurement by Mwanza water and sewerage authority – Tanzania

Tanzania - Summary of Procurement Arrangement (in millions UA)						
Description	ICB	NCB	Short List	Other*	Non-Bank-Funded**	Total
A. WORKS						
Short term interventions						
Water supply	1.023					1.023
	(0.813)					(0.813)
Sanitation		0.660				0.660
		(0.660)				(0.660)
Long term interventions						0.000
Borehole drilling		0.139				0.139
		(0.110)				(0.110)
Water supply system	13.542					13.542
	(10.759)					(10.759)
Sanitation		1.567				1.567
		(1.567)				(1.567)
Water drainage				0.048		0.048
				(0.048)		(0.048)
Land fill and skip site development		0.397				0.397
		(0.397)				(0.397)
B. GOODS						0.000
Tractors, trailers and skips	0.637					0.637
	(0.637)					(0.637)
Exhausters and ugotugs	0.501					0.501
	(0.501)					(0.501)
Vehicles and motorcycles		0.161				0.161
		(0.161)				(0.161)
Furniture and office equipment (PMU)				0.017		0.017
				(0.017)		(0.017)
C. SERVICES						0.000
Study, Design, Supervision			1.640			1.640
			(1.640)			(1.640)
Hygiene and sanitation promotion			0.119			0.119
			(0.119)			(0.119)
Other consultant services			0.034			0.034
			(0.034)			(0.034)
D. PMU						0.000
Operating expenses				0.364		0.364
				(0.364)		(0.364)
Land acquision					0.052	0.052
						0.000
Total Project	**15.703**	**2.924**	**1.793**	**0.429**	**0.052**	**20.901**
	(12.709)	(2.896)	(1.793)	(0.412)		(17.810)
[] Figures in brackets are amounts financed by ADF						
* «Other» may be LIB, Shopping, Direct Contracting or Force Account						
** Non-Bank financed refers to acquisitions financed by other sources according to their procurement procedures						

Civil works:

Short term interventions

Procurement of civil works for water supply system in three towns estimated at UA 1,023 million in aggregate will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in three towns estimated at UA 660,000 will be carried out under National Competitive Bidding (NCB) procedures through three contracts.

Long term interventions

Procurement of civil works for water supply system in three towns estimated at UA 13.542 million in aggregate utilising a maximum of four (4) contracts will be carried out under International Competitive Bidding (ICB) procedures. Procurement of civil works for hygiene and sanitation in three towns estimated at UA 1,567 million in aggregate; civil works for borehole drilling in three towns estimated at UA 139,000 in aggregate and civil works for land fill and skip site development in three towns estimated at UA 397,000 in aggregate will be carried out under National Competitive Bidding (NCB) procedures. Procurement of civil works for water drainage system in three towns estimated at UA 48,000 in aggregate will be carried out under shopping procedures.

Goods:

Procurement of tractors, trailers and skips for an estimated amount of UA 637,000, and exhausters and ugotugs for an estimated amount of UA 501,000 will be carried out under International Competitive Bidding (ICB) procedures. Procurement of vehicles and motorcycles estimated at UA 161,000 will be carried out under National Competitive Bidding. The acquisition of furniture and equipment for the IA for an estimated amount of UA 17,000 will be contracted through shopping. Procurement of office supplies for the functioning of the IA will equally be done through shopping as the amount per contract will not exceed UA 50,000.

Consultancy services:

Procurement of consulting services, for study, design, monitoring and supervision of the program estimated at UA 1,640 million will be done through international short-listing using the Quality-and-Cost-based Selection method. Procurement of consulting services for hygiene and sanitation promotion for an estimated amount of UA 119,000 will be carried out through regional/national short listing using the Quality-and-Cost-based selection method. As the assignment emphasizes participation and local knowledge, the short list may comprise entirely NGOs. Procurement of other consultancy services needed for the execution of the program shall be in accordance with the Bank's Procurement Rules and Procedures for the use of Consultants.

Procurement by Lake Victoria Basin Commission (General Coordination)

LVBC - Summary of Procurement Arrangement (in millions UA)						
Description	ICB	NCB	Short List	Other*	Non-Bank-Funded**	Total
A. GOODS						0.000
Vehicle				0.041		0.041
				(0.041)		(0.041)
Furniture and office equipment (PMU)				0.017		0.017
				(0.017)		(0.017)
B. SERVICES						0.000
Audit services			0.338			0.338
			(0.338)			(0.338)
Capacity building			0.252	4.002		4.254
			(0.252)	(4.002)		(4.254)
Other studies and consultant services			0.399			0.399
			(0.399)			(0.399)
C. PMU						0.000
Operating expenses				0.824		0.824
				(0.824)		(0.824)
Total Project	**0.000**	**0.000**	**0.990**	**4.884**	**0.000**	**5.873**
	0.000	0.000	(0.989)	(4.884)	0.000	(5.873)
[] Figures in brackets are amounts financed by ADF						
* «Other» may be LIB, Shopping, Direct Contracting or Force Account						
** Non-Bank financed refers to acquisitions financed by other sources according to their procurement procedures						

Goods:

Procurement of one vehicle estimated at UA 41,000 and furniture/equipment for the IA estimated at UA 17,000 will be carried out under shopping procedures.

Consultancy services:

The EAC will enter into a specific Memorandum of Understanding (MOU) acceptable to the Bank with UN-Habitat for the execution of the capacity building component under direct contracting based on their General framework MOU. The phase II is a natural continuation of the phase I that was delivered by UN Habitat, giving them an experience of exceptional worth for the assignment. The amount of the contract is estimated at UA 4.002 million. Other capacity building services will be on the basis of shortlist for a total amount of UA 252,000. Procurement of auditing services will be carried out for an estimated contract amount of UA 338,000 through short-listing using least-cost-selection method. Procurement of other studies and consultancy services needed for the execution of the program shall be in accordance with the Bank's Procurement Rules and Procedures for the use of Consultants.

General Procurement Notice

The text of a General Procurement Notice will be agreed with LVBC and it will be issued for publication in UN Development Business online and on the Bank's web site, upon approval by the Board of Directors of the Grant Proposal.

National Laws and Regulations

National procurement laws and regulations for each IA were reviewed. However, considering that this is one program, use of national procedures is not recommended in order to ensure consistency and uniformity in review procedures.

Review Procedures

The following documents concerning the International Competitive Bidding (ICB) and Consultancy Services, are subject to review and approval by the Bank before promulgation : ❍ General Procurement Notice, ❍ Specific Procurement Notices, ❍ Tender Documents or request for proposal from Consultants, ❍ Tender Evaluation reports or Reports on Evaluation of Consultant's Proposals, including recommendations for contracts Award, ❍ Draft contracts if these have been amended and differ from the drafts included in the tender documents, ❍ Reports on Evaluation of Consultants' Financial Proposals, including recommendations for contract award, minutes of negotiations and duly initialled contracts documents.

Post Review

For an effective implementation of the program, contracts awarded following the national competitive bidding (NCB) and Shopping procedures will be subject to post review by the Bank. However, the first two contracts under each IA shall be subject to prior review. Procurement documents, including solicitations of price quotations, evaluation sheets and contract awards will be kept by the Executing Agencies for periodic review by Bank supervision missions. The procurement post review audits to review the correctness of the procurement activities will be carried out during the first supervision mission after the procurement activities are completed. However, the Bank reserves the right to conduct its procurement audit at any time during the program implementation. This review will determine the need for modifications and improvements of the procurement arrangements. Information on procurement processing will be collected by the IAs quarterly and shall be included in detail in the program Quarterly Progress Report to be submitted to the Bank.

Executing Agencies

The procurement capacity of the five IAs has been assessed and found generally adequate. However, it is recommended that all the IAs develop an internal manuals and instructions, and improve the record keeping mechanism with a view to secure the procurement documents and make access to the same flexible.

Specifically, it is noted that the procurement staff in *Kenya*'s IA has limited exposure in the use of ICB procedures. It also noted that the quality of the bidding documents they produced exhibit some inconsistencies with the applicable Bank's rules and procedures. Considering these weaknesses, it is strongly recommended to designate/recruit a procurement specialist at the commencement of the program to strengthen the existing team. In *Uganda*, the IA has two qualified procurement officers with experience in handling the procurement cycle of similar programs. Training on Bank's procurement rules and procedures will help the current staff to support adequately the procurement activities of the program. In *Rwanda*, the retained IA is currently implementing a Bank's funded program in the area of water and sanitation. The IA has one experienced procurement specialist capable to handle the procurement activities of the new program. REGIDESO will be the IA of the program in *Burundi*. The agency has one procurement specialist and they are currently executing three programs funded respectively by AfDB, World Bank and GTZ. Considering the workload, it is

recommended to strengthen the existing team with one additional procurement specialist. The IA in *Tanzania*, Mwanza Water and Sewerage Authority, has been handling several procurement activities but has managed only one program under multilateral procurement procedures in the last five years. Further, the procurement staff of the IA does not have sufficient experience on Bank's procurement rules and procedures. It is strongly recommended to designate/recruit a competent procurement specialist to strengthen the existing team for a sound implementation of the program. Training on Bank's procurement rules and procedures is also required at the commencement of the program.

Procurement Plan

LVBC will submit to the Bank a consolidated procurement Plan before the negotiation of the Grant. The Bank shall review the procurement arrangements proposed by the Borrower in the Procurement Plan for its conformity with the Grant agreement and its Rules. The Procurement Plan shall cover an initial period of at least 18 months. The Borrower shall update the Procurement Plan on an annual basis or as needed always covering the next 18 months period of program implementation. Any revisions proposed to the procurement Plan shall be submitted to the Bank for its prior approval.

B9. Financial and Economic Analysis

ASSUMPTIONS USED IN THE ECONOMIC EVALUATION

Currency: The analysis has been done in United States of America Dollars (USD).

Program's Life Span: The program will be implemented over an estimated 4 years and its programed operational life span is 25 years.

Costs

Investment Costs: These are estimated costs of the infrastructure investment related to water supply, sanitation hardware, storm water drainage facilities, which include (a) initial capital cost, and (b) capital injections (10% of the initial investment) to cater for major replacement costs after 15 years normal operation. Thus in the year 2025 an estimated 10% of the total investment costs has been included to provide for rehabilitation or major maintenance works of the facilities. These costs are considered net of price contingencies. All the costs are net of import duties and local taxes. These costs are based on engineers' estimates, and detailed designs will be undertaken to provide more accurate cost estimates.

Operation and Maintenance Costs: These are the incremental costs of chemicals, energy, labour and other necessary operation and maintenance inputs. These are estimated at 5% of the capital investment costs per annum.

Benefits and Savings

Benefits and savings are based on parameters set in the WHO 'Evaluation of the Costs & Benefits of Water and Sanitation Improvements at the Global Level' study. These include the following:

Time savings due to reduced diarrhoea sickness: These are the estimated savings of time due to availability of water and sanitation facilities in convenient places. The per capita estimate

Value of (adult) productive gained due to less diarrhoea illness: This value estimates the value gained from availability of the productive members of the society from reduced illnesses arising from improved facilities.

Patient treatment and travel costs saved: This estimates the savings arising from reduced medical treatments arising from reduced infections from water borne illnesses;

Other Summarised Assumptions:

- The estimated total population of the target towns was estimated at 576,000 by 2010 with an average growth rate of 2.7%.
- The percentage population benefiting from the interventions is estimated at 0% in the 1st year since short term interventions beginning at the start of 2012, 10% in the 2nd, 15% in the 3rd and 75% at the end of program implementation.

