Feasibility Study for an Integrated Watershed Management Program for the Kagera River Basin

Grant No. TF095177

Annex A: Integrated Watershed Management Action Plan

10 December 2012

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ACRONYMS

ASDP	Agriculture Sector Development Programme - Tanzania
ASDS	Agriculture Sector Development Strategy - Tanzania
CITES	Convention on International Trade in Endangered Species
CNTB	Commission for Land and Other Properties – Burundi
COBWEB	Extending Wetland Protected Areas through Community Conservation Initiatives
COMEBU	Comptoir Minier des Exploitations du Burundi SA
CRA	Cooperative Regional Assessment
CURPHAMETRA	University Centre on Pharmacy and Traditional Medicine - Rwanda
DFS	District Forest Services – Uganda
DGHER	The Directorate General of Rural Water and Electricity - Burundi
DSIP	Agriculture Sector Development Strategy and Investment Plan - Uganda
DWD	Directorate of Water Development – Uganda
EAC	East African Community
EDPRS	Economic Development and Poverty Reduction Strategy - Rwanda
EIA	Environmental Impact Assessment
ENSAP	Eastern Nile Subsidiary Action Program
ERR	Economic Rate of Return
EU	European Union
FAO	Food and Agricultural Organisation of the United Nations
FD	Fisheries Department
FRR	Financial Rate of Return
FS-IWMP	Feasibility Study-Integrated Watershed Management Project
FSSD	Forest Sector Support Department - Uganda
GIS	Geographical Information System
GoB	Government of Burundi
GoR	Government of Rwanda
HYSIM	Hydrological Simulation Model
HYSIM-CC	Hydrological Simulation Model for Climate Change
ICRAF	International Centre for Research in Agroforestry – now World Agroforestry Centre
IGEBU	Geographic Institute of Burundi
IMCE	Integrated Management of Critical Ecosystems
IMP	Irrigation Master Plan - Rwanda
INECN	The National Institute for the Environment and Nature Conservation - Burundi
IPCC	Intergovernmental Panel for Climate Change
ISAR	Rwanda Institute of Agronomic Sciences
IUCN	International Union for the Conservation of Nature

IWRM	Integrated Water Resource Management
KTIWRMDP	Kagera Trans-boundary Integrated Water Resource Management and Development Project
LRFC	National Land and Forest Research Centre - Rwanda
LTS	LTS International Ltd
LVBC	Lake Victoria Basin Commission
LVEMP	Lake Victoria Environmental Management Programme
M&E	Monitoring and Evaluation
MAAIF	Ministry of Agriculture, Animal Industries and Fisheries - Uganda
MDG	Millennium Development Goal
MEA	Multilateral environmental agreement
MEEATU	Ministry of Water, Environment, Land Management and Urban Planning - Burundi
MINALOC	Ministry of Local Government, Good Governance, Community Development & Social Affairs - Rwanda
MINECOFIN	Ministry of Finance and Economic Planning - Rwanda
MINETO	Ministry of Environment and Tourism - Rwanda
MINIAGRI	Ministry of Agriculture & Animal Resources - Rwanda
MININFRA	Ministry of Infrastructures - Rwanda
MINIRENA	Ministry of Water Energy and Natural Resources - Rwanda
MINITERE	Ministry of Lands, Environment, Forests, Waters and Mines - Rwanda
MWE	Ministry of Water and Environment - Uganda
MWEM	The Ministry of Water, Energy and Mines - Burundi
NAADS	The National Agricultural Advisory Services - Uganda
NAFA	National Forest Authority - Rwanda
NaFORRI	National Forest Resources Research Institute - Uganda
NAP	National Agricultural Policy - Rwanda
NAPA	National Action Plan for Adaptation
NBI	Nile Basin Initiative
NBSAP	National Biodiversity Strategy and Plan - Burundi
NDIS	National Decentralization Implementation Secretariat - Rwanda
NECOM	Ntungamo Environmental Conservation Management
NELSAP	Nile Equatorial Lakes Subsidiary Action Program
NELTAC	Nile Equatorial Lakes Technical Advisory Committee
NEMA	National Environmental Management Authority - Uganda
NEPAD	New Partnership for Africa's Development
NFA	National Forestry Authority - Uganda
NGO	Non-Governmental Organisation
NIMP	National Irrigation Master Plan - Tanzania

NLC	National Land Centre - Rwanda
NPA	National Planning Authority - Uganda
NRE	Natural Resource Economist
NWP	National Water Policy
NWSC	National Water and Sewerage Corporation - Uganda
OGMR	Rwanda Geological and Mines Authority
ONATOUR	Office National de la Tourbe - Burundi
ORTPN	Rwanda Office of Tourism & National Parks
PAIGEIAC	Inland Lakes Integrated Development and Management Support Project
PAIR	Bugesera Natural Region Rural Infrastructure Support Project
PEAP	Poverty Eradication Action Plan
PEARL	Partnership to Enhance Agriculture in Rwanda through Linkages
PES	Payment for Ecosystem Services
PIP	Project Implementation Plan
PM	Phillips Robinson and Associates
PRA	Poverty Reduction Strategy Paper
PRSP	Project Manager
PSO	Positive Sum Outcome
RARDA	Rwanda Animal Resources Development Agency
RBO	River Basin Office
RBS	Rwanda Bureau of Standards
RDB	Rwanda Development Board
REDD+	Reducing Emissions from Deforestation and Degradation.
REGIDESO	Régie de Production et de Distribution de l'Eau et de l'Electricité - Burundi
REMA	Rwanda Environmental Management Authority
RFP	Request for Proposal
RHoDA	Rwanda Horticultural Development Agency
RPM	Regional Project Manager
SAMUKA	Sango Bay – Musambwa Island – Kagera Wetland and Floodplain
SDE	Social Development Expert
SEI	Stockholm Environment Institute
SPAT	Strategic Plan for Agriculture Transformation - Rwanda
START	System for Analysis, Research and Training
SWAP	Sector Wide Approach to Planning
TAMP	Transboundary Agro-Ecosystem Management Programme
TD	Technical Director
TDA	Trans-boundary Diagnostic Analysis
TIWRDP	Kagera River Basin Transboundary Integrated Water Resources Development

	Project
TL	Team Leader
TOR	Terms of Reference
TWO	Trans-boundary Water Opportunity analysis
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UWA	Uganda Wildlife Authority
UWASNET	Uganda Water and Sanitation Network
VCM	Voluntary Carbon Market
WAP	Water Action Plan - Uganda
WEMS	Wetland and Environmental Management Specialist
WMD	Wetlands Management Department - Uganda
WMO	World Meteorological Organization
WPC	Water Policy Committee – Uganda
WPC	Water Policy Committee – Uganda
WQE	Water Resources Management Department - Uganda
WRA	Water Resource Associates Ltd

1. Programme Overview

1.1 Programme Development Objective

Recognizing the need to develop the Nile River in a cooperative and sustainable manner, the Riparian Countries established in 1999 the Nile Basin Initiative (NBI) through their Council of Ministers of Water Affairs (Nile-COM). The NBI started the cooperative development process by developing a Strategic Action Program. It comprises two programs: (i) the Shared Vision Program (SVP) of basin-wide technical assistance projects, and (ii) Subsidiary Action Programs (SAP) of investment programs at the sub-basin level. There are two SAPs: the Eastern Nile Subsidiary Action Program (ENSAP), which includes Ethiopia, Egypt and Sudan and the Nile Equatorial Lakes Subsidiary Action Program (NELSAP), which includes Burundi, DR Congo, Kenya, Rwanda, Tanzania, Uganda, and the downstream riparians Egypt and Sudan.

The overall Programme development objective is to advance long term investments and capacity building to leverage investment opportunities in the Kagera catchments. The immediate objective of the Kagera sub-basin Integrated Watershed Management Programme (KIWMP) is to provide continued and enhanced support to the sustainable watershed management of the Kagera Sub-Basin in order to improve the living conditions of the people, create alternative livelihoods, enhance agricultural productivity, protect the environment and in the long term reduce sediment transport and siltation of infrastructure and prepare for sustainable development oriented investments.

The overriding regional significance of this will be its contribution to enhanced food security and poverty alleviation in the sub-basin and its long term contribution to arresting degradation of the natural resource base.

1.2 Key Policy and Institutional Reforms Supported by the Programme

NELSAP supports the Lakes Basin countries to develop sound approaches to sustainable watershed management at the regional and national level. The NELSAP countries recognize that future development of the Basin must be environmentally and socially sustainable. Identifying natural resource base and development synergies and thus sustainable development opportunities in the Basin is now a major priority. Focusing on trans-boundary issues provides the riparian countries with a major opportunity to make significant progress towards their economic, social and environmental goals in ways that have proved difficult to achieve independently.

The policy guidelines adopted by the NBI's Council of Ministers of Water Affairs (Nile-COM) in February 1999 further define the primary objectives of the NBI. These objectives are:

- To develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples;
- To ensure efficient water management and the optimal use of the resources;
- To ensure cooperation and joint action between the riparian countries, seeking win-win gains;
- To target poverty eradication and promote economic integration; and
- To ensure that the program results in a move from planning to action.

1.3 Sector and Country Issues Addressed by the Programme and Strategic Choices

Identifying the environment, natural resources and development synergies, and thus the sustainable development opportunities in the sub-basin, has emerged as a major priority. More effective cooperation and coordination between the riparian countries is essential if the sub-basin's natural resource base is to be managed in ways that help improve the quality of life of the inhabitants.

Emphasis will be given to encouraging diverse stakeholder groups to work together, not only within their own countries but especially with counterparts in other riparian countries, as an essential contribution to building the mutual understanding, relationships and trust that will be essential to collaborative problem-solving for the Eastern Nile Basin as a whole.

The Kagera sub-basin includes the head waters of the White Nile and is an important upstream component of the Nile River basin as a whole, in large part because it serves as a fresh water source to a population estimated at approximately 15 million inhabitants, located in four riparian States: Burundi; Rwanda; Tanzania and Uganda.

The key issues with respect to these four countries are summarized below.

1.3.1 Burundi

- Burundi's 7.2 million people are concentrated in a small geographic area, with a population density of 270 persons per square kilometre, the highest in Africa. Poverty in rural areas, where 91 per cent of Burundi's people live, rose from 35 per cent in 1992 to 58 per cent in 2002.
- Soil erosion and siltation of watersheds have increased due to deforestation and watershed degradation, threatening biodiversity and other ecosystem services.
- Agriculture accounts for 50 per cent of GDP, with commercial agriculture making up more than 90 per cent of the country's export earnings. Yields of major food crops have changed little over the past 40 years.
- Poor market access confines farmers to subsistence agriculture. The prices that farmers receive for their products are generally low and erratic. The marketing system is undeveloped. Storage facilities are lacking, and local feeder roads connecting farmers to markets have deteriorated

1.3.2 Rwanda

- Both the economic growth and poverty reduction strategies depend on agricultural growth.
- Agriculture accounts for about 39 per cent of GDP, 80 per cent of employment, and 63 per cent of foreign exchange earnings. It also provides 90 per cent of the country's food needs.
- A key strategy of the Strategic Plan for Agricultural Transformation (SPAT) is the intensification and development of sustainable agricultural production systems.
- The 2005 Land Law secures the rights to tenure for all existing landholders. Implementation of titling has started, with DFID support, and is envisioned to be completed by 2012. The land law also covers land consolidation on a voluntary basis.

- The agricultural sector is constrained by weak institutional and technical capacity.

1.3.3 Tanzania

- Agriculture contributes about 50% of Tanzania's GDP, 75% export earnings, and employs about 4.5 million hectares of land. Most of these people are extremely poor and use low input low output agricultural systems that lead over time to depletion of soil nutrients.
- Yields of the country's principal food crops are only 20% to 40% of the potential, and are currently stagnant or declining. Low productivity leads to a vicious circle of poverty, resource degradation, and food insecurity.
- Degradation of natural resources, particularly land, is increasing in most regions of the country. Continuous cropping, non-replenishment of nutrients extracted from the soil, erosion by wind and water, and poor land husbandry practices contribute to depletion of the native fertility of soils and depress yields. The long term sustainability of agriculture on these lands is at serious risk. Farmers throughout the country complain of "soil exhaustion" as one of the most important problems they face.
- Deforestation in catchment areas has led to loss of ground cover, causing soil moisture losses and persistent drought. The need for better management of soil and water resources is therefore paramount.
- The volume of activity and performance of rural markets is weak. Any incremental output must be placed at profitable margins, and inputs purchased at competitive prices.
- Reforms over the last decade have created a good foundation for agricultural growth.