LVWATSAN EIRR ASSESSMENT																			
							Regional Averages												
Year	Beneficiaries	Cumulative	Capital Investment	O&M	Total Cost	Convinience time saving value	Per capita annual time savings discounted to 70% of the population	Value of (adult) productive gained due to less diarrheal illness	per capita value of productive days gained of 0.19 US$	Per capita value of averted deaths on 40% of popn	Predicted future earnings from averted death due to improved WATSAN	Patient treatment and travel costs saved	Per capita patient treatment cost saved @US$ 0.16 @ 15% of popn	Per capita health treatment cost saved @ US$2.67	Health treatment costs saved	Healthy baby & School attendance (value) gained due to less diarrheal illness	school attendance gained due to less diarrhoeal illness @US$24.39 @ 50% of popn	Total Benefits	Net Benefits
2011	0	8,718	8,718	479	9,197	0	40.66	0	0.198	1.2	-	0	0.02	2.67	0	0	12	0	(9,197)
2012	59,137	21,330	12,612	1,173	13,785	842		12			70	1			158	721		1,876	(11,909)
2013	88,705	50,758	29,428	2,792	32,220	1,262		18			106	2			237	1,082		2,879	(29,341)
2014	443,525	84,390	33,632	4,641	38,273	6,312		88			529	11			1,184	5,409		17,852	(20,422)
2015	455,500	84,390		4,641	4,641	6,482		90			543	11			1,216	5,555		18,333	13,692
2016	467,798	84,390		4,641	4,641	6,657		92			557	11			1,249	5,705		18,828	14,187
2017	480,429	84,390		4,641	4,641	6,837		95			573	12			1,283	5,859		19,337	14,695
2018	493,400	84,390		4,641	4,641	7,022		97			588	12			1,317	6,017		19,859	15,218
2019	506,722	84,390		4,641	4,641	7,211		100			604	12			1,353	6,179		20,395	15,754
2020	520,404	84,390		4,641	4,641	7,406		103			620	12			1,389	6,346		20,946	16,304
2021	534,455	84,390		4,641	4,641	7,606		106			637	13			1,427	6,518		21,511	16,870
2022	548,885	84,390		4,641	4,641	7,811		108			654	13			1,466	6,694		22,092	17,451
2023	563,705	84,390		4,641	4,641	8,022		111			672	14			1,505	6,874		22,689	18,047
2024	578,925	84,390		4,641	4,641	8,239		114			690	14			1,546	7,060		23,301	18,660
2025	594,556	98,433	14,043	5,414	19,456	8,461		117			709	14			1,587	7,251		23,930	4,474
2026	610,609	98,433		5,414	5,414	8,690		121			728	15			1,630	7,446		24,577	19,163
2027	627,095	98,433		5,414	5,414	8,924		124			747	15			1,674	7,647		25,240	19,826
2028	644,027	98,433		5,414	5,414	9,165		127			767	15			1,720	7,854		25,757	20,343
2029	661,415	98,433		5,414	5,414	9,413		131			788	16			1,766	8,066		26,287	20,873
2030	679,274	98,433		5,414	5,414	9,667		134			809	16			1,814	8,284		26,832	21,418
2031	697,614	98,433		5,414	5,414	9,928		138			831	17			1,863	8,507		27,392	21,978
2032	716,450	98,433		5,414	5,414	10,196		142			854	17			1,913	8,737		27,966	22,552
2033	735,794	98,433		5,414	5,414	10,471		145			877	18			1,965	8,973		28,556	23,143
2034	755,660	98,433		5,414	5,414	10,754		149			901	18			2,018	9,215		29,162	23,749
2035	776,063	98,433		5,414	5,414	11,044		153			925	19			2,072	9,464		29,785	24,371
NPV @	10% Discount rate																		43,941
EIRR																			17.71%

Affordability Assessment

For the affordability analysis, the original assessment was prepared for each of the subcomponents on the basis of two main targets of full cost recovery and a profit margin of 3% by 2020. The results of that initial analysis indicated that affordability of the proposed schemes from the household perspective remains a key challenge. The analysis noted that households' ability to pay the projected tariffs could undermine the financial sustainability of individual programs if not adequately addressed. Full cost recovery, whilst a legitimate long term target, may not realistically be achieved due to the prevalence of poverty in the region. A further assessment was done based on coverage of O&M costs only and the results are compared in the table below:

The affordability assessments reflected in that table show that the Average Tariff Requirements and Affordability (as a proportion of projected household income) would be half those required under the target of full cost recovery. For example, on average, low income households in Burundi would spend between 16.0% and 20.5% of their incomes on the four basic water and sanitation needs, under the full cost recovery assumption, as compared to between 5.9% and 8.2% under the O&M cost coverage basis. The results under the O&M cost coverage brings the affordability closer to the following standard used by development agencies; as a proportion of household income, water and sanitation should consume 5% of HH incomes; and (ii) solid waste 1.5%, giving a total of 6.5%.

This assessment will therefore help in determining future tariff levels and structures, including, but not limited to, the options for lifeline tariffs, banding and differential charges by customer category, increasing block structures and application of fixed and consumption charges.

Average Tariffs and Affordability in 2020 Assessment for Low Income Households

Component	Unit	Uganda		Rwanda		Burundi		Kenya		Tanzania	
		Full Cost Recovery %	**O&M Cost Recovery %**	**Full Cost Recovery %**	**O&M Cost Recovery %**	**Full Cost Recovery %**	**O&M Cost Recovery %**	**Full Cost Recovery %**	**O&M Cost Recovery %**	**Full Cost Recovery %**	**O&M Cost Recovery %**
Water	% HH Inc.	3.4 to 7.7	1.4 to 3.0	4.0 to 5.8	2.0 to 3.2	5.7 to 11.6	2.6 to 3.5	1.2 to 3.1	0.4 to 1.6	2.4 to 3.6	0.9 to 1.2
Waste water	% HH Inc.	5.2	1.4	3.9	1.2	5.8	1.1				
Sanitation	% HH Inc.	6.5 to 7.2	2.9 to 3.5	4.4 to 5.8	2.1 to 2.7	3.3 to 6.8	1.6 to 3.3	1.8 to 3.8	1.2 to 1.6	2.5 to 5.4	0.8 to 2.2
Solid waste	% HH Inc.	1.4 to 2.9	1.3 to 1.8	1.3 to 1.8	0.9 to 1.0	1.2 to 2.4	0.6 to 1.4	0.4 to 1.4	0.2 to 0.6	0.7 to 1.1	0.4 to 0.7
Total		**13.3 to 16.7**	**6.2 to 7.8**	**11.6 to 15.4**	**5.7 to 7.4**	**16.0 to 20.5**	**5.9 to 8.2**	**3.3 to 8.4**	**1.7 to 3.9**	**5.6 to 9.3**	**2.3 to 3.9**

Key: HH Inc – Household incomes

B10. Strategic Environmental and Social Assessment

1. General Information

Program Title:	**Lake Victoria Water and Sanitation Program**
Project Number: P-Z1-EA0-004	**Country: East African Community**
Department: OWAS	**Division: OWAS2**

2. Objectives of the Strategic Environmental and Social Assessment

Strategic Environmental and social assessment (SESA) aims at bringing the proposed program into compliance with applicable national environmental and social legal requirements and the African Development Bank's environmental and social policies. The Program SESA will also outline the mitigating/enhancing, monitoring, consultative and institutional measures required to prevent, minimise, mitigate or compensate for adverse environmental and social impacts, and to enhance the program beneficial impacts including capacity building.

3. Context

3.1 Program objectives

The main objective of the program is to contribute to the reversal of Lake Victoria water pollution and improvement in sustainable water supply and sanitation infrastructure to 15 secondary towns in Lake Victoria Basin.

3.2 Regional dimension

Lake Victoria is the world's second largest fresh water body whose surface is shared by the three countries of Kenya, Uganda and Tanzania. It is estimated that roughly one third of the combined population of Kenya, Uganda and Tanzania derive their livelihood from the lake through subsistence fishing and agriculture. Although the above three countries share the surface of Lake Victoria, it is important to note that the lake catchment is shared by all the five partner states of the EAC, including Rwanda and Burundi.

Lake Victoria is regarded as the most important trans-boundary natural resource in Africa. In this regard, the LVWATSAN is a key programme promoting regional cooperation, partnership-building, institutional and capacity enhancement, and a sense of joint ownership of the resources of the lake basin.

Currently urbanisation is placing an enormous burden on the secondary towns around the lake and its associated catchment. The rapidly growing urban and peri-urban centres located in the lake's basin depend on its natural resources for their economic growth as well as a source of clean water for domestic use. On the other hand, the centres have contributed significantly to the increased environmental pollution and degradation of the lake. This is now becoming a critical issue as all countries strive to achieve the Millennium Development Goals (MDGs) for water and sanitation. The present situation presents a unique opportunity for the five partner states of the EAC to cooperate and share experiences towards extending access to safe water supplies and improved sanitation to the population in the lake basin.

3.3 Country background

The EAC countries cover an area of 1.8 million km2, its total population is estimated to be 126.6 million people (2009) and the region's economy represents an estimated GDP of US$ 73billion (2009). The salient features of the member countries and beneficiary towns are outlined in annex B2. The program includes the towns of Mayuge, Ntungamo and the cluster of Bukakata, Buwama and Kayabwe in Uganda; Nyagatare, Kayonza and Nyanza in Rwanda; Muyinga, Ngozi and Kayanza in Burundi; Kericho, Keroka and Isabenia in Kenya; and Geita, Sengerema and Nansio in Tanzania.

4. Program Beneficial and Adverse Impacts

4.1 Beneficial impacts

The most significant positive impact of the program is the provision of safe drinking water along with appropriate sanitation facilities to the 670,000 people currently living in the beneficiary towns. This is more so as the program is perceived to be a core part of the Human Development Index and also as a component of the MDGs. The program has positive economic benefits as demonstrated in annex B9. The proposed program will free women and girls of the burden of having to spend a lot of their time collecting and carrying water in the dry season often from sources distant from their houses. This reduction in burden allows women and girls time for other activities including furthering their education and participating in income generating activities.

Other positive benefits are outlined below as follows:

- The program will have significant strategic benefits in reducing the burden on health care services for the people who can then switch their restricted resources towards health prevention work.
- The introduction of a complementary health and hygiene awareness programme targeted at women and children and including components on malaria and bilharzia will considerably enhance the benefits of the program.
- Use of appropriate labour intensive methods for some of the construction programme (e.g. excavation for pipelines) will present employment opportunities to local people (including women) and generate direct income benefits to local households.
- Implementation of the program will reduce pollution levels in Lake Victoria which is the overall strategic objective of the LVBC.
- The program's proposed interventions will respond to the current environmental conditions which continue to have adverse impact on: (i) fishing; (ii) the lake as a major water resource; (iii) tourism; (iv) the regional bio-diversity balance; and (v) the regional natural environment which is a precious regional asset for all five partner states. Implementing the program will arrest the catchment degradation and mitigate against most of the environmental risks on Lake Victoria and the basin as a whole.
- The program will contribute to alleviation of poverty and improving the socio-economic and health status of highest concentrations of poor people in East Africa.

4.2 Adverse impacts

Identification of the program negative impacts were based on the assumption that for all the proposed interventions, the basic environmental triggers (identified during program preparation stage) will not be invoked. This means that no program intervention will require land acquisition

which would result in involuntary resettlement of the project affected peoples (PAPs). Similarly none of the proposed interventions will adversely impact on protected areas, threatened species, indigenous people and cultural heritage attributes of the program area. In effect these are the environmental preconditions set for the formulation of all the interventions of the program.

The main potential adverse impacts of the program are outlined below as follows:

- *Land acquisition* – This is likely to be the most significant adverse impact of the proposed program. It includes permanent land acquisition for construction of infrastructure and temporary access to land.
- *Increased incidences of diseases* - The increase of people involved the program activities is likely to increase the incidences of diseases in the program area. The above situation will be aggravated by the entry of commercial sex workers into the area following the commencement of program activities. Consequently, there will be potential risk of contracting sexually transmitted diseases (STDs) especially the Human Immuno-deficiency Virus / Acquired Immuno-Deficiency Syndrome (HIV/AIDS) among the program workers and local communities.
- *Visual intrusion* –This will mainly arise from the erection of service reservoir tanks on hills and with regard to abstraction points in Lake Victoria. In addition visual intrusion will occur where program activities are likely to create disfigured landscapes in the program area especially around the sites of the quarries and borrow pits and other sites where construction activities result in deposition of large spoils.
- *Increased accidents and occupational hazards* - Implementation of the program will definitely increase volume of human and motor traffic in the program sites. The increase in human and motor traffic will be aggravated by the transportation of construction materials, water pipes and other equipment required in constructing the program facilities. This is likely to result in a higher risk of accidents and occupational hazards occurring in the area of operation. Factors that may exacerbate this situation are inadequate appropriate working gear for program workers including the helmets, overalls, boots and gloves.
- *Disturbance in socio-economic activities* - Accessing economic and social public institutions; e.g. churches and market places might be blocked during the constructions of the physical infrastructure. Laying pipes, for instance, will pass through these institutions and might lead to temporary blocking of the areas. Population jobs and recreation activities and other aspects of wellbeing will be disturbed temporarily.
- *Increased soil erosion* - Increased soil erosion is likely to occur in the vicinity of program sites during the construction of the water intakes, water treatment works, waste treatment works, operations of borrow pits and quarries, installation of the water pipe reticulation and other related construction works.
- *Increased siltation of the aquatic habitats* - Some of the excavated sediments from the program site and the construction spoils emanating from excess excavated material and construction debris are likely to increase siltation of the nearby aquatic habitats associated with Lake Victoria and the influent rivers and streams.
- *Ponding* - The program activities may lead to creation of stagnant water bodies in quarries, borrow pits and depressions created during the construction works. The resultant stagnant water bodies are likely to be suitable habitats for the breeding of mosquitoes and snails that are disease vectors for malaria and bilharzias respectively;
- *Disturbance of floral and faunal communities* – The program activities are likely to destroy vegetation with subsequent loss of some trees, shrubs and grasses from the area of operation

albeit on a small scale. This is likely to cause loss of habitat and disturbance to faunal communities in the affected sites.

- *Increased noise levels* - Noise levels are likely to increase in the program area during the construction phase of the proposed program. High levels of noise are likely to prevail in the program sites due to the use of heavy machinery in construction activities and operations at the quarries, borrow pits and crushing plants.
- *Gaseous emissions* - Pollution through gaseous emissions in the program area will emanate from exhaust pipes for vehicles and machinery used in the construction works.
- *Dust pollution* – Program activities have the potential to generate high levels of dust in the program area especially where construction is taking place. In addition, activities taking place in the quarries, borrow pits and crushing plant sites have great potential to generate high quantities of dust thus creating a hostile environment and a health hazard to the workers and the affected local community.
- *Impacts on downstream users* - The program will affect downstream users who may include rural communities, farmers and commercial enterprises that abstract water from rivers downstream of the program's water supply intakes and the water users who abstract river water after receiving treated effluent from the installed sewage treatment facilities. The potential adverse impacts on the former group of water users will mainly due to adequacy of water especially during the dry season while the latter group will be concerned with pollution from the sewage effluent.
- *Impacts on water vendors* - Whilst most households will receive real tangible benefits from the operation of the improved infrastructure, there is one social group, the water vendors, who are likely to have their livelihoods seriously undermined following program implementation. The water vendors are the men (very rarely are women) who currently collect water and sell it on to individual users.
- *Disposal of sludge* - Both water treatment plants and wastewater treatment facilities will have major issues of how to deal with sludge from their processes. Impacts of sludge management and odour will arise from water and wastewater treatment works.

5. Enhancement and Mitigation Programme

5.1 Enhancement of beneficial impacts

There is need for institutional strengthening of the environmental and social assessment review and permitting process especially targeted at the IAs for each of the five countries. This will give IAs adequate capacity for managing the environmental and social assessment and permitting process and also to have appropriate land valuation expertise to oversee the land acquisition requirements of intervention implementation.

The program complementary awareness components for public health and hygiene and also for solid waste management particularly targeted at women and girls (in relation to health and sanitation issues) who will be widened to include measures for tackling malaria and bilharzia. An appropriate approach for the implementation of this component is to use the services of specialist NGOs who already have this expertise.

Formation of the MSFs will facilitate and enhance the involvement of the communities in the program. MSFs will be established prior to the design stage and are expected to raise other pertinent issues including technologies selected, ability and willingness to pay for service improvements and the way that tariffs are to be set, cost recovery and how to achieve increase in the service coverage among other issues.

During construction stage, preference for employment opportunities for appropriate skills should be given to local community as far as it is possible. This should include paid employment to the water vendors who may lose their livelihood following the program implementation and also women.

5.2 Mitigation of negative impacts

It should be emphasized that the use of the key environmental and social triggers (as described above) as constraints for the formulation of the proposed interventions will ensure that there will be no significant adverse impacts that would require special studies to be commissioned and cause a delay in sourcing funding for implementation of the initiative.

Many of the potential adverse impacts of the program interventions can be minimised by avoidance measures taken at the final design stage. At this stage the environmental and social specialists in conjunction with the design engineers should draw up a checklist of measures to consider in alleviating negative impacts. Some key issues are outlined below as follows:

- Care in the location of tanks on hill tops, both in terms of minimising visual impact and checking if there are specific local issues with using such locations;
- As far as possible, try to use public road reserves for pipeline servitudes;
- Ensure that the location of proposed infrastructure conforms with the existing and proposed land use plans and zoning;
- Minimise visual impacts by careful siting, landscaping and planting of vegetation;
- Locate treatment works sites in relation to the prevailing wind direction and the location of residential areas;
- Sites will need to be fixed that have adequate heavy plant access but are away from residential areas;
- Standardise on the selection and sizing of mechanical and electrical components;
- Use a modular approach for design to simplify operation and maintenance;
- Standardise hand pump selection and consider the ergonomics of them for use by women and girls;
- Standardise on a wellhead design that minimises the risk of pollution;
- Explore opportunities for local people, especially water vendors.
- Take measures and provide temporary relocation in case of short term disturbance of the livelihood of people.
- Continue to raise awareness of the sexual transmitted disease and water related diseases.
- Public information and radio program on the program objectives, interventions and the expected impact.
- Develop guidelines to demonstrate the degree to which the interventions will reduce river flows and groundwater levels at the most stressed times of the year and lay the basis for drawing up a set of rules that guarantee a minimum base flow (or groundwater level) during the peak of the dry season.
- Develop and formalise procedures for gaining access to the program sites, especially if physical work such as site investigation will need to be carried out.
- The program should ensure fair, equitable and timely provision of compensation for land in accordance to national land acquisition policies, procedures and guidelines of each of the five partner countries
- During the construction stage, the contractors will implement EMPs for the works that they are contracted to carry out. The Contractor will undertake to implement the following general environmental and social obligations:

- ✓ Comply with any specific EMP for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy and plan to fully take into account relevant provisions of that EMP;
- ✓ Prepare method statements indicating the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed;
- ✓ Adhere to the proposed activity implementation schedule and the monitoring plan/strategy to ensure effective feedback of monitoring information to program management so that impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions;
- ✓ Implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance requirements specified in EMP; and
- ✓ Contact the proper agency for preparation of Resettlement Action Plan (RAP) based on the RPF where land is acquired, assets lost, or significant impact on livelihood occurs.
- ✓ Provide temporary housing and services for skilled workers;
- ✓ Implement HIV/AIDS policy;
- ✓ Conduct health screening and management;
- ✓ Provide health and safety, statutory requirements, obligations and sound practice;
- ✓ Observe the recommended working days and hours;
- ✓ Reduce noise levels including the need keep within stated limits and the provision of personal protective equipment;
- ✓ Implement waste management policy and plans;
- ✓ Handling and maintenance of plant and materials;
- ✓ Minimisation of disruption to existing activities;
- ✓ Securing construction sites to deter public access (especially in relation to children);
- ✓ Implement traffic management, especially when constructing pipelines in existing road reserves;
- ✓ Implement dust management, including the sprinkling of water on access tracks;
- ✓ Draw up an Emergency Response Plan (ERP);
- ✓ Provide adequate accident and emergency facilities;
- ✓ Secure sources of materials following the legal requirements for quarrying and mining, including, rock, aggregate, sand and cement;
- ✓ Follow the requirements for the safe transport, storage and handling of explosives, including establishment of warning systems;
- ✓ Address issues of location, operation and management of crushing plants and batching plants and follow legal requirements to minimise the disturbance to the environment;
- ✓ Have a procedure in place for the managing of chance findings of cultural heritage, including the need to immediately cease work and call in the appropriate authorities;
- ✓ In collaboration with the Resident (Supervising) Engineer source appropriate supplies of water for pipeline testing;
- ✓ Reinstate landscape and plant appropriate species of trees, shrubs and grasses; and
- ✓ Set up an environmental monitoring and feedback mechanism for sound environmental management of the works.

- During the operation stage, the program adverse impacts can be mitigated as follows:
  - ✓ Minimise odour from wastewater treatment plants by proper management of sludge and use of a sensitive design. Appropriate emergency response procedures need to be drawn up and put in place to deal with unexpected incidents, including accidents with the use of treatment chemicals.

- ✓ Implement a disease awareness and management programme as part of the program's public health and hygiene awareness component that covers malaria and bilharzias and includes detection facilities and treatment medication in addition to the provision of preventative measures, such as the use of treated mosquito nets.
- ✓ Set appropriate unified water quality standards across the EAC, and particularly potable water for human consumption, water for acceptance into a wastewater treatment plant and water for discharge into a public watercourse (specifically from a wastewater treatment plant).
- ✓ Encourage development of MSF which will provide direct link program proponent/ manager and the consumers.
- ✓ Set up and manage a formalised monitoring and feedback system for the LVWATSAN initiative in order to enhance significant learning process, particularly for integrated environmental management of the program interventions.
- ✓ Develop and implement integrated catchment management programmes and address the issues of pollution control around water points, livestock watering and pollution issues of vehicle washing and clothes laundering (possibly using phosphate loaded detergent).

6. Monitoring Programme

The monitoring activities of the program will be undertaken by the Implementing Agents as well as the town program team and MSFs. The national environmental agencies may also undertake surveillance of the implementation of the ESMP. The Bank will also regularly visit the program area to review and ascertain that the clauses and conditions stipulated in the section 5 are adhered to. Mitigation of all the impacts identified has been integrated into the program design and will be included in the design, supervision and construction contracts. Monitoring activities are based on indicators that measure changes over time of key environmental and social components and will include the following:

- ✓ Check the extent to which the mitigation and benefit enhancement measures have been adopted and their effectiveness in practice;
- ✓ Provide a mechanism whereby unforeseen or unexpected impacts during the ESIA study can now be identified and provide measures to mitigate the unexpected negative impacts;
- ✓ Prepare periodical reports and liaise relevant bodies and authorities through an established forum in order to discuss and resolve issues arising from the monitoring process; and
- ✓ Prepare the annual Environmental and Social Audit (ESA) report to the relevant environmental watchdog institutions (including NEMA in Kenya and Uganda, NEMC in Tanzania, REMA in Rwanda and Water Department in Burundi) and implement any subsequent recommendations arising from the comments on the ESA report.
- ✓ Monitoring of the environments of the program area and surroundings including Lake Victoria with a focus on the following key environmental variables: (Changes in water quality; Increase in pollution; soil erosion; Noise levels; Level of awareness; Changes in land acquisition; Incidences diseases including water-borne diseases, HIV/AIDS, malaria and bilharzia; Safety measures; climatic variables; visual intrusion; changes in human population and social dimensions; changes in employment characteristics; siltation of riverine and lacustrine systems; changes in waste management; increase in accidents; changes in biodiversity; and any other relevant changes in ecological, socio-economic and environmental attributes).