1.3.4 Uganda

- Agriculture accounts for 20 per cent of gross domestic product (GDP). It remains important for the structural transformation of the economy through value addition, export growth, and employment.
- Significant untapped potential for agricultural growth remains. Agricultural productivity and commercialization can be increased for most smallholders. A number of interacting factors depress yields (for both crop and livestock production), reduce the profitability of enterprises, and make agriculture uncompetitive.
- Limited use of improved technology, poor infrastructure, lack of business skills in the sector, and poor integration of smallholders, particularly the poor and women farmers, into markets and value chains limit the choice and profitability of enterprises, constraining household incomes.
- Soil erosion and deteriorating soil quality further constrain production growth. Current farming practices threaten soil fertility. Land degradation hotspots where soil erosion and infertility are especially rampant have been identified in the South-western Highlands, Lake Victoria Crescent, the Northwest as well as in the Cattle Corridor.
- Annual losses of nitrogen, potassium**,** and phosphorous in these areas are estimated to be 85, 75, and 10 kilograms per hectare, respectively. Soil erosion is estimated at above 5 tons per hectare per year.

- Rainfall is more variable than in the past, with increased incidence of extreme or more frequent periods of intense rainfall. The frequency and severity of extreme climate events such as heat waves, floods, storms, and droughts are also projected to increase. Droughts, for example, have been more frequent since 1965, and farmers are already keenly aware of this increasing variability

1.4 Related Projects and Programmes

The following enumerates projects and programmes highly relevant to the present programme.

1.4.1 Regional/Basin-wide

Trans-boundary Agro-ecosystem Management for the Kagera River Basin (Kagera TAMP): with funding support from the Global Environmental Fund (GEF), the four countries and other funding partners. Kagera TAMP uses agriculture as the engine for combining productivity improvement and sustainable livelihoods with reversing land degradation, enhancing biodiversity conservation and carbon sequestration across the Kagera river basin and, thereby also contributing to the protection of international waters.

Lake Victoria Environmental Management Programme II: Following the completion of Phase I, Phase II will contribute towards the management and development of the Lake Victoria Basin through strengthening of the regional and national institutions for governance of trans-boundary resources in the basin; and facilitates public and private environmentally friendly investments in the Basin. The EAC/LVBC has received funding for implementation of LVEMP II from IDA Credit of the World Bank, Global Environment Facility (GEF) and the Government of Sweden through SIDA.

1.5 National

1.5.1 Burundi

Agro-pastoral Productivity and Markets Development Project (2010 - 2015): funded by the World Bank and Burundi Government and a continuation of the Agricultural Rehabilitation and Sustainable Land Management Project (2005-2010) and supported by the study, “Breaking the Cycle: **A** Strategy for Conflict-Sensitive Rural Growth in Burundi,” World Bank Working Paper no. 147,.(May 2008). There are three components:

Component 1: Support to agricultural productivity and access to markets.

Component 2: Rehabilitation/development of: (i) marshland irrigation; (ii) protection and conservation of watersheds adjacent to the irrigation schemes; and (iii) tracks within marshlands and rural roads linking marshlands to the communal road network.

Component 3: Coordination, planning, management, monitoring and evaluation, audits, and other operating costs of the Project Coordination Unit (PCU) and other activities necessary for project coordination and management.

Burundi TAMP: Kirundo, Karuzi, Murambvya, Mwaro, Gitega.

1.5.2 Rwanda

Integrated Management of Critical ecosystems (2006-2010): funded by the World Bank, GEF and Rwanda Government. The project consists of following three main components and a fourth Project Management Unit.

- Development of a policy and regulatory framework for integrated ecosystem management;
- Capacity building and institution strengthening for integrated ecosystem management;
- Development and implementation of community-based integrated ecosystem management plans for critical ecosystems; and
- Project management, monitoring and evaluation, and information dissemination.

These three categories of activities are interlinked and are mutually reinforcing, and complementary to the baseline Rural Sector Support Program (RSSP). Although some of the activities will be implemented by different implementing government units, they complement the activities of the baseline program by contributing to the objectives of conservation and sustainable use of wetlands.

Land Husbandry, Water harvesting and Hillside Irrigation Project (2009-2014): funded by the World Bank, USAID and Rwanda Government. The Project uses a modified watershed approach to introduce sustainable husbandry measures for hillside agriculture on selected sites, as well as developing hillside irrigation for sub-sections of each site. The Project envisions the production of high valued horticultural crops with the strongest marketing potential on irrigated portions of hillsides, and the improved productivity and commercialization of rain fed crops on the rest of the site catchment-area hillsides. The project will use participatory land-use processes to promote high stakeholder involvement.

Rural Sector Support Project (3 phases: 2001-05; 006-11; 2012 -15): funded by the World Bank, GEF and the Government of Rwanda. The primary objective of the RSP is the conservation and sustainable use of natural resources through the integrated management of critical ecosystems, with emphasis on:

- Wetlands/watershed management;
- Dry land ecosystem management; and
- Reducing pressure on the Protected Areas through community-based management of the buffer zones (which presently only exist around Nyungwe Forest) and areas adjacent to the protected areas (mountain ecosystems).

Rwanda TAMP: Rulindo, Nyagatare, Kayonza, Kamonyi, Bugesera, Kirehe.

1.5.3 Tanzania

Agricultural sector Development Project (2006 -2012): Multi-donor. The project objectives are: (i)to enable farmers to have better access to and use of agricultural knowledge, technologies, marketing systems and infrastructure, all of which contribute to higher productivity, profitability, and farm incomes; (ii) to promote agricultural private investment based on an improved regulatory and policy environment.

Tanzania TAMP: Missenyi, Bukuba Rural, Karaqwe, Ngara.

1.5.4 Uganda

Agricultural Technology and agri-business and Advisory Services Project (2011-2015): funded by the World Bank, GEF and Uganda Government. The Project will enhance agricultural productivity, diversification and value addition, and promote service delivery and agribusiness development. The project will also promote Sustainable Land Management (SLM) practices, strengthen the institutional capacity of NARO, NAADS, and MAAIF, modernize information technology at NARO and NAADS, and employ new ICT tools to promote SLM and strengthen MAAIF's institutional capacity to coordinate practice and policy on land degradation and climate risks. This will enhance the environmental resilience and sustainability of agricultural landscapes and to generate local and global environmental benefits in addition to improved agricultural yields.

Uganda TAMP: Kabale, Ntungamo, Mbarare, Isingiro, Kiruhura, Rakai.

1.6 Programme Description

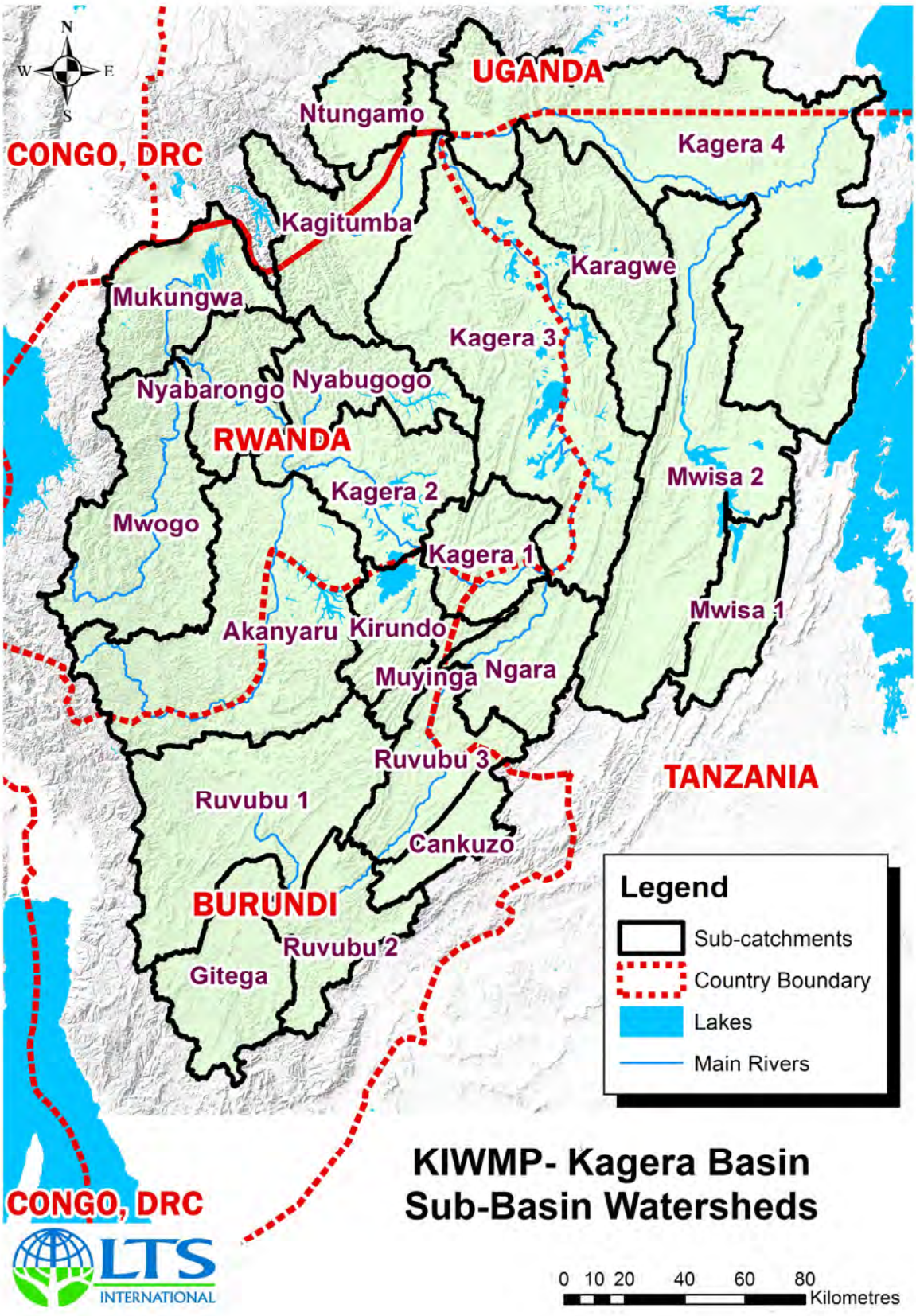
1.6.1 Programme Area

Located in the Great Lakes region of Africa, the Kagera River drains a basin area of 59,800 km^2, distributed among Burundi (22% of the basin area), Rwanda (34%), Tanzania (34%) and Uganda (10% of the basin area; see DWD/WWAP, 2005). The Kagera River provides the largest volumetric contribution to Lake Victoria, which is the second largest freshwater lake in the world (Sene and Plinston, 1994).

The western boundary is formed by a narrow ridge rising from 2,000 to 4,400masl. To the east of the ridge is a deeply dissected plateau extending some 100 kms between 1,500 and 2,000masl. Below 1,500masl are undulating plains.