A general program level ESMP matrix, checklist for environmental screening, general framework for land acquisition/compensation and general framework for faecal sludge treatment have been designed and attached as appendix B10.1 to B10.4.

7. Institutional Arrangement and Capacity Building Requirements

Institutional strengthening for all the four components of the program has already been identified and forms an intrinsic part of the program. The capacity building component of the program includes support in town planning, urban catchment management, hygiene and sanitation and other technical and institutional capacity building activities. All these activities support the enhancement and implementation of the program environmental and social management plan.

The complementary awareness components for public health and hygiene focusing on hygiene and sanitation issues will be widened to include awareness of waterborne, water related and insect borne diseases, in particular the issues of malaria and bilharzias, and also HIV-AIDS.

The IAs will oversee the implementation of all mitigation measures, especially those integrated in the program design. The town councils and local administrations will also make all necessary arrangements at the town level in the identification of sites and their acquisition.

At this stage, a broader view of ESMP for the proposed program has been developed as presented in appendix B10.1. Detailed ESMP for each intervention will be formulated during the detail design for each sub-project.

Main institutions and officers that will be involved in the implementation of proposed ESMP include the LVBC, IAs – project teams, Town Project Teams (TPT), Contractor, Resident Engineer, Environmental Regulating Institutions, Environmental Officers/ Consultants and MSFs.

8. Public Consultations and Disclosure Requirements

In order to fully involve the beneficiary communities and other interested stakeholders in the formulation and development of the proposed program, substantial consultations were conducted with a wide range of stakeholders in the five partner states of the EAC. Consultations were carried out during the early stages of program preparations that involved socio-economic and needs assessment and environmental assessment consultations processes. Further consultations were carried out by the Bank mission during the preparation and appraisal mission with a wide range of stakeholders of the program areas and officials of the partner states and the EAC, including development partners.

As part of the detailed design process of the sub-projects, environmental and social impacts assessments (ESIA) will be carried out for each of the proposed interventions in 15 towns within the five countries of the EAC. This activity will be carried out along with the preparation of the detail designs of the schemes. The sub-projects studies and their ESIA including ESMPs and land acquisition and compensation plans will be disclosed in line with national requirements of each partner state and each IA shall seek approval by the competent national environmental authority.

Although no involuntary resettlement is foreseen for the program interventions, consultations on the acquisition of land and compensation for the affected property will be held with the project affected people (PAPs), the local community, local administration, the town's program team and other stakeholders of the affected area in order to ensure minimal disturbance and transparency in transactions between the project implementers and affected persons. During the consultation, the affected people will be briefed on the procedures of land acquisition, compensation processes involved and modalities of settling grievances.

9. Estimated Cost

Environmental costs including land acquisition (perhaps the most significant adverse impact) for the ADF supported component of the program have been estimated at US$ 449,790. The rest of environmental costs have been mainstreamed in the program costs.

10. Implementation Schedule and Reporting

Implementation and reporting structure of the ESMP will be carried out in conjunction with the program activities and will follow the overall program schedule. Each partner state shall be responsible for the implementation of ESMP activities within their respective towns. This will be executed by the following implementing agencies:

- The Directorate for Water Development (DWD), a department within the Ministry of Water and Environment for Uganda;
- Régie de Production et de Distribution de l'Eau et de l'Electricité (REGIDESO) for Burundi;
- Water Supply & Sanitation Sector Coordination Unit (WSSSCU) under the Ministry of Infrastructure for Rwanda;
- Lake Victoria South Water Services Board for Kenya (LVSWB); and
- Mwanza Urban Water and Sewerage Authority (MWAUWASA) for Tanzania.

In each of the program towns, environmental and social experts will be members of the IAs town project teams (TPTs) that will be responsible for the implementation and management of the program activities including execution of the ESMPs. This will be carried out in collaboration with other stakeholders including the contractors, engineers, NGOs and MSF. In addition to the five IAs listed above, the LVBC will be responsible for regional program oversight. Achievements, issues and problems will be reported in the quarterly program progress reports.

Appendix B10.1: Matrix of General Environmental Management Plan for the Program

Item	Environmental Impact	Enhancement/Mitigation Measures	Responsibility for Implementation	Site of Implementation	Implementation Schedule	Responsibility for Monitoring	Monitoring Indicators
Enhancement of Program Positive Impacts							
1	Provision of safe drinking water	Set tariffs that will allow poorer members of the society to access the new water services	LVBC/IAs/TPT	15 participating towns	Following the completion of the program	AfDB/LVBC/IAs	Improved urban water supply Improved reliability of urban water supply Improved water quality
2	Increased health and hygiene conditions	Provide complimentary awareness for public health and hygiene targeted at the women and girls' needs and widen awareness to include measures for tackling malaria and bilharzia	IA/TPT/NGOs/MSF	15 participating towns	Throughout the program cycle	IAs Environmental Expert	Increase in population practising good health/hygiene /sanitation Reduction in water-borne diseases Reduction in under 5 mortality rate
3	Increase in employment opportunities	Give preference for employment opportunities to local communities including women Provide paid employment to water vendors who are likely lose their livelihood following WATSAN improvements	Contractor	Program sites associated with the 15 participating towns	During program construction stage	IA/TPT	Improved purchasing power Improved standards of living
4	Reduction of pollution levels in Lake Victoria	Develop and implement an integrated catchment management programme (ICMP)	LVBC/IA	In the catchment of Lake Victoria	Development of ICMP during final feasibility study and subsequent implementation During the life of the program	LVBC/IA Environmental Expert	Improved Lake water quality Reduction in water-borne diseases around the Lake
Mitigation of Program Negative Impacts							

1	Land acquisition	Provide a fair and prompt compensation to the affected people.	IA/TPT	Program sites associated with the 15 participating towns	Before commencing of construction activities During construction process	IA/TPT Land Valuation Board (LVB), Environmental Expert	Number of people compensated Amount of money paid in compensation
2	Loss/damage to property	Determine the extent of property lost or destroyed and provide fair and prompt compensation to the effected people	IA/TPT ContractoR	Program sites associated with the 15 participating towns	Before commencing of construction activities and during construction	IA/TPT Land Valuation Board (LVB), Environmental Expert	Number of people compensated Amount of money paid in compensation
3	Increased incidences of diseases (such as HIV/AIDS, Malaria and Bilharzia)	Raise awareness and support mechanisms to prevent and control spread of HIV/AIDS among the program workers and local communities. Implement disease awareness and and management programme as part of the WATSAN public health and hygiene awareness component for Malaria and Bilharzia	LVBC/IA/TPT Ministry of Health NGOs/MSF	15 participating towns	Before the commencement of program activities and throughout the program cycle	IA/TPT MOF, National AIDS Council Environmental Expert	Incidences of STDs among workers and local community Number of cases treated Number of condoms dispensed to workers and local community Number of meetings held to raise awareness on HIV/AIDS, Malaria and Bilharzia.
4	Increase in accidents and occupational hazards	Design and implement safety measures and emergency plans to contain accidents risks Provide workers with protective clothing (nose and mouth masks, ear muffs, overalls, industrial boots and gloves) and helmets as applicable	Contractor	Sites where program activities will be taking place.	During construction and operation stages	IA/TPT Resident Engineer, Environmental Expert	Number complaints from workers and local community Number of traffic accidents Number and type of protective clothing and gear provided to workers
5	Pollution from labour camps	Use suitable human waste disposal systems including a combination of septic tanks, solar	Contractor	Resident Engineer/ Contractor camps and labour camp units	During program construction stage	Resident Engineer, Environmental Expert	Number of WC, solar and pit latrines constructed

		and pit latrines as found appropriate Segregate solid wastes in the Resident Engineer, Contractor and labour camp units and arrange for subsequent disposal through either efficient incineration or disposal in a sanitary landfill.					Number of solid waste receptacles installed Number and type of incinerators installed Landfill facility identified, developed and utilized
6	Impacts on the downstream users	Carry out hydrology analysis to indicate maximum water abstractions during the height of dry season	LVBC/IA/TPT Hydrology Consultant Environmental Expert	River catchments where program water intakes will be located	During the Feasibility Studies	TPT Environmental Expert	Amount of water flowing downstream at the height of dry season Complaints against upstream abstractions
7	Loss of livelihood for water vendors	Provide paid employment to water vendors who will lose their livelihood following WATSAN improvements	Contractor TPT	15 participating towns	During program operation stage	IA/TPT	Improved purchasing power Improved standards of living
8	Visual intrusion	Reduce visual impacts through change in design. Paint installed facilities an appropriate colour or screen them with planted vegetation Rehabilitate all degraded areas through landscaping and subsequent planting of suitable grass, shrubs and trees to blend with the environment.	Resident Engineer Contractor	At the sites that have been affected by program activities.	During the program design and construction stages	Resident Engineer Environmental Expert	Copies of sensitive Engineering designs Facilities painted appropriate colours Number of sites landscaped and terraced Number and type of trees, shrubs and amount of grass planted.

9	Increase in noise levels	Selection of appropriate machinery and regular servicing of machinery and vehicles. Use of protective hearing devices such as ear plugs and ear muffs among workers when noise levels exceed 80 dBA for 8 hours	Contractor	iIn areas where program activities are taking place.	During the construction and operation stages.	Resident Engineer Environmental Expert	Type of machinery and vehicles purchased for the program Complaints from local residents Noise levels recorded Number and type of protective hearing devices dispensed to workers
10	Increased ponding conditions	Make changes at the design stage to address overall surface water drainage system in affected program sites Improve impeded drainage through landscaping and filling in the created depressions.	Resident Engineer Contractor	Sites where program works have created depressions especially in quarries and borrow pits	During construction stage.	Resident Engineer, Environmental Expert	Copies of sensitive designs Number of drains and depressions rehabilitated Malaria incidences in the program sites
11	Increased soil erosion and siltation	Where applicable install silt traps to reduce sediment load directly entering riverine and lacustrine environments. Carry out terracing and landscaping of the disturbed sites as appropriate Plant sediment binding grasses, shrubs and trees on the exposed slopes and other surfaces as found appropriate.	Contractor	In disturbed sites where there are cuts and fills especially around quarries borrow pits and exposed slopes.	During construction stage	Environmental Expert Resident Engineer.	Number of silt traps installed Number of sites landscaped Levels of turbidity recorded in the receiving waters
12	increase in dust levels	Limit levels of dust through good practice such as watering of access routes, construction sites, and other disturbed sites Cover lorries transporting construction materials. Provide workers with appropriate dust protective gear including masks and overalls.	Contractor	in the vicinity of construction sites, at the quarries and borrow pit sites, crushing plants and other sites where program works are taking place.	During construction stage	Resident Engineer Environmental Expert	Complaints from local residents Number of shower trucks used Number and type of dust protective gear supplied to the labour force.

13	Increase in gaseous emissions	Reduce gaseous emissions by selection of appropriate machinery and regular servicing of vehicles. Provide workers with appropriate protective gear including masks to cut down on gaseous emissions inhaled.	Contractor	at the sites where program works are taking place.	During construction and operation stages.	Resident Engineer Environmental Expert	Complaints from program workers and local Levels of nitrogen and sulphur oxides produced Carbon monoxide produced Occurrence of smog
14	Loss of habitat and disturbance to flora and fauna	Discourage any wanton destruction of vegetation and habitats beyond the designed program works. Restore lost biodiversity on the disturbed area through planting of appropriate grasses, shrubs and trees.	Contractor	In the vicinity of program sites where biodiversity has been disturbed or destroyed.	During construction and operation stages	Environmental Expert.	Number of key trees left intact No. of tree nurseries established and seedlings planted in the disturbed areas No of disturbed sites rehabilitated.
5	Disposal of sludge and increase in odour	Minimise odour with an environmentally sensitive design select an appropriate water treatment process and devise appropriate sludge management strategy	Resident Engineer Contractor	At the sites of the water and faecal sludge treatment works	During the construction and operation stages	Resident Engineer Environmental Expert	Copies of sensitive designs Complaints from local residents against the odour produced from water and sewage treatment facilities

Appendix B10.2: Environmental Screening Checklist for sub-project schemes

Subproject			
Screening Questions	**Yes**	**No**	**Remarks**
Project Siting **Is the project area:**			
▪ Densely populated?			
▪ Heavy with development activities?			
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site			
• Protected area (national park, national reserve, wildlife sanctuary etc.)			
• Wetland			
• Mangrove			
• Estuary			
• Buffer zone of protected area			
• Special area for protecting biodiversity			
• Bay			
Water Supply Scheme			
Potential environmental impacts Will the project cause:			
▪ Pollution of raw water supply from upstream wastewater discharge from communities, industries, agriculture, and soil erosion runoff?			
▪ Impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ Hazard of land subsidence caused by excessive ground water pumping?			
▪ Social conflicts arising from displacement of communities?			
▪ Conflicts in abstraction of raw water for water supply with other beneficial water uses for surface and ground waters?			
▪ Unsatisfactory raw water supply (e.g. Excessive pathogens or mineral constituents)?			
▪ Delivery of unsafe water to distribution system?			
▪ Inadequate protection of intake works or wells, leading to pollution of water supply?			
▪ Over pumping of ground water, leading to salinization?			
▪ Excessive algal growth in storage reservoir?			
▪ Increase in production of sewage beyond capabilities of community facilities?			
▪ Inadequate disposal of sludge from water treatment plants?			
▪ Inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances and protect facilities?			
▪ Impairments associated with transmission lines and access roads?			
▪ Health hazards arising from inadequate design of facilities for receiving, storing, and handling of chlorine and other hazardous chemicals.			
▪ Health and safety hazards to workers from handling and management of chlorine used for disinfection, other contaminants, and biological and physical hazards during project construction and operation?			
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Noise and dust from construction activities?			
▪ Increased road traffic due to interference of construction activities?			
▪ Continuing soil erosion/silt runoff from construction operations?			
▪ Delivery of unsafe water due to poor O&M treatment processes (especially mud accumulations in filters) and inadequate chlorination due to lack of adequate monitoring of chlorine residuals in distribution systems?			
▪ Delivery of water to distribution system, which is corrosive due to inadequate attention to feeding of corrective chemicals?			
▪ Accidental leakage of chlorine gas?			
▪ Excessive abstraction of water affecting downstream water users?			
▪ Competing uses of water?			
▪ Increased sewage flow due to increased water supply			

Subproject			
Screening Questions	**Yes**	**No**	**Remarks**
▪ Increased volume of sullage (wastewater from cooking and washing) and sludge from wastewater treatment plant			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts of workers from other regions or countries are hired?			
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
Sludge Treatment			
POTENTIAL ENVIRONMENTAL IMPACTS WILL THE PROJECT CAUSE:			
▪ Impairment of historical/cultural monuments/areas and loss/damage to these sites?			
▪ Nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?			
▪ **Impacts associated with transport of sludge to the disposal site or treatment facility**			
▪ Dislocation or involuntary resettlement of people?			
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?			
▪ Overflows and flooding of neighboring properties with raw sewage?			
▪ Noise and vibration due to blasting and other civil works?			
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?			
▪ Inadequate buffer zone around treatment plants to alleviate noise and other possible nuisances, and protect facilities?			
▪ Temporary flooding due to land excavation during the rainy season?			
▪ Noise and dust from construction activities?			
▪ Traffic disturbances due to construction material transport and wastes?			
▪ Temporary silt runoff due to construction?			
▪ Hazards to public health due to overflow flooding, and groundwater pollution due to failure of treatment plant?			
▪ Contamination of surface and ground waters due to sludge disposal on land?			
▪ Health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?			
▪ Large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?			
▪ Social conflicts between construction workers from other areas and community workers?			
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			
Solid Waste Management			
Potential environmental impacts Will the project cause:			
▪ **Impacts associated with transport of wastes to the disposal site or treatment facility?**			
▪ **Impairment of historical/cultural monuments/areas and loss/damage to these sites?**			
▪ Degradation of aesthetic and property value loss?			
▪ Nuisance to neighboring areas due to foul odor and influx of insects, rodents, etc.?			
▪ Dislocation or involuntary resettlement of people?			

Subproject			
Screening Questions	**Yes**	**No**	**Remarks**
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?			
▪ Risks and vulnerabilities related occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?			
▪ Public health hazards from odor, smoke from fire, and diseases transmitted by flies, insects, birds and rats?			
▪ Deterioration of water quality as a result of contamination of receiving waters by leacheate from land disposal system?			
▪ Contamination of ground and/or surface water by leach ate from land disposal system?			
▪ Land use conflicts?			
▪ Pollution of surface and ground water from leachate from sanitary landfill sites or methane gas produced from decomposition of solid wastes in the absence of air, which could enter the aquifer or escape through soil fissures at places far from the landfill site?			
▪ Inadequate buffer zone around landfill site to alleviate nuisances?			
▪ Road blocking and/or increased traffic during construction of facilities?			
▪ Noise and dust from construction activities?			
▪ Temporary silt runoff due to construction?			
▪ Hazards to public health due to inadequate management of landfill site caused by inadequate institutional and financial capabilities for the management of the landfill operation?			
▪ Emission of potentially toxic volatile organics from land disposal site?			
▪ Surface and ground water pollution from leachate and methane gas migration?			
▪ Loss of deep-rooted vegetation (e.g. Trees) due to landfill gas?			
▪ Explosion of toxic response from accumulated landfill gas in buildings?			
▪ Contamination of air quality from incineration?			
▪ Public health hazards from odour, smoke from fire, and diseases transmitted by flies, rodents, insects and birds, etc.?			
▪ Health and safety hazards to workers from toxic gases and hazardous materials in the site?			
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?			
▪ Social conflicts if workers from other regions or countries are hired?			
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?			
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components (e.g., landfill or incinerator) of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?			

Appendix B10.3: General Framework for Management of Land Acquisition / Compensation

Land acquisition and subsequent compensation associated with the implementation of the proposed project, will be carried out in accordance to guidelines contained in the African Development Bank (AfDB) Involuntary Resettlement Policy (2003) and the relevant legislation of the partner states of the East African Community (EAC). Land for subproject will be secured from municipal reserve or through voluntary means. Involuntary resettlement will be avoided by exploring all viable alternative project designs. The following principles will govern preparation and implementation of land acquisition and compensation in the program beneficiary towns.

1. **Consultation and Participation**: Initial consultations on the acquisition of land and compensation for the affected property will be held with the project affected people (PAPs), the community, local administration, the town's team and other stakeholders of the affected area in order to ensure minimal disturbance and transparency in transactions between the project implementers and displaced persons. During the consultation, the affected people will be briefed on the procedures of land acquisition and compensation processes involved.

2. **Categorization and Eligibility of Affected Persons:** Following the consultations, there will be a need to categorize the eligible persons for compensation. This will include those who stand to lose, as a consequence of the project, all or part of their physical and non-physical assets, including homes, productive lands, resources such as farm lands, commercial/business properties, tenancy, income-earning opportunities etc.

3. **Valuing Entitlement:** Properties to be affected by the proposed project will be inspected/referenced or enumerated. This exercise will be contracted out to an independent valuer to avoid any doubts of under-valuing. A statutory accredited valuation body, however, should be involved in the valuing process. PAPs will be entitled to compensation sufficient to assist them to improve or at least maintain their pre-project living standards, income earning capacity and production levels.

4. **Cost of Relocation and Income Restoration:** Upon completion of the valuation exercise and the identification of relocation and income restoration needs, a budget and financing plan will be prepared and arrangements made to compensate the affected people in accordance to the law of the partner states. Commitments regarding financial and physical resources for compensation will be made by each town when a subproject involves land acquisition. If replacement land is provided for agricultural, residential, or business use, it will have secured tenure status and be without any additional cost, taxes and surcharges to the displaced persons at the time of transfer.

5. **Delivery of Entitlements:** Entitlement will be provided to the displaced persons prior to the commencement of project works at a particular subproject site. Entitlements may range from cash payments and/or building materials to the provision of new land, new homes and compensation for other lost properties in accordance with the identification of the impact on their property. Compensation will be paid before the owners/occupiers are made to vacate their properties for commencement of the proposed project. Following compensation, the

property owners must be given at least three months notice to quit after payment of compensation.

6. **Implementation Arrangements/Responsibilities:** There will be a need for the establishment of an appropriate institutional framework for the management and implementation of land acquisition and compensation modalities in order to minimize problems in the operation.

7. **Conflict Resolution:** The process of land acquisition and compensation will have mechanisms for conflict resolution especially where any of the PAPs is not content with the compensation package. In this case the extent of land takings and loss/damage to properties and amount of compensation to be paid to the PAPs will publically be made known. In addition, the affected people shall have the option to appeal if not satisfied. Grievances arising from the process including inadequacy of compensation paid should be settled in accordance to the relevant law of the partner states.

8. **Monitoring and Evaluation Framework:** The Monitoring and Evaluation (M&E) mechanism will assess the implementation process in order to identify and rectify any inconsistencies. M&E will provide the project managers and other stakeholders with continuous feedback on progress made in the land acquisition and compensation process. Of special importance, is whether the livelihoods and living standards of the PAPs have been restored or enhanced? Monitoring and evaluation of the implementation of land acquisition and compensation plans will be carried out by Implementing Agencies (IAs) and towns programme teams.

Appendix B10.4: General Framework for Faecal Sludge Management

The project sanitation related interventions aim to provide an efficient and cost effective means of collecting, re-using (if appropriate) and disposing of excreta and community liquid waste in a hygienic way so as not to endanger the health of individuals or cause environmental degradation. However, if improvements in health and the environment are to be realized it is essential that proper consideration should be given to proper collection and disposal/treatment of faecal sludge. It is proposed that all the towns shall have a proper faecal sludge treatment facility. While the likely options for the program towns include conventional sewerage systems, a dedicated faecal sludge treatment plant is recommended on technical and economic considerations. The general framework below shall apply to the design, collection and treatment of the faecal sludge.