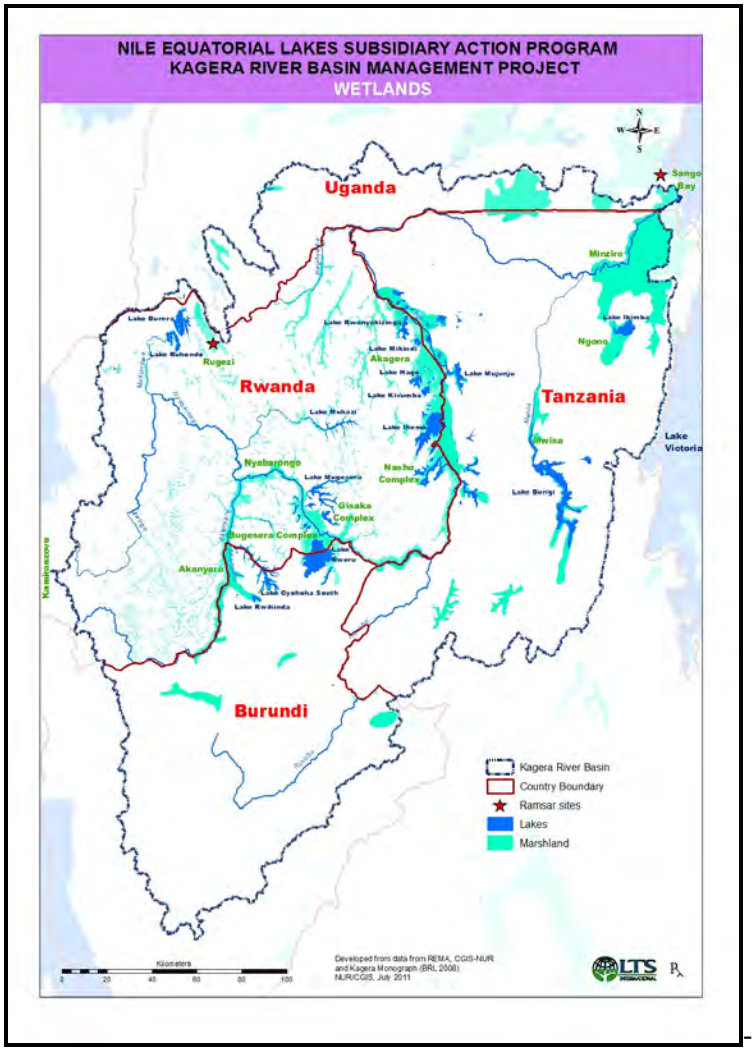
Within the Kagera sub-basin, 22 sub-watersheds can be delineated (Map 1). These have been taken as the basis for the characterisation of the sub-basin within the KIWMIP.

Map 1. Kagera sub-basin: Sub-watersheds



The Kagera sub-basin includes many lakes and marshlands (Map 2). The lakes and marshlands attenuate river flows, and the Kagera has a high base-flow component resulting from the water storage in these lakes and marshlands (Sutcliffe and Parks, 1999). The marshlands along the river valleys are inundated during floods in the peak rainfall months of April and May, whilst the lowest water levels are in August-October. Marshlands cover 2.9% of the area of the Kagera basin and open water bodies another 1.6%, which does not reflect their significant importance to the sub-basin as a whole.

Map 2: Kagera sub-basin: Principal Wetlands



The Kagera sub-basin is underlain by metamorphic rocks of the Precambrian Karagwe-Ankolean series. Geologically recent uplift and tilting have determined the basin's topography which is marked by ridges running in a generally south-west to north-east direction.

The most extensive soil types within the located within the central parts of the sub-basin are Ferralsols. These are derived from deeply weather acidic rocks and thus of low fertility, acid and increasingly with aluminium toxicity. In the northeastern uplands on steep slopes are Leptosols, which are shallow and often stony. Being located on steep slopes they are especially susceptible to erosion and being shallow has low water holding capacity.

Precipitation exceeds 2000 mm/year in sub-watersheds toward the west, and in the east is over 1800mm/year. The sub-watersheds with the lowest precipitation are in the north and the south-east. However, potential evapo-transpiration (PET) exceeds rainfall over most parts of the sub-basin except for a narrow strip along the western higher parts on the Nile-Congo Divide.

The areas of dominant landcover types are shown in table 1. Very intensive agriculture and settlement with gardens are the most extensive landcover types covering some 52.3 percent of the sub-basin. This is mainly located in the central and western parts of the sub-basin at higher latitudes and in areas with higher rainfall. Grassland covers some 25.1 percent and is found mainly in the drier central and eastern parts of the sub-basin. Closed and Open forest are now confined to just 2.1 percent of the area.

Table 1.Landcover/Land use in the Kagera sub-basin (ha and %)

Landcover Type	Hectares	Percent of Total
Grassland	1,481,191	25.1
Intensive agriculture	1,468,761	24.9
Settlements and gardens	1,154,047	19.5
Bare Soil	417,175	7.1
Swamp and wetland	327,437	5.5
Settlements	307,669	5.2
Intensive agriculture and bare soil	161,297	2.7
Lakes and rivers	111,456	1.9
Urban areas	107,637	1.8
Closed Forest	87,331	1.5
Scrub	83,869	1.4
Forest plantations	81,616	1.4
Estate crops	36,403	0.6
Open Forest	35,915	0.6
Intensive cultivation - degraded	16,961	0.3
Degraded Grassland	11,839	0.2
Shifting cultivation	6,870	0.1
Wetland agriculture	5,481	0.1
River bed	911	0.0
Total	**5,903,865**	

The protected areas in the Kagera River basin include: 4 National Parks, 3 Game Reserves, 1 Game Controlled Area, 3 Nature Reserves and 21 Forest Reserves. Some of the protected areas have been reported to be severely affected by human activities like cultivation, bush fires, settlement creation, poaching / hunting and over-exploitation of timber, fuel wood and charcoal and medicinal plants (NBI, 2001).

Several distinct forms of degradation exist in the sub-basin, and certain other factors interact with the historical degradation to exacerbate conditions for the basin population. Thus:

The sub-basin has been heavily deforested already, especially in its upper reaches in much of Burundi and Rwanda. In combination with the introduction of (mainly subsistence) agriculture on land which is often strongly sloped, this has created a range of problems, including soil loss in particular.

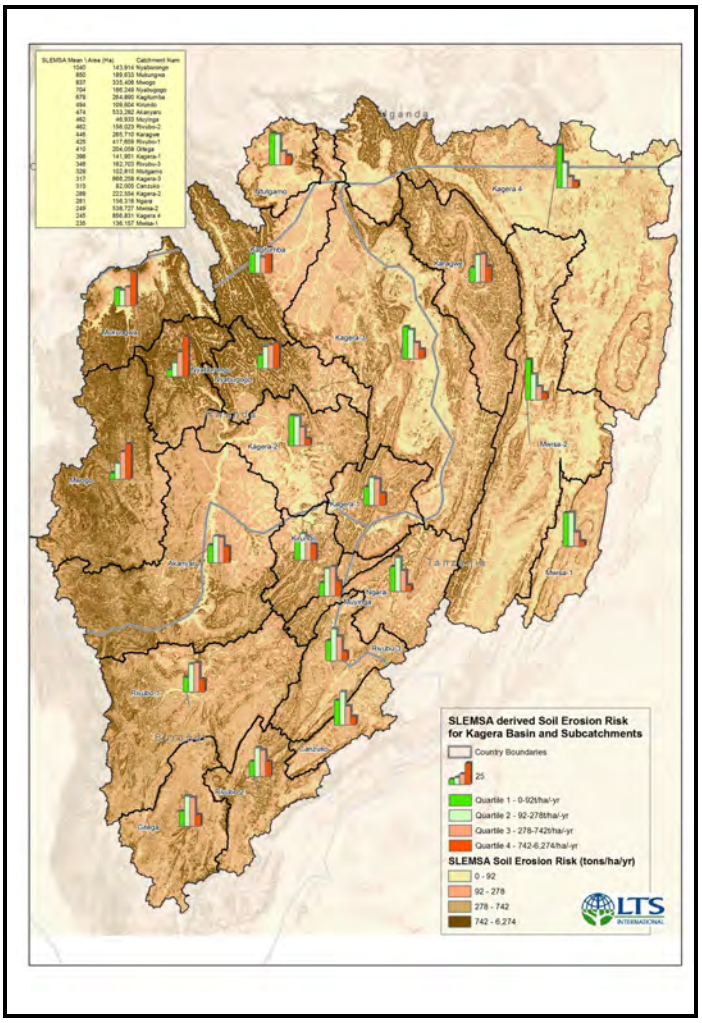
The loss of soils has greatly enhanced the turbidity of the surface water systems, and this in turn has led to negative effects on fisheries and hydropower potential. The

poor levels of sewage treatment in the sub-basin as a whole have given rise to a concurrent nutrient enrichment of the surface waters, and this has created eutrophic conditions, with the heavy growth of plants such as the water hyacinth. Wetlands in the sub-basin have come under significant pressure, and considerable areas of wetland have already been lost or degraded.

Two key factors have driven much of the degradation observed to the present time in the Kagera sub-basin. The first is population growth, which remains high for all four of the Basin States and creates continuing and increasing pressure on the natural resource base. The second factor relates to land tenure, which is problematic throughout the sub-basin and leads inevitably over time in many areas to the farming of smaller and smaller plots of degraded land, in a subsistence fashion.

The overall distribution of soil erosion risk across the sub-basin is shown in Map 3. The highest risk is found on the cultivated areas along the montane ridge and foothills forming the western boundary of the Sub-watershed. The areas of Alisols and Ferralsols are at the highest risk because of their shallowness (Alisols) and low fertility (Ferralsols). Areas of very intensive cultivation based on small hedged homestead fields and extensive banana groves are at less risk, whilst those areas with large open fields with no hedges are at the highest risk.

Map 3. Soil Erosion Risk



1.7 Programme Background

Recognizing the need to develop the Nile River in a cooperative and sustainable manner, the Riparian Countries established in 1999 the Nile Basin Initiative (NBI) through their Council of Ministers of Water Affairs (Nile-COM). The NBI started the cooperative development process by developing a Strategic Action Program. It comprises two programs: (i) the Shared Vision Program (SVP) of basin-wide technical assistance projects, and (ii) Subsidiary Action Programs (SAP) of investment programs at the sub-basin level. There are two SAPs: the Eastern Nile Subsidiary Action Program (ENSAP), which includes Ethiopia, Egypt and Sudan and the Nile Equatorial Lakes Subsidiary Action Program (NELSAP), which includes Burundi, DR Congo, Kenya, Rwanda, Tanzania, Uganda, and the downstream riparians Egypt and Sudan. The present Programme will form part of NELSAP.

The KIWMIP aligns with NELSAP primary objectives of poverty reduction, reversal of environmental degradation and economic development. The project meets the additional project selection criteria proposed by NELTAC (NELSAP, 2006): (i) defined goals and anticipated measurable results; (ii) demonstrable benefits at a regional level; (iii) ability to be up-scaled; (iv)demonstrable sustainable use of water

resources; (v) commitment to significant public consultation and stakeholder involvement; and (vi) economic and financial viability and sustainability.
It also contributes to the East African Countries' Vision and Strategy Framework for Management and Development of the Lake Victoria Basin, namely "*a prosperous population living in a healthy and sustainably managed environment providing equitable opportunities and benefits*".

Finally, it is consistent with the national development strategies that are the Poverty Reduction Strategy Paper (PRSP) in Burundi, Economic Development Poverty Reduction Strategy (EDPRS) in Rwanda, the Poverty Reduction Strategy Paper (PRSP) in Tanzania, and the Poverty Eradication Action Plan (PEAP) in Uganda. These strategies emphasize healthy ecosystems, poverty reduction as well as sustainable economic growth and identify degradation of natural resources as a key constraint to attainment of results. This Programme will also support the strengthening basin level water resource management and capacity building.

1.8 Programme Rationale

The Kagera River sub-basin economies are based mainly on agriculture and, in light of continued high populations densities and growth rates, are unsustainable without diversification. It will be important to make them less dependent on traditional cash crops like coffee, tea and cotton. Other ventures to diversify the economies are being explored. They include mining, tourism, services and production of non-traditional products.

On the positive side is the availability of natural resources, improving economic policies, planning focussed on poverty reduction, improving governance and external financing. The positive factors that have influenced economic growth should be sustained to ensure steady growth. The demonstrated links between water management and development and economic development and poverty reduction mean that there is a need for actions that make water more accessible to poor people. The evolution of an effective trans-boundary cooperation framework in the Kagera Sub-Basin will be an important factor that could influence economic sustainability.

1.8.1 Agriculture and Land Resources

Some 85 per cent of the population in the sub-basin are directly dependant on agriculture. The agricultural sector produces more than 40% of the GDP of the riparian countries and generates around 40% of their total export revenues.

In the sub-basin the combination of rapid population growth with limited availability of agricultural land has resulted in the following set of problems: (a) increasing labour intensity and declining labour productivity in the agricultural sector; (b) strong subsistence orientation of agricultural production, reinforced by weak commodity and labour markets; (c) the resulting pressure on local off-farm employment and wages; and (d) declining incomes and a fragile food security situation. These problems reinforce each other as limited market orientation reduces the incentives for technology innovation, which is necessary to raise labour productivity and incomes.