1. It is important that programme sanitation related interventions are carried out in parallel with a suitable promotion campaign in order to enhance health benefits to communities.
2. Clear responsibilities shall be assigned for proper faecal management system. This includes: Who will be collecting the sludge? Who will be running treatment facility? Who will be trading the treated sludge?
3. Screen available technologies, pre-design potentially feasible technologies and evaluate options on the basis of principles and performance criteria consistent with national policies and regulations. This will include:
    - Achievable consistency of solids - the solids should be easy to handle and volume be reduced as much as possible;
    - Hygienic quality of solids;
    - Quality of liquid effluent;
    - Operation and maintenance requirements;
    - Skills required for operation and supervision; and
    - Risk of failure and hazard to public health and other cost criteria such as (land requirement, investment costs, O+M costs).
4. Faecal sludge from toilets or septic tanks may be removed and transported to the treatment site by vacuum tankers or manually operated vacuum tugs.
5. Ensure optimal siting of the facilities respecting the development plan of the town but should not be too far to discourage sludge reaching the facility.
6. Since sludge treatment plants may generate significant noise, adequacy of a buffer zone should be provided between the plant and sensitive noise receptors to abate noise generated.
7. The sludge produced should be disposed in an appropriate manner. Wherever possible, it should be used productively as an additive to the composting or through other methods including landfills sited in areas of low permeability with deep groundwater tables or built with impervious linings.
8. Many adverse impacts of sludge treatment can be avoided altogether or mitigated more successfully and at less cost by thoughtful selection of plant technology, appropriate design, and appropriate siting of the treatment works.
9. Minimize disturbance and destruction of floral and faunal communities and reduce the sensitivity of species, populations and ecological communities particularly in considering the timing of disturbance relative to breeding, and migratory cycles of species.
10. Assess the risk of contamination of ground water and ensure that the siting of the treatment facility will not threaten in any way the quality of surface water resources in the nearby area.
11. Appropriate siting and management of treatment and disposal facilities needs to be effected so that:

- Odours and noise will not disturb nearby residents or other users of the area,
- Resettlement if required is managed with sensitivity, and
- Mitigation plan needs to be developed to offset adverse impacts on human environment.

12. Mitigation plan for social issues should consider:
    - Potential impact on settlement patterns, community structure and cohesion,
    - Disruption to any existing services, or recreational areas,
    - Social equity considerations such as means to offset any inequities for host community, and
    - Any other issues raised during the process of community consultations.
13. Ensure that the facility has adequate protection to avoid free accessing and potential accidents.
14. Ensure that the system shall be simple to operate and manage in a sustainable manner and adequate trainings shall be provided to staff.
15. Ensure that the system at treatment site and collection facility has adequate safety equipment to protect the health of the workers.
16. The sludge treatment facility shall be adequately protected from possible flooding in the area.
17. A sound treated sludge disposal plan shall be adopted on the basis of the intended use of the sludge and shall meet national standard requirements. Under no circumstances such product shall contain disease transmitting organisms beyond tolerance limits and they should also be chemically safe.
18. Treated sludge disposal plan shall include consultations with farmers and potential users of the sludge.
19. The effluent waste water quality of the treatment plant shall meet the set standards of national effluent quality (or at least 90% of BOD and faecal coliform removal).
20. The operation of the facility shall include monitoring of quality of effluent and produce.
21. Odour and seepage from solid waste landfill, sludge treatment and wastewater treatment plants will be major issues. The specific designs of the schemes will take these into consideration.
22. Visual intrusion is a potential adverse impact associated with treatment facilities and there is therefore a need to consider the following:
    - Treatment plant siting in the context of any landscapes of local or regional significant;
    - Potential visual impacts caused by clearing of vegetation, the presence of the treatment plant facility, biosolids stock piles and lights for security and night operations among other impacts, and
    - Reduction of visual impacts by careful siting, landscaping and planting of vegetation and painting of installed facilities with an appropriate colour.
23. There is need to consider cumulative impacts resulting from a number of activities with similar impacts interacting with the environment of the project area.
24. At the time of design, consideration needs to be given to location of treatment works in relation to the prevailing wind direction and the location of residential areas.
25. Appropriate emergency response procedures need to be drawn up and put in place to deal with unexpected incidents, including accidents with the use of treatment chemicals.

B11: Gender and Social Analysis

Due to its favourable climatic conditions for agriculture, fishing and other economic activities, the LVB supports one of the densest populations in the world, with densities of up 1,200 persons per square kilometre in parts of Kenya. The Lake Victoria basin's population was estimated at around 35 million as of 2005 in the five countries. The people living in the basin are involved in several activities in support of their livelihood including fishing, farming, bee keeping, trading activities, quarrying and mining. The perceptions and practices related to the exploitation of the natural resources are closely intertwined with livelihood and culture.[5]

More than half of the basin's population is living on an income of less than 1 dollar per day and relying heavily on subsistence production. There are high levels of illiteracy, lack of appropriate skills for production and income generation activities, and lack of socio-economic incentives to meet the challenges of environmental management and development. Mortality rates are high and tuberculosis and water borne disease like malaria, typhoid and bilharzias are widespread while malnutrition is evident among children. Access to health care services is inadequate and health facilities are commonly inefficient. The situation is the same for water and sensation services. This poses a challenge for the partner states within the basin to meet the MDGs. [6]

The proposed program will respond to the five policy frameworks of the LVBC, which are:

- Policy Area 1: Ecosystem, natural resources and environment: the environmental management and health education, coupled with the solid waste management interventions will improve livelihood and enhance the management of ecosystems, natural resources and a clean and health environment;
- Policy Area 2: Production and income generation: the interventions will increase production and creating a conducive working environment through maintaining sustainable resources and equitable utilization of the Lake Basin;
- Policy Area 3: Living conditions, poverty and quality of life: interventions will lead to a healthy informed society with improved quality of life and developed infrastructure;
- Policy Area 4: Population and demography: proposed environmental and hygiene education will contribute to the increase of productive population through the reduction of water borne disease and reduction of time spending in water collection;
- Policy Area 5: Governance, institutions and policy: the capacity building and the creation of the MSFs, which will be composed of members from the various stakeholders in the community, and having increased representation of women in decision making position will enhance the governance and transparency in the sectors,

Gender and Social Issues in EAC

The main objective of the EAC is to develop policies and programs aimed at widening and deepening cooperation among the partner states in political, economic, legal and judicial affairs, social and cultural life, research and technology, defence and security. This broad objective is projected to be achieved, among others, through mainstreaming of gender and social issues in all its

[5] UNEP, 2005
[6] EAC, LVBC, Operation Strategy Lake Victoria Basin Commission 2007 – 2010(), November 2007

endeavours and the enhancement of the role of women in cultural, social, political, economical and technological development. [7]

Social Development Program: This aims at promoting improved health services with emphasis on HIV/AIDS; education and training; water supply and sanitation; and nutrition. Gender is a crossing cutting issue in these priorities. In order to enhance the gender framework of the EAC, the process went through extensive consultations with various stakeholders in the partner states. A comprehensive regional study was commissioned in 2003 to review relevant literature of the partner states pertaining to gender and community development in collaboration with the national gender and community development structures. The draft report went through stakeholders' consultations and a synthesis was presented in a regional workshop attended by representatives from partner states, civil society, academics and development partners.

To operationalise the gender and community development framework, the EAC established sectoral councils and committees which report to the Council of Ministers and the Summit. A sectoral committee on gender and community development was established in 1998 with the mandate to:

- Be responsible for the preparation of a comprehensive implementation program and setting out the priorities with respect to its sector;
- Monitor and keep under constant review the implementation of the program of the community with respect to its sector;
- Submit from time to time reports and recommendation to the Coordination Committee on its own initiative or upon the request of the coordination committee concerning the implementation of the provisions of the Treaty that affects its sector; and
- Have such other functions as may be conferred on it by or under the Treaty.

Mainstreaming Gender and Community Development Framework in Macro-economic and Sector Policies and Programs: The Framework acknowledges the link between gender and economic performance, meaning that it has a negative impact if you leave half the population out of the economic circle. The EAC – Gender and Community Development Framework recognizes water and sanitation as sector which helps in economic growth and ought to be translated into social transformation of the individual and communities. The Gender and Community Development Framework states that accessibility to water and sanitation by communities has strong bearings on their health levels which impact on their productivity and social and economic wellbeing. It saves energy and time spent by the members of households particularly women and children. Despite the enabling policies in water and sanitation, there are challenges such as maintenance of the facilities and participation in decision making in water supervision structures by communities, especially women. In this respect, the program will promote effective participatory systems to achieve successful management, train the water providers and care takers of sanitation facilities; and promote positive behavioural change in hygiene practices at the community and household level.

The following table B9.1 provides selective socio-economic indicators for the five countries. From the data available, it can be concluded that the five countries are not on the same level in terms of access to social services. However, in some areas, all the partner states are on the same level of development with the exception of Burundi which is recovering from a war. The five countries enjoy lots of leverage at the social and political level. This will hopefully be nourished by the common economic market which was launched as of 1st of July 2010.

[7] Gender and Community Development Framework, EAC, 2006

Table B9.1 Comparative socio-economic:

Comparative Socio-economic Indicators							
Basic Indicators			Year	Tanzania	Uganda	Kenya	Rwanda	Burundi
Area (000Km2)				945	241	593	26.3	27.8
Total Population (millions)			2008	40.7	29.6	38.3	9.8	8.2
Urban Population			2009	25.6	13.1	21.9	18.6	10.7
Population Density (Km2)			2009	48.28	135.705	68.581	379.604	293.304
GNI per Capita (US$)			2008	440	420	770	410	140
Labour Force Participation - Female (%)			2007	50	48	48	53	51
Gender Related Development Index Value			2009	0.527	0.509	0.538	0.459	0.39
Human development Index (Ranking among 182 countries)			2009	151	157	147	167	174
Population living below $1 (% of population)			2008	33.64 (MDG)		45.9		
Demographic Indicators								
Population Growth Rate - Total (%)			2008	2.9	3.2	3	2.8	2.7
Dependency Ration (%)			2007	89.8	106.4	82.9	82.9	88.5
Sex Ratio (%)			2009	98	100	100	99	99
Life Expectancy at Birth - Total (year)			2009	56.3	55.7	54.9	50.7	50.9
Infant Mortality Rate (per 1000)			2009	61.6	71.7	61.8	97.4	96
Child Mortality Rate (per 1000)			2008	115.5	206.8	101.8	185.3	166.1
Maternal Mortality Rate (per 1000)			2008	578	435	560	750	480
Total Fertility Rate (per women)			2008	5.5	6.7	4.6	5.5	6.3
Health $ Nutrition Indicators								
Access to safe water (% of population)			2008	69	64	57	74	47
Access to sanitation (% of population)			2006	33	33	42	23	2
Incidence of Tuberculosis (per 100,000)			2007	297	330	353	397	367
HIV/AIDS Prevalence Rate			2009	6	6	7	3	NA
Public Expenditure on Health (as % of GDB)			2008	1.6	0.6	1.7	1	1.4
Education Indicators								
Gross Enrolment Ratio (%)			2008					
Primary School - Total			2008	112	108	110	128	121
Ratio of Female to Male Enrolment			2007	98.4	100.8	98.5	101.6	92.2
Secondary School - Total			2008	26	21	29	15	18
Ratio of Female to Male Enrolment			2007	NA	82.7	87.5	89.3	72
Literacy Rate (%)			2008	70	69	62	78	47
Sources: AfDB Statistical Department, based on various national and international sources & East African Community Facts and Figures, 2009								

LVBC: Integration and Social Issues

The Protocol for Sustainable Development of Lake Victoria Basin, 2003, Article 23, Mainstreaming of Gender Concerns states that "The Partner States shall promote community involvement and mainstreaming of gender concerns at all levels of socio-economic development, especially with regard to decision-making, policy formulation and implementation of projects and programs."[8]

[8] Lake Victoria basin Commission Protocol

In this regard, the program is designed to enhance the participation of communities and mainstreaming of gender concerns in the program interventions.

The program comprises of an integrated package of interventions, including water supply and sanitation improvement, solid waste management, drainage improvement in key areas, as well as capacity building and training.

The proposed interventions, especially public standpipes and toilet facilities, are of benefit to the poor and vulnerable. Greater access and shorter distances to collect water will help reduce the burden on women and children. Increased access, availability, reliability, quantity and quality of water and sanitation services will reduce the incidence of waterborne diseases and therefore positively impact on public health. MSFs will give women and vulnerable groups direct involvement in the selection, location and management of sub-projects through their participation in the forum.