The relative lack of market orientation among sub-basin farmers is due as much to production constraints as it is linked to constraints on the demand side. These constraints emanate from: (i) production conditions which encourage household consumption over market transaction, given the low opportunity cost of labour and the fact that most food crops can be grown in many parts of the country; (ii) a

production structure which includes very few cash crops that are grown over wide areas and, therefore, fails to stimulate a broad supply of marketing services or foster the integration of smallholders into the market process; (iii) a low rate of urbanization, which means that there are few significant deficit areas to generate the excess demand to stimulate supplies from potential surplus areas; and (iv) insecure access to markets, which undermines trading as a reliable measure to cope with food insecurity and encourages a tendency to autarchy as a rationale response.

In light of the present high population densities continued reliance on subsistence agriculture does not create an appropriate basis for the evolution of future agricultural production in the basin. Producers' strategies rarely consider the internal and external market context. However, the evolution of present sub-regional and international economic context (e.g. the broadening of membership within the Eastern African Community to include Rwanda and Burundi) will likely mean more and more open regional markets.

A recent analysis by the International Food policy research Institute (IFPRI) of the agricultural development potential of the East and Central African (ECA) Region as a whole (Onamo et al., 2006) concluded that achieving GDP growth rates required to meet Millennium Development Goals (MDG's) poverty reduction targets would imply threefold increases in agricultural growth rates. It also noted that:

- Whereas growth in export sub-sectors is often put forward as a pathway out of poverty, for countries in ECA, the IFPRI analysis revealed that the largest poverty reductions would come from growth in subsectors for which demand is greatest within the region—such as crop staples, livestock products, oilseeds, and fruits and vegetables.
- Increasing productivity in these subsectors would directly benefit the great majority of ECA's numerous small farmers by easing key resource constraints in the activities to which they devote most of their resources.
- Fruits and vegetables, beef, oilseeds, and maize emerge as commodity subsectors in which growth would yield gains that were both large and widespread.
- Balanced growth strategies featuring growth in several agricultural subsectors lead to higher overall economic growth than does that featuring growth in a few sectors. However, agricultural productivity growth alone will be insufficient to meet MDG poverty reduction targets. As indicated above, growth in non-agricultural sectors and improvements in market conditions will also required.

1.8.2 Wetlands and Water Resources

There are complex relationships between poverty and the environment in each of the four countries. Poverty is both a cause and a resultant of environmental degradation (Scherr, 1999). All four country Poverty Reduction Strategies recognize these complex linkages.

The Kagera River sub-basin provides potential for economic development due to its abundant wetland, water and natural vegetation ecosystems which provide important socio-economic benefits to its people. Wetlands are of value because they play an important role in maintaining environmental quality and supporting biodiversity. However, sustainable development and management of wetlands can add considerable value to the "goods" and "services" that they provide, but care is needed because inappropriate use undermines long-term benefits.

In Rwanda there are at least 850 wetlands with a total area of 278 536 ha, which is 85 per cent of the total area of wetlands in the sub-basin (327,437ha). In Rwanda over 60% is already cultivated comprising some 450,000 land parcels supporting 300,000 households (MINIRENA GIS analysis 2007, based on MINAGRI data). With good alluvial soils these valley bottom lands are some of the most fertile and productive in the country.

Because of the tremendous population pressure, there is hardly any undeveloped land outside the Protected Areas and wetlands. The rural population has had no choice but to cultivate increasingly larger areas of these wetlands, which has been done in a haphazard manner with little regard for ecological balance and has caused adverse environmental impacts. There have also been numerous reports about changes in micro-climates of some of the watersheds after the natural vegetation has been cleared.

Even the large wetland areas, thought to be of international significance because of the important ecological role they play in water regulation and as important habitats and sources of biodiversity, are under threat. These areas, although not formally protected as reserves, were considered to be somewhat impenetrable because of their size and inaccessibility. Recent events, however, have led to encroachment into the fringes of these wetlands and, in some cases, incursions into larger areas that were previously considered inaccessible. If these developments continue at their current pace and unregulated manner, in addition to the tremendous loss of biodiversity, they pose a serious threat to national and international water resources.

2. Institutional Arrangements and Programme Administration

2.1 Coordination and Programme Implementation

2.1.1 NELSAP and LVBC

The Lake Victoria Basin Commission (LVBC) was created under the initiative of the EAC, and is now responsible for coordination of natural resources and environmental management, water resources management and water and sanitation. Under the NBI, the NELSAP was created to focus on the Lake Victoria basin sub- basin of the Nile River basin. NELSAP has a water resources management and development mission to facilitate the countries in joint implementation of projects in order to promote social economic development and reverse poverty.

The possible options for formalizing a stronger and more permanent cooperative institutional framework for watershed management in the Kagera River Basin have been previously analyzed by BRL Ingenierie in the production of the Kagera Monograph (2008). The preferred institutional option, which the Consultant agrees with, includes the following components:

- *The LVBC to provide the overarching legal and institutional framework, being the decision-making entity for the projects and programs within the basin. LVBC would be tasked with developing a planning and scheduling tool for the whole of the Lake Victoria Basin. The mechanism would provide the Kagera and other sub-Basins with guidelines and the main trends of the basin's management policy.*

- *A Kagera River Basin Management Unit would be established under the existing LVBC Secretariat. It would be in charge of developing and planning for the Kagera River basin, but in the overall context of the plans and activities of the LVBC. The Unit would be coordinated by a*

- *Program Manager working under the LVBC Secretariat and reporting to its Executive Secretary. A Sectoral Committee for the Kagera River basin representing appropriate government and civil society bodies, user associations, etc. (to be discussed and agreed) would provide overall direction.*

- *The NELSAP would continue as a Program Implementation Unit until under the NBI. NELSAP would to continue to provide links with the broader NBI initiatives until such time as a Nile River Basin Commission is established. NELSAP projects and programs could be implemented through the overall guidance or in association with the projects and programs of the LVBC. The details of the working relationships between the NELSAP and the LVBC would need to be studied, discussed and agreed in the context of the evolving institutional relationships in the Nile River basin region.*

The overall arrangement as proposed by BRL Ingenierie is depicted below in Figure 2 (Kagera Monograph, 2008).

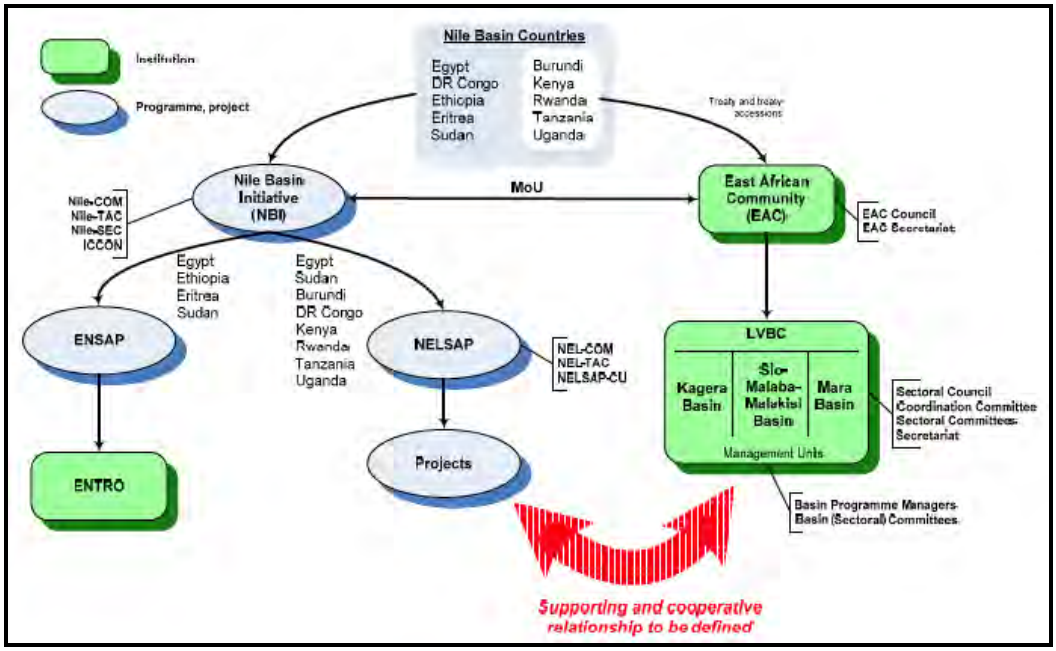


Figure 2: Regional Arrangements for Watershed Management (Kagera Monograph, 2010)

2.2 Institutional Arrangements for Programme Implementation

Based on (i) the outline for the regional institutional framework for watershed management in the Kagera River Basin, (ii) the proposed criteria for project function, and (iii) the need to address nation and district level issues (Section 2.5.2 of Annex E: Institutional Analysis), a general framework for project implementation is proposed below in Figure 3.

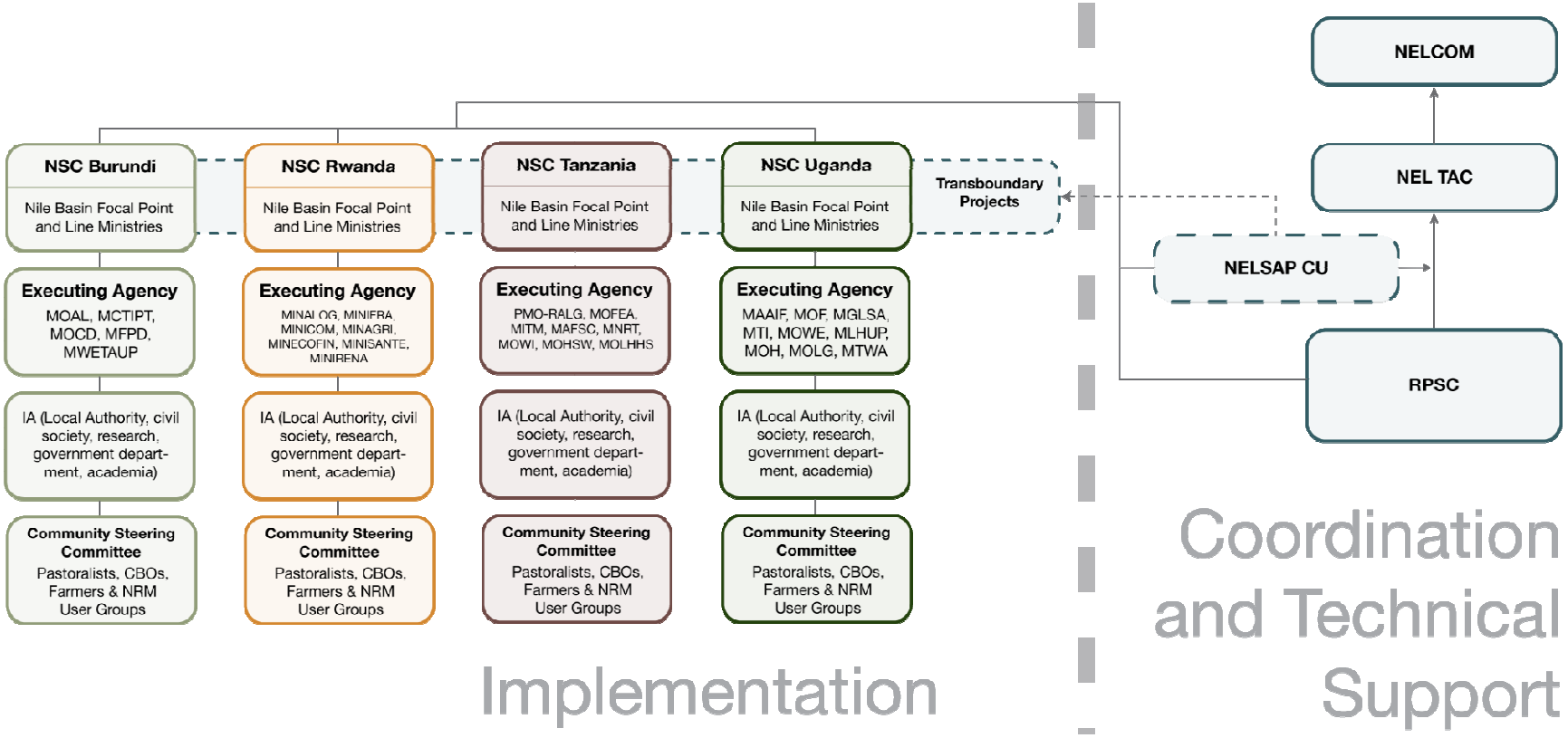


Figure 3: General Institutional Arrangements for Watershed Management Projects in the Kagera Basin

The roles of the different components are described below:

- **NELSAP CU/PMU** will be the overall coordinator of the KIWMP of the watershed programme. Their role will be:
  - To mobilise resources for the detailed design and implementation of the watershed/wetland programmes,
  - To constitute the Regional Steering Committee
  - Technical support to National Steering Committees
  - Capacity building across countries as provide for under the capacity building component of the KIWMP.
  - Monitoring and evaluation of the programme
  - Co-supervision of programme implementation
  - To coordinate with LVBC who have similar mandates under the EAC in order to enhance complementarity and harmonisation of activities.
  - To ensure regional coordination.
  - Donor Reporting.
  - To facilitate lesson learning across the countries.
  - Co-implementation of the trans boundary projects in liaison with the in country implementing agencies.
  -

- **Regional Project Steering Committee** will be directly responsible for:
  - Ensuring that country programmes and the subprojects are aligned to regional policies (refer to section 9.1 and Annex E)
  - Reviewing and approving all costs associated with the projects in various countries.
  - Managing and resolving political and operational issues brought to their attention by the National Steering Committees.
  - Coordination with other projects and programs with these efforts (together with NELSAP).
  - Obtaining the support and cooperation of all stakeholders in trans boundary projects.
  - Developing mechanisms that will deliver the trans boundary projects
  - Monitoring trans boundary projects

- **National Project Steering Committee**: This will be comprised of technical ministry representatives involved in the implementation of sub-projects, NELSAP Country Focal Point, civil society representatives (e.g. Nile Basin Discourse), other implementing bodies (e.g. private sector, academia, local authorities etc.). They will be responsible for:
  - Ensuring that all project activities are aligned with national policy and legislation.
  - Reviewing and approving all planned national activities planned.
  - Assisting in the identification of the relevant Executing Agencies.
  - Obtaining the support and cooperation of national governmental and non-governmental stakeholders in trans boundary projects.
  - Communicating status and needs to all stakeholder agencies.

- Providing information to the Regional project Steering Committee on project progress as measured against selected indicators.
- Integrating national (and district/county) level technical issues, advice and assessments in relation to project implementation.
- Monitoring and evaluation of in country programmes.

- **Executing Agency (EA)**: This will be the government ministry through whom donors of various projects will channel their funding in country. The ministry will be in charge of:
  - Establishing a PMU which will coordinate all the country's sub-projects.
  - Selecting and contracting the implementing agencies (IAs) for the sub-projects.
  - Reviewing and approving sub-project work plans.
  - Holding regular progress meetings with the IAs.
  - Monitoring expenditure and technical outputs.
  - Ensuring stakeholder involvement from community level to national level.
  - Coordinating IAs.
  - Ensuring lesson learning across different sub-projects.
  - Procurement and leading supervision of project contractors, consultants and other service providers.

- **Implementing Agency (IA):** The IA can be a government technical department or institution, local authority, research institution or civil society (CSO) which will be contracted by the EA, to deliver various sub-projects. The local authority may be a district or county government whilst CSOs are non-governmental agencies who can also be contracted by the EA. All IAs will be responsible for:
  - Developing the project implementation plan.
  - Developing M&E systems for the sub-projects following the guidance given by the M&E framework in each sub-project fiche.
  - Developing participatory tools for community-level monitoring and evaluation.
  - In liaison with the EA contracting service providers for the sub-projects e.g. EIA specialists where the need arises, staff, etc.
  - Establishing local authority/community steering committees.
  - Sensitisation and mobilisation of communities and other beneficiaries.
  - Reporting progress to the EA on a quarterly basis.
  - Ensuring that district level policies and procedures and systematic communication measures are in place to obtain broad-based community inputs.
  - Identifying problem areas of project implementation.
  - Developing a communication strategy.
  - Communicating status and needs to all stakeholder agencies/groups using the stakeholder engagement guide (See Annex D)

- **Community Steering committee will include (CBOs, farmers, pastoralists, natural resource management user groups e.g. water user committees, watershed committees, self-help groups e.g. women/youth groups, community forest associations)**: Responsibilities will include:
  - Representation of the interests of community groups in monthly progress report meetings with the IA
  - Directly mobilizing resources for project implementation when required.

- Advocating the needs of marginalized communities
- Where households are involved selection of households through community based targeting.
- Involvement in the M&E of project outputs
- Giving suggestions that will enhance implementation to the IA
- Conflict management
- Capacity building and creation of awareness amongst community members
- Monitoring progress at household/community level.

2.3 National Institutions and Programme implementation

National Ministries and line Agencies that will be involved in project implementation, with representation on the National (and Regional Steering Committees) are shown in Table 2.

Table 2. National Ministries/Agencies Required for Implementation of projects to reduce Environmental Degradation in the Kagera Basin

Project Type	Burundi	Rwanda	Tanzania	Uganda
Potable Water and sanitation	Ministry of Water, Environment, Territorial Administration and Urban Planning (MWETAUP); The Directorate General of Rural Water and Electricity (DGHER); Régie de Production et de Distribution de l'Eau et de l'Electricité (REGIDESO)	Ministry of Infrastructure (MININFRA); Ministry of Natural Resources, Land, Forests, Environment and Mining (MINIRENA)	Ministry of Water and Irrigation (MoWI); Division of Environment, Vice-Presidents Office (DoE-VPO); National Environmental Management Council (NEMC)	Ministry of Water and Environment (MWE); Ministry of Health; Directorate of Water Development (DWD); National Water and Sewerage Corporation (NWSC); Water Resources Management Department (WRMD)
Soil and Water Conservation	MWETAUP; Department of Soil Protection and Swamp Management; Ministry of Agriculture and Livestock	MINIRENA	MoWI; DoE-VPO; NEMC;	Water Resources Management Department (WRMD)
Irrigation and Drainage		MINIRENA; Ministry of Agriculture & Animal Resources (MINAGRI)	MoWI; Ministry of Agriculture, Food Security and Cooperatives (MoAFSC); Ministry of Livestock and Fisheries (MoLFD); National Irrigation Commission (NIC)	Ministry of Agriculture, Animal Industries and Fisheries (MAAIF); Water Resources Management Department (WRMD)
Wetlands		MINIRENA; Rwanda Environmental Management Authority (REMA)	MoWI; Ministry of Natural Resources and Tourism (MNRT)	National Environmental Management Authority (NEMA); Wetlands Management

Project Type	Burundi	Rwanda	Tanzania	Uganda
				Department (WMD)
Support to Agricultural Activities	MWETAUP; National Institute for the Environment and the Conservation of Nature (INECN)	MINAGRI; National Land Centre (NLC); Rwanda Agricultural Board; Rwanda Animal Resources Development Agency (RARDA); Rwanda Horticultural Development Agency (RHoDA)	MoAFSC	Ministry of Agriculture, Animal Industries and Fisheries (MAAIF); Water Resources Management Department (WRMD)
Forestry		MINIRENA; NLC; Rwanda Natural Resources Authority (RNRA)	MNRT; Tanzania Forest Service (TFS); The Tanzania Forestry Research Institute (TAFORI); National Tree Seed Program (NTSP)	National Forest Authority (NFA); District Forest Services (DFS); National Forest Resources Research Institute (NaFORRI)
Energy and Hydropower	The Ministry of Energy and Mines (MEM)	MINIFRA	Ministry of Energy and Minerals (MEM); MoWI	Ministry of Energy; Ministry of Water and Environment (MWE)
Fisheries and Aquaculture	MWETAUP	MINIRENA	MoAFSC; MoLFD	Ministry of Agriculture, Animal Industries and Fisheries (MAAIF); Fisheries Department (FD)

Project Type	Burundi	Rwanda	Tanzania	Uganda
Environmental resources	MWETAUP	MINIRENA; REMA	DoE-VPO; NEMC;	National Environmental Management Authority (NEMA); Ministry of Water and Environment (MWE); Directorate of Environmental Affairs (DEA)
Mining	The Ministry of Energy and Mines (MEM)	MINIRENA; Rwanda Geological and Mines Authority (OGMR)	MEM	National Environmental Management Authority (NEMA)
Kagera Basin Organisational Activities	MWETAUP	MINIRENA; REMA; Ministry of Local Government, Good Governance, Community Development & Social Affairs (MINALOC)	DoE-VPO; NEMC;	National Environmental Management Authority (NEMA); Ministry of Water and Environment (MWE)

2.4 Participation and Stakeholder Involvement

Significant Programme components aim to broaden and deepen stakeholder involvement in watershed management. Programme implementation will ensure participation of all relevant stakeholders, including Ministries of Water, Agriculture, and Forestry, NGOs, educational institutions, local and traditional communities, and private sector organizations. Local stakeholders, especially communities and smaller NGOs/CBOs will be included. This will be particularly important in the impacts assessments undertaken at the local level and in the Hydro-Ecological-Livelihoods Study.

A wide range of stakeholders is also expected to be involved in and benefit from the capacity building and institutional strengthening component through information and knowledge exchange.

2.5 Donor Coordination and Financing

Section C will be discussed with NELSAP in the context of their planned approach to donor engagement and coordination for the KIWMP.

3. Programme Implementation

3.1 Objective

This Programme will strengthen riparian cooperation and coordination through trans-boundary activities including developing a programme of Country-level Integrated Watershed Management Investment Projects, a programme of Wetlands Management Projects and providing support to Capacity Building and Institutional Strengthening. The specific objective of the wetlands management plan is two-fold: firstly, to maintain and develop existing wetlands and, secondly, to restore and improve some of the lost areas of wetlands.

3.2 Approach

The Watershed Management Component would provide highly focused inputs to specific areas under threat in the sub-basin. Some of these projects will specifically address the need to improve agricultural productivity, and this would build on and extend the work of TAMP and RATP and would include operational support including supplementary irrigation, crop selection, support to extension services, crop insurance and marketing.

The Wetlands Component comprises an integrated watershed and wetland management plan based on an analysis of the requirements of the various wetland ecosystem functions for conservation, development or restoration scenarios, guided by current international best practice. As a result, the management plan would be both rigorous and unbiased, and provide a robust platform from which to take the process further.

To optimise project efficiency and effectiveness, the projects have been clustered and rationalized to form a set of preferred projects according to their relative contributions to increasing economic productivity and increased water management efficiency, through rationalizing the stakeholders' project suggestions.

The first grouping is into:

- Country-based Projects, and
- Trans-boundary Wetland Projects

Country Projects are sub-divided into First Priority and Second Priority Projects. Priorities were established by Country-level Stakeholders at a Project Selection Workshop from a list of potential projects. These projects were identified during the watershed and wetlands

stakeholder consultations and screened according to a list of selection criteria determined during the analysis.

3.3 Programme Components, Sub-components and Activities

3.3.1 Components and Sub-components: An Overview

The Programme will support continued cooperation in trans-boundary watershed management by supporting activities in the following areas (Table 3):

(1) **Programme Management and Administration**: Establishing the Programme Steering Committee, Programme Coordination Unit and hiring national programme Coordinators, Preparing KIWMP Phase 2.

(2) **Country-level Integrated Watershed Management Investment Projects:** Preparing Project Implement Plans, obtaining funding and implementing a first round of prioritised Watershed Management and Wetlands Management investment projects from the Project Identification Fiches (PIF's); and preparing, obtaining funding and implementing a second round of prioritised watershed management and Wetlands Management projects.

(3) **Trans-boundary Wetlands Management Investment Projects:** Preparing PIP's, obtaining funding and implementing Trans-boundary Watershed Management Investment Projects from the Project Identification Fiches (PIF's).

(4) **Capacity Building and Institutional Strengthening:** Implementing a programme of Policy Analysis; of Basin-wide and Country level capacity building in Integrated Watershed Management; of Programme Coordination Workshops; and the Dissemination of Lessons Learnt.