The program will set the conditions for development of income generating activities, construction in the short term and continued employment for those who will operate and maintain facilities, associated vehicles and equipment. Improved services are likely to attract industries, with the potential to create more jobs and boost the local economy. Improved health will translate into lower healthcare costs for families. Key factors have therefore been taken into account in the feasibility study include the following:

- Rapid population growth and urban development in secondary towns around the lake, with the attendant problems of poverty, unemployment, provision of basic services, etc.
- Environmental pollution of the Lake Victoria and related watersheds that feed into the lake – including increasing volumes of human, commercial and industrial waste in both liquid and solid form – impacting on fisheries, water source development for drinking purposes and the general environmental health of the lake itself.
- Future sector development, including: agriculture, agro-processing, tourism and small scale manufacturing.
- Poverty and its implications – a major issue throughout the Lake Victoria basin, with average per capita income estimated to be less than US$ 270 per year (or 40% of the average for sub-Saharan Africa).
- High incidence of waterborne and water-related diseases, especially affecting women and children.
- Poor housing conditions with limited access to basic services.
- Increasing degradation of water supply, sanitation, solid waste and storm water assets, leading to deteriorating service levels and mounting investment costs to stabilise the situation.
- MDGs for water and sanitation.

Consequently, specific gender and social indicators will guide the implementation of the proposed interventions in the 15 towns. This will be monitored by the M&E system of the program. In preparation to the M&E for the gender and social indicators, a guideline of gender for water and sanitation for the EAC and pro-poor strategy will be developed. The objective of the monitoring is to determine the progress regarding gender and the positive social impact of the program on:

- Under 5 mortality rates;
- Increase of % of population practicing good hygiene, male, female;

- Time spend in fetching/queuing for water by households and the distance from the nearest water source;
- Reduction of water borne diseases;
- No. of women and men trained in hygiene and sanitation;
- Formation of MSFs with 50% women in decision making positions;
- Development of pro-poor strategies with clear indicators
- No. of public toilets run by women's groups
- Gender issues are tackled within the baseline survey

Program Beneficiary Towns:

4.1 The locations of the selected towns for the proposed initiative are shown in Figure 1 and listed with their 2009 human population, growth rate and water demand in Table (2). The same table is indicating the current sanitation status.

Table B9.2 – Program Beneficiary Towns

Country (2009)	Town	Population	Growth rate		HH size	Water Demand M^3	Sanitation	Solid Waste
Kenya							MOSTLY ON _SITE SANITATION< WITH VER FEW ECO_SAN. ANEDQUATE SANITATION FACILATE IN PUBLIC PLACES	NO PROPER SOLID WASTE COLLECTION AND MANAGEMENT
	Kericho	104,138	2.4		6	9,978		
	Keroka	25,840	2.91		6	2,664		
	Isebania	12,832	2.6		8	660		
Tanzania								
	Geita	69,922	3.4		7	3,192		
	Sengerema	62,940	3.4		6	3,059		
	Nansio	36,072	3.4		8	1,554		
Uganda								
	Mayuge	10,865	3.2		6	490		
	Kayabwe + Buwama	8,265	3.2		8	362		
	Bukakata	10,408	3.2		6	182		
	Ntungamo	16,606	3.2		6	772		
Rwanda								
	Nyagatare	25,000	3		8	2,000		
	Kayonza	16,000	2.6		6	1,280		
	Nyanza	32,000	2.6		8	2,560		
Burundi								
	Muyinga	31,000	2.74		6	2,480		
	Kayanza	20,174	2.35		6	1,614		
	Ngozi	36,947	2.35		8	2,956		

The 15 towns of Lake Victoria suffer the most from the impact of inadequate access to water – water borne and hygiene related diseases, conflicts, socio-economic and loss of many hours spent in a day collecting water. High dropout rates of girls have been reported as a result of inadequate access to water and sanitation. It has been reported, that in Eastern Africa cultural barriers play a major role in hindering women accessing public facilities built along the road side. In low income towns at Lake Victoria, for instance, a high percentage of women have reported that they were

never consulted about the location of the water points and other sanitation facilities. The needs and priorities of men and women for water supply and sanitation differ and are determined by the roles and responsibilities of each. It is therefore important to promote and create awareness on the importance of gender mainstreaming. All in the program participating countries have got their gender mainstreaming policies in place.[9]

A major socio-economic and needs assessment exercise was carried out for the program.[10] The results of the needs assessment have been summarised on a matrix and given as Tables 3. These matrices summarise the existing situation with regard to water and sanitation facilities in all of the program beneficiary towns in the five countries. The existing sources for water supply cover a wide range, but it is crucial to note that in 13 of the towns water supplies were insufficient, even for basic needs, during the dry season. This seasonal problem is indicated by the increasing lengths of travel that need to be undertaken (predominantly by women and girls) to obtain water in the dry season. With regard to sanitation, the existing provision of pit latrines and flush toilets was higher than 70% in all of the towns except the fishing village clusters at Bukakata and at Mayuge in Uganda.[11]

A significant finding was that most households do not boil water collected from existing sources, even though they would wish to, as there is insufficient fuel wood and charcoal which is in any case expensive. There are serious problems of waterborne and water related diseases caused by the poor quality of water supplies and the current inadequacy of sanitation provision. The core medical conditions of diarrhoeal disease, dysentery, typhoid and cholera are found in the WATSAN II selected settlements with very high levels in the lakeside fishing villages. Malaria is a very serious problem and is a significant cause of infant mortality. The other water related health problem is bilharzia (schistosomiasis), with high incidences at the lakeside villages which are the habitats of the host snails. The lake water is used as a latrine and also people wade in it.

The collection of water at the household level is considered the responsibility of women, and particularly girls, whereas the collection of water for sale is carried out by men. However there were some unusual and surprising situations in the case study settlements were women have recently been taking on roles traditionally carried out by men. In Kericho in Kenya it was reported that the water and sewerage company employed women plumbers for some time. Women have recently taken a much stronger role in commercial and business operations and the banking system has (rightly) recognised that lending to women is much less risky than lending to men.

[9] Mott MacDonald, 2009a
[10] Ibid
[11] ibid

Table B9.3	Uganda					Rwanda		
EXISTING SERVICE PROVISION	**MAYUGE**	**KAYABWE**	**BUWANA**	**BUKA-KATA**	**NTUNGAMO**	**NYAGATARE**	**KAYONZA**	**NYANZA**
Existing Water Supply Source:								
Shallow Wells	33%	70%	9%		Some	Some		
Rainwater Harvesting	Some	18%				Some		
Piped Supply (communal)								
Piped Supply (household)		15%				Some		Some
Boreholes	Some		73%					
Springs	Some							
River						Some		Some
Lake Victoria			11%	100%				
Other Water Source		33%					urrent Source?	
Piped water sold at kiosks					69%			Some
Water Sellers	Some							Most
Rainwater Harvesting							Many	
Carry water from less than 500m								Most
Carry water from 500m to 1km	Average 500m		33%			Most	Most	
Carry water from 1km to 2km away		48%						
Carry water from over 2km away								
Water available all year?	40% no		40% no		No	No	No	No
Existing Sanitation Facilities:								
Pit Latrine	50%	82%	100%	Some	50%	Most	Most	Most
Flush toilet					20%			
Septic Tank								
Piped Sewerage Connection								
Ability to pay for additional water supply and sanitation facilities	83%	90%	100%	Varies	100%			Most
Willingness to pay for additional water supply and sanitation facilities	91%	70%	94%	Varies	65%-90%	50%	87%	90%+
Priority intervention:								
Latrines (communal/public)	Yes	91%		High		No	Yes	No
Piped water supply to household	Yes		94%		90%	Most	50%	90%
Communal safe drinking water	Yes			Very High	65%	No	Yes	
Provide water storage tanks					Yes			
Repair broken boreholes					Yes			
System for emptying latrines and septic tanks	Yes				Yes			
Buried pipe sewerage network					Very high			
Existing Solid Waste Management Facility:								
Collection	None	None	None	Some	No	Yes		
Landfill Site	None	None	None	None	No			
Proposed Solid Waste Management Interventions:								
Provide waste collection skips	Yes			Yes	Yes			
Separate collection for organic and non-organic waste					Yes			
Note: The total proportions for each place can be in excess of 100% due to multiple sources being used								
Source: LVBC WATSAN II Needs Assessment August 2009								

Table B9.3	Burundi			Tanzania			Kenya		
EXISTING SERVICE PROVISION	**MUYINGA**	**NGOZI**	**KAYANZA**	**GEITA**	**SENGEREMA**	**NANSIO**	**KERICHO**	**KEROKA**	**ISEBANIA**
Existing Water Supply Source:									
Shallow Wells				Some	Some	40%	5%	Some	76%
Rainwater Harvesting	90% in wet	60%					4%	Some	Some
Piped Supply (communal)		75%	25%	Some		53%			Some
Piped Supply (household)	Some				Most		61%	8%	
Boreholes				Some					
Springs	Most		64%	Some				Some	
River							8%	33%	Some
Lake Victoria						5%			
Other Water Source									
Piped water sold at kiosks				Some			19%		
Water Sellers	Some	Some				Some in dry	3%		
Rainwater Harvesting									
Carry water from less than 500m		75%							
Carry water from 500m to 1km		12%							
Carry water from 1km to 2km away		12%							
Carry water from over 2km away	At least 70%		66%	Many in dry	In dry season				
Water available all year?	No	No 50% HH	No		No		No	No	No
Existing Sanitation Facilities:									
Pit Latrine	80%	70%	72%	58%	Most	Most	Most	Most	100%
Flush toilet	10%	30%	27%	42%	31%	Some			
Septic Tank				Some	Some				
Piped Sewerage Connection									
Ability to pay for additional water supply and sanitation facilities	85%	100%	100%	100%	96%	88%	95%	94%	96%
Willingness to pay for additional water supply and sanitation facilities	Some		60%		56%			95%	94%
Priority intervention:									
Latrines (communal/public)		No	No	Yes	Yes	Yes	Yes	Yes	Yes
Piped water supply to household		100%							
Communal safe drinking water							Yes		83%
Provide water storage tanks									
Repair broken boreholes									
System for emptying latrines and septic tanks									
Buried pipe sewerage network									
Existing Solid Waste Management Facility:									
Collection	No	No	No						
Landfill Site	No	No	No						
Proposed Solid Waste Management Interventions:									
Provide waste collection skips									
Separate collection for organic and non-organic waste									

Note: The total proportions for each place can be in excess of 100% due to multiple sources being used

Source: LVBC WATSAN II Needs Assessment August 2009

Program Benefits

Under a common regional theme of improving the environment and livelihoods of the populations around the Lake, the investment plan provides an integrated platform which is pro-poor, focused and driven by the regional needs of the populations served. In parallel with health education programmes the proposed interventions will especially benefit the poor and disadvantaged, many of whom have no access to proper water and sanitation, improving their health, well-being and economic potential. Managed treatment and disposal of solid waste will improve the immediate physical environment and help reduce the impact of urbanisation on Lake Victoria and its contributing basin.

The proposed water supply programs vastly increase the access, availability, reliability, quantity and quality of water to each of the program towns, especially benefiting the poor. In common with sanitation programs they will have a significant impact on public health and general living conditions. The programs will reduce the use of water from contaminated sources and those of unreliable quality and yield such as shallow wells and surface water, reducing the incidence of water borne disease. The proposed pro-poor strategy will inform the program design and the adjustment of tariff. The pro-poor strategy proposed study will be done from a gender perspective in order to identify who is poor in the community, how to tackle poor communities/households, how to capacitate them to engage in the water and sanitation operation. The study will give a regional dimension to the sector to enhance integration, exchange and integration between the communities.