Table 3: Summary of Components, Sub-components and Activities

Country	Project Title
Burundi	Integrated Watershed Management, Akanyaru Sub-watershed
Burundi	Stabilisation of Banks of Watercourses and Hillside Afforestation to reduce erosion and siltation, Ruvubu-1, Ruvubu-2 and Gitega Sub-watersheds
Burundi	Hill irrigation and rainwater harvesting in Cankuzo, Karuzi, Kirundo, Muyinga and Ruyigi Provinces
Burundi	Protection of Ecosystems through Environmental Flows, Ruvubu National Park.
Burundi	Alternative Livelihoods for Wetland Communities thru' Ecosystem Approach in the Nyamuswaga Wetlands.
Burundi	Assessing Impacts on Wetlands of Water Harvesting and Development on Groundwater Resources.
Rwanda	Soil & Water Conservation, Soil Improvement, Improved Fodder Production and Re- forestation, Akanyaru Sub-watershed, Nyaruguru District
Rwanda	Soil Conservation, Rainwater water harvesting, small-scale irrigation, Fruit and Fodder trees. Kagitumba Sub-watershed
Rwanda	Sustainable fishing at Lake Muhazi.
Rwanda	Protection of Wetland Ecosystems thru' Maintaining Environmental Flows.
Rwanda	Artificial wetlands for sustainable urban drainage
Tanzania	Soil Conservation in Karagwe and Ngara Districts
Tanzania	Protection and Conservation of Water Sources in Muleba and Biharamulo Districts
Tanzania	Supply of potable water to 15 villages, Kayanga, Bunazi and Kyaka Townships in Karagwe and District.
Tanzania	Flood Management in the Bigomba and Burugi Valleys: Ngara, Biharamulo & Muleba Districts.
Tanzania	Robust evidence base to inform management decision-making

Country	Project Title
Tanzania	Feasibility Study for Fisheries in Karagwe District, + Fish Ponds
Uganda	Land Rehabilitation in Kikagate Sub-County, Isingiro District
Uganda	Integrated Water Resource Management (IWRM) project, Kakuuto County in Rakai District
Uganda	Integrated Water Resource Management Project, Maziba catchment, Kabale District.
Uganda	Robust Evidence Base for informed Wetlands Management Decision Making
Uganda	Assessment of Potential for Payment for Environmental Services from Polluting Sources, Kagera-4 Sub-watershed
Uganda	Soil Conservation and Rehabilitation, Sustainable Wetlands Management and Alternative Livelihoods for Wetlands Communities through Ecosystem Approach, Ntungamo and Kagitumba (North) Sub-watersheds

3.4 Detailed Programme Components

3.4.1 Component 1. Programme Management and Administration

Total funding: US$ 34,149,000

It will be necessary for NELSAP-CU to provide a range of administrative support functions to the riparian governments to enable the Component 2 Country projects to be financed, administered and monitored. NELSAP-CU will administer an M&E sub-component under this Component which will undertake country programme review missions after two years and final evaluation mission five years. This Programme is the 1st Phase of a long-term Kagera sub-basin Integrated Watershed Investment Programme. Funds are included to develop a five year Phase 2 of this Programme. In addition NELSAP-CU will manage a policy and capacity development and coordination Component that serves to foster trans-boundary initiatives and collaborative skill development. It will also provide for building institutional capacity at the national level by supporting four National Programme Coordinators (NPC's). The NPC's will interact between the NELSAP-CU's Thematic Specialists and national individuals, institutions and organizations involved in implementing all of the Programme's components within their respective countries.

Sub-Component 1.1 Programme Management

This component will support the establishment and the operational activities of the Programme Steering Committee. The programme will support meetings of the Committee. The Committee is expected to meet at least annually and may circulate among the four Countries. The Steering Committee will be composed of the Watershed Management Focal Point from each participating country. Any relevant donor partners, the World Bank, and other appropriate parties will be invited as observers to the meetings. It will be alternately chaired by the host country member of the Steering Committee. NELSAP- CU will provide secretariat support to the Committee.

The Programme will be administered by NELSAP-CU's KIWMP-PMU. The PMU will administer the cycle of project development resulting in four country programmes being financed and implemented and also a basin wide Policy, Training and Capacity Development Component. The PMU will comprise watershed management and wetlands management Specialists with Secretarial support. It will be supported by four National Project Coordinators and their respective National Working Groups.

The Programme will support institutional strengthening at the National Level by supporting four full-time National Programme Coordinators (NPC's). The NPC's will interact between the Regional Thematic Specialists and national individuals, institutions and organizations involved in implementing all of the Programme's components within their respective countries.

The NPC's will provide a critical link between NELSAP and the national and international specialists and organizations involved in implementing the various Programme components within the respective countries. The NPC will be a full-time position that is Programme-funded and competitively hired with the active involvement of the concerned Ministry. The NPCs will be housed in a Ministry to be selected by each Country. They will be supported by a National Working Group (NWG) comprising representatives from a wide range of concerned Stakeholders.

Sub-component 1.2 Round One Watershed Management and Wetland Management Projects: Fund Sourcing and Implementation

The KIWMP has identified and prepared Project fiches for a number of potential follow-up Country watershed management and wetlands investment projects. The Programme will support NELSAP in seeking financing sources and coordinating their implementation. Costs include support to the Watershed Management Programme Coordinator.

Sub-Component 1.3: Establish and Maintain a Monitoring, Reporting and Evaluation System

The monitoring, reporting and evaluation process is an integral element of the Integrated Watershed Management Investment Programme. This process will provide information on whether the Programme interventions are successful in achieving the development objectives and whether implementation is proceeding in accordance with the plan. The process will integrate the measurement and monitoring of *both development and performance indicators.*

Sub-component 1.4 Preparation of Second Round Watershed Management and Wetland Management Projects: Cost-benefit analysis, Fund Sourcing and Implementation

The Project Selection Stakeholder Workshop identified a portfolio of 2nd Priority Country watershed management and wetland projects. The programme would support their cost-benefit analysis, a sourcing of funds and coordination of implementation.

Sub-component 1.5: Development of the Kagera sub-basin Integrated Watershed Management Investment Programme (KWMIP) Phase 2.

The present Investment Programme is the first Phase of a long-term watershed management investment programme for the Kagera sub-basin. Resources are made available in Phase 1 for the development of Phase 2 that will build on the lessons learnt from the implementation of Phase 1.

3.4.2 Component 2. First Round Country Integrated Watershed Management and Wetland Management Investment Projects

Total funding: US$ 557,393,000

Sub-component 2.1: First Round of Watershed Management Projects: Burundi Integrated Watershed Management Investment Programme

Total funding: US$ 276.14million

First Round Projects have been prioritised by the Project Selection Stakeholder Workshop.

B-01: Integrated Watershed Management

- Soil and Water Conservation and Rehabilitation
- Support integrated agro-forestry and animal husbandry

- River Bank Protection
- Development of Irrigated Farming
- Development of Rural Infrastructure
- Trans-boundary Cooperation and Coordination

B-02: Stabilisation of Banks of Watercourses and Hillside Afforestation to reduce erosion and siltation.

- Soil and Water Conservation and Rehabilitation
- Support integrated agro-forestry and animal husbandry
- River Bank Protection

B-03. Hill Irrigation and Rainwater Harvesting

- Sustainable Management of Wetlands with integrated drainage small-scale irrigation
- Hillside Irrigation utilising small motor pumps
- Rainwater Harvesting and Micro-scale Irrigation
- Village level potable water supplies
- Construction of Farm to Market Roads
- Awareness Enhancing and Capacity Building
- Value chain addition (improved storage), Improved Market information and Market Linkages
- Provision of Micro Credit

BW-01: Protection of Ecosystems through Environmental Flows

- Reviewing the existing approaches for the estimation of the environmental flow requirements of ecosystems in the Kagera sub-basin
- Reviewing experience from Tanzania and elsewhere on the issues related to environmental flow assessment and implementation
- Developing guidelines on environmental flows appropriate to the Kagera sub-basin
- Assessing and comparing the current systems for awarding abstraction and discharge licences and monitoring adherence to the licence conditions
- Reviewing the existing approaches for determining abstraction and discharge permits and the estimation of sustainable abstractions
- Developing guidelines on evaluating applications for licences, issuing licences and monitoring licences, where possible harmonising approaches for the Kagera sub-basin as a whole
- Identifying demonstration sites for the maintenance or restoration of suitable hydrological regimes in conjunction with joint capacity building and management activities

- Assessing the wider ecosystem implications of environmental flows and sustainable abstractions

BW-02: Alternative Livelihoods for Wetland Communities through an Ecosystem Approach

- Implementing simple sustainable wetland management interventions such as drainage and improved soil management on existing cultivated wetlands (5,000ha)
- Assessing the opportunities for wetland livelihood activities that minimise physical modifications to the wetland and maximise benefits to local communities, e.g. bee-keeping, ecotourism, fish farming, etc.
- Facilitating the acquisition of any necessary equipment, and providing the required guidance through grants, extension services, etc.
- Implementing alternate livelihood trials including improved bee hives (1,000) and small group fish ponds of 400m^2 (500)
- Monitoring and evaluating the alternate livelihood schemes, including the quantification of the financial benefits of traditional and alternate livelihoods to both stakeholders and the environment
- Producing guidelines for full-scale alternate livelihood schemes
- Holding joint capacity building and management activities
- Assessing the wider ecosystem benefits of alternate livelihood schemes
- Coordination with the proposed Wetlands Conservation Project for the Nyamuswaga Wetlands

BW-03: Assessing Impacts on Wetlands of Water Harvesting and Development on Groundwater Resources

- Reviewing the existing small farm dams and the use of groundwater boreholes for purposes other than providing potable water in the Kagera sub-basin
- Selecting paired demonstration sites for monitoring the impacts on wetlands of interventions such as small farm dams and the increased use of boreholes for irrigation
- Implementing alternative water sources in one of each pair of sites
- Monitoring the impacts on wetlands of interventions compared to control sites
- Comparing the impacts across different pairs of sites
- Producing guidelines for rainwater harvesting and the use of boreholes for supplementary irrigation
- Holding joint capacity building and management activities
- Assessing the wider ecosystem implications of water harvesting and the development of groundwater resources

Sub-component 2.2: First Round of Watershed Management Projects: Rwanda Integrated Watershed Management Investment Programme

Total funding: US$ 116.21 million

First Round Projects have been identified from five thematic areas listed below.

R-01. Soil & Water Conservation, Soil Improvement, Improved Fodder Production and Re-forestation

- Soil Conservation and Soil Fertility Enhancement
- Improved Fodder Production and Increased Livestock Productivity
- Water Harvesting Small Dams and Micro-Irrigation Schemes
- Sediment retention Measures
- Reduced Fuelwood Consumption from Improved Stoves
- Construction of Farm to Market Roads
- Awareness Enhancing and Capacity Building
- Value chain addition (improved storage), Improved Market information and Market Linkages

R-02: Rainwater water harvesting, small-scale irrigation, Fruit and Fodder trees

- Soil Conservation and Soil Fertility Enhancement
- Improved Fodder Production and Increased Livestock Productivity
- Water Harvesting Small Dams and Micro-Irrigation Schemes
- Alternative Livelihoods; fruit trees
- Reduced Fuelwood Consumption from Improved Stoves
- Construction of Farm to Market Roads
- Awareness Enhancing and Capacity Building
- Value chain addition (improved storage), Improved Market information and Market Linkages

R-03 Increased Fish Production in Lake Muhazi (Aquaculture)

- Develop with local fishery people a sustainable fishery management system that will enable fish stock stocks to increase
- Establish agreements on net sizes, fishing frequencies, closed seasons and numbers of fishing boats through highly participatory process
- Develop sport fishing as part of local tourism development. Lake Muhazi and the upper Nyabugogo valley is already a fast developing tourist attraction
- Recruit trainers in angling, and water sport to teach local fishermen the intricacies of sport fishing
- Amend local fishing law to include sport fishing emphasizing catch-and-release as the guiding principle
- Attract private investors in the fishing and water sport industry

- Develop a tank fishery at the outlet of Lake Muhazi at the Rwesero site to meet the increasing demand for fish from Kigali

RW-01: Protection of Wetland Ecosystems through Maintaining Environmental Flows

- Reviewing the existing approaches for the estimation of the environmental flow requirements of ecosystems in the Kagera sub-basin
- Reviewing experience from Tanzania and elsewhere on the issues related to environmental flow assessment and implementation
- Developing guidelines on environmental flows appropriate to the Kagera sub-basin
- Assessing and comparing the current systems for awarding abstraction and discharge licences and monitoring adherence to the licence conditions
- Reviewing the existing approaches for determining abstraction and discharge permits and the estimation of sustainable abstractions
- Developing guidelines on evaluating applications for licences, issuing licences and monitoring licences, where possible harmonising approaches for the Kagera sub-basin as a whole
- Identifying demonstration sites for the maintenance or restoration of suitable hydrological regimes in conjunction with joint capacity building and management activities
- Assessing the wider ecosystem implications of environmental flows and sustainable abstractions

RW-02: Artificial Wetlands for Sustainable Urban Drainage

- Reviewing the drainage and solid waste management approaches in towns/cities in the Kagera sub-basin
- Implementing reduction, reuse and recycling (RRR) initiatives and improving the management of landfill sites
- Selecting demonstration sites for SUDS in two or more countries e.g. Kigali, Gitega
- Implementing trial versions of SUDS
- Monitoring and evaluating the RRR initiatives, landfill management and SUDS trials
- Producing guidelines for a full-scale SUDS effort
- Holding joint capacity building and management activities
- Assessing the wider ecosystem benefits of artificial wetlands

Sub-component 2.3: First Round of Watershed Management Projects: Tanzania Integrated Watershed Management Investment Programme

Total funding: US$ 106.1 million

First Round Projects have been identified from five thematic areas listed below.