The Regional Hygiene and Sanitation Strategy will aim to promote adoption of improved on-site sanitation facilities at the household level and includes the following components:

- Hygiene promotion campaign – Sensitisation programmes to communicate the importance and benefits associated with improved 'on-site' sanitation facilities;
- Collection and transport of faecal sludge – Provision of improved facilities / equipment for the collection and transport of sludge to lessen the reliance on manual emptying;
- Treatment of faecal sludge – Provision of improved (location and technical design) final sludge disposal facilities;
- Finance – Access to finance (grants or micro-finance loans etc) to cover part of the construction costs for improved on-site sanitation (e.g. materials, latrine slab etc);
- Public Awareness Raising Campaigns – Media campaign (newspaper, radio, public meetings etc) to promote and raise awareness of the campaign;

At the town level, a Multi-stakeholder forum will be established. The aim is to bring together representative of women groups, youth groups, orphan-headed household and other vulnerable groups, community based organization, faith based groups, non-governmental organization, local government, local media and private sector, other. The MSF will be coached with the necessary skills to assume their role and responsibility in ensuring equitable distribution of water sources, equitable tariff, appropriate selection of technology, accessing the services to poor households etc.

Focus will be given in accordance with the EAC policy on gender and community development in water and sanitation sector. The focus would be through ensuring increasing the number of women in water management system, decreasing distance needed to be travelled by women to collect potable water by bringing water nearer to homesteads, increase education for women on waste water management; backyard gardening (vegetables) and environmental protection, ensure that all schools have functioning separate toilets for girls and boys and encourage and support all households to have hygienic toilets

To enable the program to achieve these, a clear regional gender mainstreaming strategy, guidelines, tools and indicators for water and sanitation will be prepared. As far as this program is concerned the focus would be to assist the EAC and its organ, the LVBC in bringing about a regional gender, water and sanitation strategy /policy. While maintaining the gender integration in the Capacity Building Proposal, a complementary task on "Gender Mainstreaming of the Water and Sanitation Sector for the EAC and its organ, LVBC" will be developed. This task will provide detail interventions at policy and monitor progress made at operation level. At policy level, focus will be given to the following areas:

Policy level:

- To develop a strategic plan and guidelines for Regional Gender, Water and Sanitation;
- Capacity building to the Gender and Community Development EAC organ in mainstreaming gender through training of its staff;
- Integration of gender indicators in the socio-economic database of the EAC;
- Assist in gender mainstreaming of the LVBC as one of the EAC organs responsible for water and sanitation through training of its staff on gender issues and gender sensitive monitoring, evaluation and follow-up.

Operational level:

The program capacity building intervention will streamline gender across all its activities. Furthermore, the following steps in particular which are planned in the Capacity Building component are to employ gender sensitivity and analysis:

- Step1: Baseline surveys, diagnosis and consensus
- Step 2: Assessments of existing institutions, knowledge and skills
- Step 3: Preparation and validation of a Training and Capacity Development Plan, including training materials, manuals, tool kits, and equipment procurement schedules, as appropriate
- Step 4: Implementation of the TCP to promote organizational change and improved performance
- Step 5: Monitoring and evaluation

B12. Program Preparation, Supervision, Monitoring and Evaluation

The program was jointly prepared by LVBC and the participating countries since November 2007 through the support of the Africa Water Facility (AWF). The investment study was completed by April 2010. The preparation study and outcome is informed by community surveys undertaken at the grass root level. The study has also involved numerous consultation workshops at local, national and regional level. At the regional level, the study was under the oversight of the Regional Policy Steering Committee (RPSC) composed of the sector ministers from each EAC partner state, LVBC and UN-Habitat.

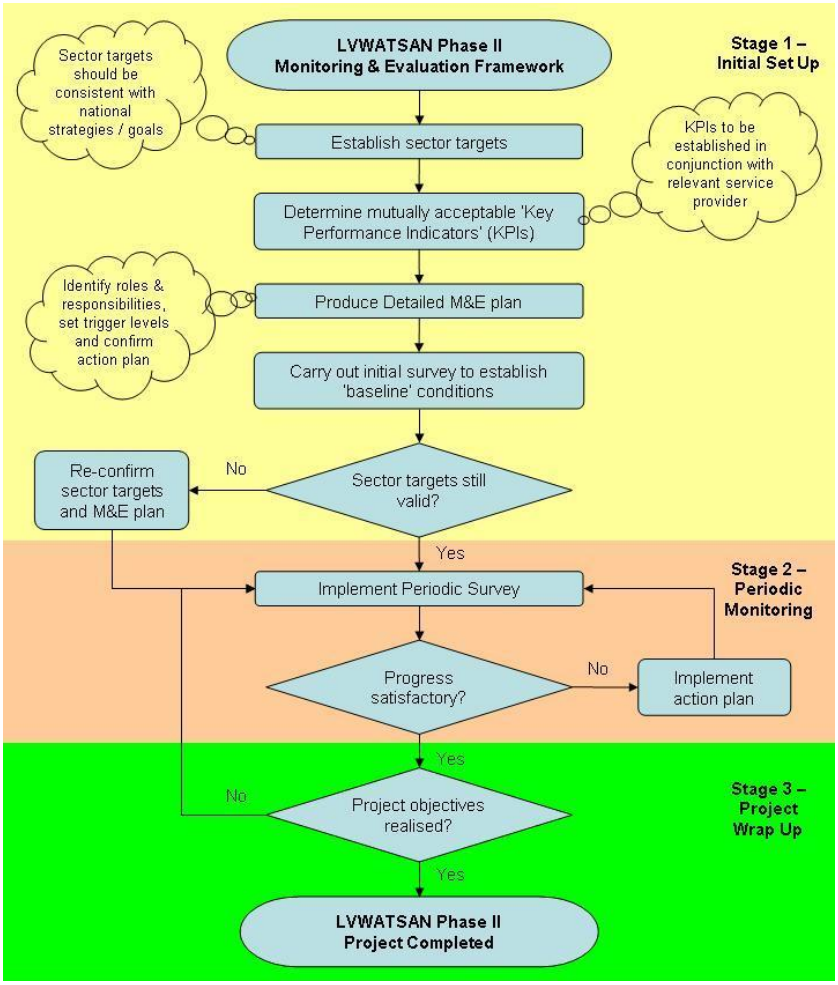
The program appraisal was a joint effort by LVBC, participating countries and the Bank. Several development partners such as WSP, EIB, KfW, AFD, UNEP, JICA, USAID, Japan and GTZ were consulted during preparation and appraisal and at the program donors' conference, convened in Nairobi to solicit for additional resources. During preparation and appraisal, field visits were made to all program participating towns. Numerous meetings, discussions, and consultations were conducted with key stakeholders, focusing on the program objectives, the expected impact and benefits.

The program design has included a participatory process for program implementation mainly at the grass root level. The program will support the establishment of the Multi Stakeholder Forums (MSFs) at town level with representation from women groups, youth groups, orphan-headed households and other vulnerable groups, local government, private sector, NGOs and CBOs. The partnership at the MSF level will provide guidance and facilitate participatory process for the execution of the program. The provision of water and sanitation services involves numerous stakeholder groups and as such, coordination of effort towards a more holistic approach through multi-stakeholder partnerships makes a good sense.

Monitoring the development objective and implementation progress of the program will be handled by each IA in each country and the LVBC at regional level. The Bank will be kept informed about the progress of program implementation through regular and timely reporting by LVBC. Quarterly progress reports prepared in ADF's format shall be submitted to the Bank and the reports shall cover all aspects of program implementation including the status of execution, expenditure, programmed work, environmental and social mitigation measures, performance indicators mentioned in the Log Frame and unforeseen problems, as well as offer corrective actions to be taken.

The UN-HABITAT through the capacity building component will provide technical assistance for the monitoring and evaluation system to LVBC and the IAs and the towns. The framework below for the monitoring and evaluation of the program will enable LVBC and the partner states monitor progress across the programme.

Flowchart of Proposed Monitoring and Evaluation Framework[12]



The objectives of the proposed monitoring and evaluation (M&E) framework include; (i) establish accurate picture of baseline conditions in all fifteen secondary urban centres across the region; (ii) provide an effective tool for monitoring program progress in relation to clearly established targets; (iii) Provide a clear plan that identifies relevant trigger levels and required actions to be taken where progress falls behind schedule; and (iv) provide an effective tool for progress to be monitored on a regional basis.

For each town, an initial baseline survey will be conducted during the design of sub-project schemes which will be used to establish the baseline conditions against which progress will be measured. The program will utilize and further enhance the existing monitoring tools developed for use in the water sectors in each respective country.

[12] Mott Macdonald Investment Plan Study for LVWATSAN II

The LVBC will take a lead role in the M&E framework for the program. Detailed roles and responsibilities under the M&E framework will be agreed between LVBC, the RPSC and the IAs via their sector ministries at the start of the detailed program studies. A summary of specific roles and responsibilities are illustrated below which will further be expanded in the details M&E action plan.

Table B12.1 – Institutional Arrangements for M&E Framework

Role	Responsible Institution	Tasks
Regional Coordination	LVBC	Take overall responsibility for establishing the M&E framework to monitor progress under LVWATSAN Phase II across the region and report back to key donors (AfDB). Review progress between countries to identify areas where best practice may be replicated across the region. Responsible for ensuring that respective countries, via the executing agencies, carry out tasks allocated to them under the M&E framework.
National Coordination	IAs	The implementing agencies will be responsible for overseeing the implementation of the detailed M&E plan in their respective countries and towns. Key responsibilities will include: o Confirmation of sectoral targets; o Confirmation of relevant KPIs; o Agreeing timeframe for M&E framework (produce action plan); o Agree relevant trigger levels and define appropriate mitigating actions where progress in achieving project goals is not satisfactory; o Defining the TOR for and appoint the 'M&E Survey Teams' responsible for carrying out the baseline and periodic surveys; o Review progress across project towns and report back to LVBC via the RPSC; o Review progress between towns to identify areas where best practice may be replicated.
M&E Survey Teams	Town Coordination teams	The M&E Survey Teams will be responsible for carrying out the initial baseline survey and repeat surveys in accordance with the plan prepared by the IAs. The TOR for the survey teams will be set by the IA but would typically include the following responsibilities: o Implementation of baseline and repeat surveys; o Data analysis and evaluation; o Reporting back to respective IAs
Technical Assistance	UN-HABITAT	Given experience gained from Phase I, UN-HABITAT will provide technical assistance to the LVBC, the RPSC and the IAs during the establishment and implementation of the proposed M&E framework.

The program outcome indicators include: Potable water supply coverage, Water supply per capita consumption, Percentage of households within 250m water supply access, Hygiene and sanitation coverage, Reduction of water borne diseases, %reliability of water services, % for UfW, and % revenue

The program outcome information will be used to evaluate the impact of the program interventions in increasing access to water and sanitation and also evaluate the quality of services provided and the degree to which the utilities are viable and able to provide services on a sustained basis.

The program will be implemented over a period of 48 months starting in January 2011 in accordance with the implementation schedule and Procurement plan. The program will have annual review workshops at country level as well as at regional level to review program progress, share experience, and chart out the following year action plan. These technical reviews will be supplemented by the bi-annual RPSC meetings to provide policy and strategic guidance for the program. The Bank on its behalf will monitor the implementation of the program through regular supervision missions undertaken at least 2 times a year. The Bank's supervision missions will be synchronised with the regional annual program review meetings. The tentative implementation plan for the program is as follows:

Activity	Target Date
Program Appraisal	July 2010
Approval by the Board	December 2010
Publication of GPN	January 2011
Start of Program (launching)	March 2011
Program Supervision	semi-annual
Mid Term Review	March 2013
Program Completion	December 2014