T-01: Soil conservation in Karagwe and Ngara Districts

- Soil Conservation
- Restoration of abandoned Mining Areas

T-02: Supply of potable water to 15 villages, Kayanga, Bunazi and Kyaka Townships in Karagwe and Bukoba Districts

- Feasibility study
- Environmental Impact Assessment (EIA)
- A detailed design and procurement, contract award
- Construction and construction management

T-03: Protection and Conservation of Water Sources in Muleba and Biharamulo Districts, Tanzania

- Raising awareness of the importance of restoring degraded landscapes, using video, theatre, newsletters and other media
- The provision of technical training to show farmers which native species to choose for planting and restoration, enhancing their own benefits
- Close liaison with village governments and environmental committees, as well as with traditional institutions and the community assemblies that lay down customary law and supporting the preparation of participatory village land use plans
- Soil and water conservation measures will include terraces, grass strips and where required radical terraces over an estimated 21,150ha (Biharamulo District) and 49,910ha (Muleba District. As well as improved farm incomes there will secondary positive impacts on reducing food insecurity
- The primary approach in fertility enhancement will involve short-rotation nitrogen fixing or phosphorus mobilizing shrubs and herbs, to develop a large biomass during a short period (6-12 months). Organic matter and soil nutrients will be enhanced, while soil pH will also improve
- The plant species to be used include Tephrosia vogelii, Mucuna pruriensis, Sesbania sesban, Calliandra callothyrsus, Leucaena species, and Tithonia diversifolia. The bigger shrubs (Calliandra and Leucaena species) will also be used to stabilize terrace risers. Herbaceous plants (e.g. Mucuna pruriensis) and small shrubs (e.g. Sesbania sesban and Tephrosia vogelii) will be planted as temporary cover, while bigger shrubs will be planted as hedges on terrace risers
- The fodder trees or shrubs to be introduced are those which can tolerate drought and termites; grow fast and coppice; and produce quality fodder which can adequately supplement elephant grass. The sites selected would support Calliandra callothyrsus and various species of Leucaena, especially Leucaena diversifolia and L. leucocephala. The niches for planting include boundaries, hedgerows between

crops, buffer zones around lakes, marshlands and rivers, along public roads, or possibly as woodlots

- Both the soil fertility improvement and the increased fodder production sub-components utilise tree species such as Calliandra callothyrsus and various species of Leucaena, especially Leucaena diversifolia and L. leucocephala that will also provide bio-fuels and contribute to the re-forestation on farmland sub-component

TW-01: Flood Management in the Bigomba and Burugi Valleys: Ngara, Biharamulo & Muleba Districts

- Soil erosion and run-off control using soil bunds and grass strips (6,300ha)
- improved farming techniques with fertiliser and improved seed (4,200ha)
- Reforestation/agroforestry with multi-purpose trees such as *Grevillea robusta, Calliandra calothyrsus, Casuarina equisetifolia, Senna* sp., etc. in household woodlots (0.1ha per household: 30% of households)
- Intensive animal husbandry (zero grazing) integrated with erosion control and agroforestry with fodder banks of Napier grass (30% of households)
- Wetland management for growing rice and other food crops (simple drainage 8,000ha)
- Wetlands improvement: irrigation weir and canals other food crops(3,000ha)
- Rainwater harvesting techniques annual crops (500ha)
- Fuel wood saving techniques to reduce wood consumption – improved stoves 30% households)
- Rural infrastructure development (100 Village potable water supplies)
- Rural infrastructure development (rural road rehabilitation: 500kms)

TW-02: Robust Evidence Base to inform Wetland Management Decision-making

- Developing programmes to monitor the ecological character of wetlands, ecosystem services, the uses of wetlands, the impacts of those uses, etc.
- Assembling inventories of key flora and fauna and their habitat requirements and threats, the hydro-ecological character of wetlands, the impacts of wetland users, etc.
- Assessing the economic value of wetland ecosystem services, including the benefits of wise use
- Developing standard techniques for measuring and recording information in the four riparian countries
- Developing indicators of wetland health for an annual 'State of the Wetlands' report and ensuring that the necessary information is being collected
- Comparing indicators for recent years to identify trends in any aspect of wetlands, and the analysis of trends and implications for wetlands
- Publishing and disseminating a 'State of the Wetlands' report
- Reviewing wetland management plans in the light of information obtained, at least on an annual basis

TW-03: Feasibility Study for Fisheries in Karagwe District

- The project components shall include the hydrological and chemical study of all the lakes
- An investigation of the preferred fish species
- A pilot study on the introduction of fish to one of the lakes, selected on the basis of the findings of the investigations
- The construction of fish ponds in wetlands will be piloted
- Participatory development of sustainable fishery management systems will be developed to help to restore and increase fish stocks. Fisheries cooperatives will be promoted to develop strong market linkages and provide adequate storage facilities

Sub-component 2.4: First Round of Watershed Management Projects: Uganda Integrated Watershed Management Investment Programme

Total funding: US$ 45,820,000

First Round Projects have been identified.

U-01: Land Rehabilitation in Kikagate Sub-County, Isingiro District

- Soil Conservation
- Restoration of Abandoned Mining Areas

U-02: Integrated Water Resource Management (IWRM) project, Kakuuto County in Rakai District, Uganda

- River bank rehabilitation and protection (70kms with 30 meter closed zone = 420ha)
- Wetland zoning, rehabilitation and protection (20,500ha)
- Capacity building in IWRM at County, Sub-county and Parish levels
- Construction of SWC measures on 1,730ha of upland cultivated land
- Water harvesting dams and irrigation 500ha)
- Wetland supplementary irrigation: weirs and drainage (500ha)
- Homestead fodder banks and leguminous trees for improved livestock feed for increased milk production 10,000 households x 0.2ha)
- Promotion of alternative livelihoods (Improved bee hives
- Afforestation of bare hills, to control run-off into the Kagera River basin (10,000 households x 0.1ha)
- Capacity building on sustainable agricultural practices (10 x Parish Demonstration Plots
- the development of an IWRM Catchment Land Use Plan
- Capacity building of water user associations and catchment management associations (10 Parish WUA's)
- Construction/rehabilitation of roads (50kms) and water supplies (40 village supplies)

U-03: Integrated Water Resource Management Project, Maziba River catchment, Kabale District

- Development and rehabilitation of soil and water conservation measures on agricultural land (13,620ha)
- Soil fertility enhancement on already conserved land (35,440ha)
- River bank rehabilitation and protection 80kms: (480ha)
- Sustainable development of Wetlands with improved drainage (3,916ha)
- Promotion of alternative livelihoods – 500 Improved Bee Hives)
- Afforestation on bare hills in Maziba County (40,000 Household Woodlots (0.1ha per household)
- Capacity building in IWRM at the District, sub-county and community levels (86 Parishes)
- Capacity building on sustainable agricultural practices
- Capacity building of water user associations and catchment management associations (86 Parishes);
- Support to the development of Participatory Community Land Use Plans
- Design of a payment for ecosystem services programme, in liaison with the hydroelectric project

UW-01: Robust Evidence Base for Sustainable Wetland Management Decision Making

- Developing programmes to monitor the ecological character of wetlands, ecosystem services, the uses of wetlands, the impacts of those uses, etc.
- Assembling inventories of key flora and fauna and their habitat requirements and threats, the hydro-ecological character of wetlands, the impacts of wetland users, etc.
- Assessing the economic value of wetland ecosystem services, including the benefits of wise use
- Developing standard techniques for measuring and recording information in the four riparian countries
- Developing indicators of wetland health for an annual 'State of the Wetlands' report and ensuring that the necessary information is being collected
- Comparing indicators for recent years to identify trends in any aspect of wetlands, and the analysis of trends and implications for wetlands
- Publishing and disseminating a 'State of the Wetlands' report
- Reviewing wetland management plans in the light of information obtained, at least on an annual basis

UW-02: Payments for Wetland Environmental Services

- Assessing the obstacles to the implementation of PES schemes in the Project area
- Identifying prototype buyers and sellers of ecosystem services in the Project area
- Working with buyers and sellers in the project area to implement the agreed measures and monitor the social, environmental and economic impacts

- Producing guidelines for later full-scale PES schemes
- Holding joint capacity building and management activities
- Assessing the wider ecosystem benefits of PES

UW-03: Soil Conservation and Rehabilitation, Sustainable Wetlands Management and Alternative Livelihoods for Wetlands Communities through Ecosystem Approach, Ntungamo and Kagitumba (North) Sub-watersheds

- Soil Conservation and Soil Fertility Improvement
- Sustainable Wetland Management
- Promoting and Supporting Alternative Livelihood Strategies

3.4.3 Component 3. Trans-Boundary Wetlands Management Projects

The two principal threats to wetlands in the Kagera sub-basin are siltation due to soil erosion, and conversion to agricultural land (the soil erosion itself often being caused by the deforestation of hillsides to produce cultivable/grazing land and poor farming practices). Whilst human activities, both direct and indirect, are the principal contributors to wetland degradation and loss, other factors include inadequate planning and management of resources, and lack of basin information and public – and institutional - awareness of wetland values. Wetlands are also degraded or lost because of policy deficiencies, planning deficiencies and institutional weaknesses.

All of countries of the Kagera sub-basin are making progress in environmental management and many of these issues are being addressed within the pressures imposed by population growth and land demand. Regionally, the Nile Basin Wetlands Management Strategy 2011-2016 exists and is starting to be implemented.

Sub-component 3.1 WET 3: Strategic Wetlands Classification:

Information about national wetlands and their current condition varies widely across the four countries of the Kagera river basin, as do approaches to the protection, development and management of wetlands. There is a need for a strategic overview to inform wetland management decisions in the long-term. The overview would be in the form of a wetland classification and harmonised between countries. The strategic wetland classification will help managers decide which wetlands to actively retain and preserve, and which to potentially lose to non-wetland use.

Sub-component 3.2 Management of RAMSAR Trans-boundary Sites

The goal of the project is to maintain the character and ecosystem services of Kagera wetlands through conservation and wise use and, thereby, contribute to the Kagera Wetland Management Framework, the Nile Basin Wetlands Management Strategy, and sustain the livelihoods of wetland and other communities. The MTRS project will be primarily based in the Uganda SAMUKA (Sango Bay – Musambwa Island – Kagera Wetland and Floodplain) Ramsar site and adjacent Tanzania wetland, but will also involve the Rugezi Ramsar site in Rwanda. However, all four riparian countries will be involved as the project has implications for wetland management, and particularly trans-boundary wetland management, in the entire Kagera sub-basin.

3.4.4 Component 4. Capacity Building and Coordination

Total funding: US$ 9,045,000

The KIWMP calls for increased capacity development, and improved policy development and delivery. At the same time the four Riparian countries will undertake a range of related intervention activities. Addressing these issues on a basin wide approach is a core principle of IWRM and this intervention, by enabling stakeholders from the different countries to work and learn together would represent an effective means to deliver the IWMP as well as cementing the foundation for cooperation across the basin. Over the longer term effective management of the Kagera basin can only come about through the riparian countries working together.

Additional inputs at the country level can be financed through this facility where countries require specialist support specific to their own requirements.

This component would support capacity building and institutional strengthening through improved communication, information exchange and specific training. These would be implemented through specially commissioned courses, regional training workshops, linkages to universities and national research institutes and civil society organizations involved in watershed management activities. It would have strong linkages with Components 1 and 2.

Sub-component 4.1 Policy Analysis, Development and dissemination

It is important that a common platform to discuss and develop policy is provided which will the basis to strengthen cooperation within and across the riparians.

The programme will provide resources to enable NELSAP-CU to commission and undertake policy orientated studies; to publish and disseminate findings and hold workshops and training in policy analysis. Specific subject areas could include (but not limited to) land tenure, trans-boundary wetland management, trans-boundary Biodiversity Conservation (Trans-boundary Park management), local level participatory land use zoning, legal powers for water users associations, local level micro finance access.

Sub-component 4.2 Basin-wide Capacity Building:

At the Basin level common knowledge, common approaches, shared learning systems will the basis to strengthen cooperation within and across the four riparian countries. It is from such a platform that properly trans-boundary issues can be effectively managed.

There would be shorter courses in specific aspects of watershed management planning, monitoring and evaluation. Subjects would cover but be not limited to Social Impact Assessment, Environmental Impact Assessment and Environmental Economics, Natural Resources Management, Project Monitoring and Evaluation, Project Management and Management Information Systems. The participants would be drawn from the four riparian countries and would contribute to fostering knowledge exchange and confidence building.

Sub-component 4.3 Country/Topic Specific Capacity Building

This sub-component will contribute to increasing the levels of understanding of technical staff at the national level in the various aspects of watershed management at the national level.

The Programme would support the design and holding of training courses in Watershed Management Planning. These could be held in-country through or at the UNESCO-IHE in the Netherlands or the Hydraulics Research Institute Regional Training Centre in Egypt.

Sub-component 4.4 KIWMP Coordination Workshops

It is important that planning and implementation of Country KIWSM activities are closely coordinated with each other and with other Basin-wide and country IWSM activities to ensure maximum synergy.

The Programme will support a number of both Basin level and Country level Coordination Workshops to ensure coordination across all IWSM activities.

Sub-component 4.5 Presentation and Dissemination of Kagera IWMP Lessons Learnt

The relevance is far reaching, common knowledge, common approaches, shared learning systems and a common platform to discuss and develop policy will the basis to strengthen cooperation within and across the riparians. It is from such a platform that properly trans-boundary issues can be effectively managed.

The Programme will support a number of both Basin level and Country level facilitate exchange of experiences and lessons learnt by supporting representation and presentation of Kagera experiences at regional and international meetings. It will also support production of technical materials to promote and disseminate IWMP knowledge and objectives.

3.5 Summary of Performance Indicators

The key Outcome/Impact indicators listed in the Monitoring and Evaluation Plan are as follows:

Component 1

- Programme management structure established and operating
- 1st Round PDD's developed; funding obtained; projects being implemented
- Reporting and M&E System fully developed and operating
- 2nd Round Projects identified, PDD's developed, funding obtained, Projects being implemented
- KIWMP Phase 2 PDD developed

Component 2

(i) Watershed Management Projects

- Percentage cultivated area with moderate and high soil erosion risk with physical and biological conservation measures
- Reduced soil erosion and stream sediment loads
- Percent area of cultivated wetlands under sustainable and improved management (drainage works, irrigation)
- Increased agricultural productivity in that catchment as evidenced through increased economic returns and increased investment in catchment protection
- Additional targeted interventions in priority areas that uplift agricultural productivity and catchment protection

(ii) Wetlands Projects:

- Percentage reduction in the area of degraded wetland in the Kagera basin
- Percentage increase in number of abstraction and discharge permits issued on the basis of hydrological assessment
- Percentage reduction in volume of untreated effluent disposed by targeted municipals and industries
- Percentage increase in number of active PES schemes in Kagera basin

- Percentage increase in number of alternate (non-traditional) income-generating activities in wetlands
- Percentage reduction in the volume of surface water irrigation abstractions as a result of water harvesting and sustainable development of groundwater resources

Component 3

- The adoption by Partner States of harmonised policies, legislation and regulatory frameworks for management of water resources (including wetlands) and water-dependent sectors e.g. fisheries
- Number of Ramsar sites in the Kagera sub-basin
- Number of potential Ramsar sites in the Kagera sub-basin
- The adoption by Partner States of harmonised policies, legislation and regulatory frameworks for management of water resources (including wetlands) and water-dependent sectors e.g. fisheries
- Percentage increase in the number of wetland postgraduate degrees from Partner State universities

Component 4

- Increased regional cooperation in watershed management
- National and Trans-boundary Policy analysis studies undertaken
- Increased number of sub-basin-wide networks of integrated watershed management professionals
- Increased number of experts knowledgeable in integrated watershed management
- Greater appreciation of erosion, deposition and sedimentation and impacts on livelihoods and poverty by policy makers and professional staff at all levels
- Expanded information, knowledge base and know how on watershed management available to professionals and NGOs
- Greater awareness of the linkages between macro/sectoral policies, the natural resource base, livelihoods and poverty

4. Programme Costs and Financing

4.1 Programme Costs

The detailed breakdown of programme costs is provided in Annex C (Economic and Financial Analysis). It is summarized in Table 4 below.

Table 4: Summary of Programme Costs (US$ '000)

COMPONENT	ACTIVITY	RESPONSIBILITY	WHERE	TOTAL BUDGET
Programme Management	Establish Regional and National Programme Steering Committees	NELSAP-CU	Basin wide	US$ 34,149,000
	Establish Programme Management Units in the identified the executing agency per country		Basin wide	
	Hire National Project Coordinators		Basin wide	
	Administer KIWSP		Basin wide	
	Prepare Project Implementation Plans (PIP's) from project identification Fiches (PIF's)		Basin wide	
	Seek funding sources for 1st Round Project using Project Implementation Plans (PIP's)		Basin wide	
	Monitor implementation		Basin wide	
	Prepare Project Implementation Plans (PIP's) from project identification Fiches (PIF's)		Basin wide	
	Seek funding sources for 1st Round Project using Project Implementation Plans (PIP's)		Basin wide	
	Integrated Watershed Management Project		Burundi	
	Stabilization of banks of water-courses and lakes to reduce erosion and siltation		Burundi	
	Hill Irrigation & Rainwater Harvesting Project		Burundi	
	Protection of wetland ecosystems thru' environmental flows		Burundi	
	Alternative livelihoods for wetland communities thru ecosystem approach		Burundi	
	Assessing impacts on wetlands of water harvesting & development of groundwater resources		Burundi	
	SWC on terraces, soil improvement, increased		Rwanda	

COMPONENT	ACTIVITY	RESPONSIBILITY	WHERE	TOTAL BUDGET
Country Integrated Watershed Management And Wetland Management Investment Projects	fodder & re-forestation	PMUs in Executing agency per country and implementing agencies		US$ 557,393,000
	Rainwater harvesting, small-scale irrigation, Fruit & Fodder trees		Rwanda	
	Increased Fish Production (Aqua-culture)		Rwanda	
	Protection of wetland ecosystems thru environmental flows		Rwanda	
	Artificial wetlands for sustainable urban drainage		Rwanda	
	Soil conservation in Karagwe District		Tanzania	
	Potable water supplies: 15 villages & 3 towns		Tanzania	
	Protection & conservation of water resources		Tanzania	
	Flood management in the Bigomba & Burigi valleys		Tanzania	
	Robust evidence base to inform wetland management decision making		Tanzania	
	Feasibility study for fisheries Karagwe District & Fish Ponds in wetlands		Tanzania	
	Land rehabilitation in Isingiro District		Uganda	
	IWRM Project in Rakai District		Uganda	
	IWRM Project in Maziba Sub-watershed		Uganda	
	Robust evidence base to inform wetland management decision making		Uganda	
	Payments for Wetlands Environmental Services		Uganda	
	Alternative livelihoods for wetland communities thru ecosystem approach		Uganda	
Programme Of Trans-Boundary Wetlands Management Projects	Prepare Project Implementation Plan (PIP)	Executing agencies and implementing agencies	Classification of wetlands is basin wide. Management of RAMSAR sites is in Uganda and Tanzania	US$ 14,128,000
	Seek funding sources using PIP			
	Negotiate & sign contracts/sub-contracts			
	Coordinate and Monitor implementation			
	Prepare Project Implementation Plan (PIP)			
	Seek funding sources			
	Negotiate & sign contracts/sub-contracts			
	Coordinate and Monitor implementation			
Capacity Building & Institutional Strengthening	Commission and undertake policy orientated studies	NELSAP-CU	Basin wide	US$ 9,045,000
	Publish and disseminate results		Basin wide	
	Undertake workshops and training		Basin wide	
	Prepare work plan		Basin wide	
	Conduct technical on-the-job training		Basin wide	
	Conduct technical training workshops and		Basin wide	

COMPONENT	ACTIVITY	RESPONSIBILITY	WHERE	TOTAL BUDGET
	seminars			
	Prepare work plan		Basin wide	
	Conduct technical meetings to address country-specific & technically specific issues		Basin wide	
	Conduct basin-level planning meetings to enhance cooperation & coordination		Basin wide	
	Conduct country-level planning meetings to support administration of country programme		Basin wide	
	Disseminate lessons learnt at Regional and international Meetings		Basin wide	
	Produce technical materials to promote/disseminate KIWMP knowledge and objectives		Basin wide	

4.2 Draft Implementation Schedule

OUTPUT	ACTIVITY	2014				2015				2016				2017				2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sub-component 1.1 Programme Management	1. Establish Programme Steering Committee	→																			
	2. Establish Programme Management Unit	→																			
	3. Hire National Project Coordinators	→																			
	4. Administer KIWSP	→																			
Sub-component 1.2 First Round Watershed Management and Wetland Management Project: Fund Sourcing and Implementation	1. Prepare Project Implementation Plans (PIP's) from project identification Fiches (PIF's)	→																			
	2. Seek funding sources for 1st Round Project using Project Implementation Plans (PIP's)			→																	
	3. Monitor implementation					→															
Sub-component 1.3 Establish and Maintain a Monitoring, Reporting and Evaluation System	1. Design Reporting Monitoring, Reporting and Evaluation System based on Logframe	→																			
	2. Implement MRE System					→															
Sub-component 1.4 Preparation of Second Round Watershed Management and Wetland Management Project Design Documents, Fund Sourcing and Implementation	1. Undertake Economic Cost-benefit analysis of 2nd Priority Project Identification Fiches (PIF's)					→															
	2. Prepare PIP.s					→															
	3. Seek funding sources						→														
	4. Monitor implementation							→													
Sub-component 1.5 Development of KIWMP Phase 2	1. Prepare Project Identification Fiches					→															
	2. Develop Programme Implementation						→														

OUTPUT	ACTIVITY	2014				2015				2016				2017				2018			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	Plan (PIP)																				
	3. Seek Funding Sources											→									
COMPONENT 2: COUNTRY INTEGRATED WATERSHED MANAGEMENT AND WETLAND MANAGEMENT INVESTMENT PROJECTS																					
Sub-component 2.1 First Round of Watershed Management and Wetlands Investment Projects: Burundi IWMP		→																			
Sub-component 2.2 First Round of Watershed Management and Wetlands Management Investment Projects: Rwanda IWMP		→																			
Sub-component 2.3 First Round Round of Watershed Management and Wetlands Management Investment Projects: Tanzania IWMP's		→																			
Sub-component 2.4 First Round of Watershed Management and Wetlands Management Investment Projects: Uganda IWMP		→																			
COMPONENT 3: PROGRAMME OF TRANS-BOUNDARY WETLANDS MANAGEMENT PROJECTS																					
Sub-component 3.1 KIWMP-01: Strategic Wetlands Classification		→																			
Sub-component 3.2 KIWMP-02: Management of Trans-boundary RAMSAR Sites		→																			
COMPONENT 4: CAPACITY BUILDING & INSTITUTIONAL STRENGTHENING																					
Sub-component 4.1 Policy Analysis, Development and dissemination		→																			
Sub-component 4.2 Basin-wide Capacity Building:		→																			
Sub-component 4.3 Country/Topic Specific Capacity Building:		→																			
Sub-component 4.4 IWMP Coordination Workshops:		→																			
Sub-component 4.5 Presentation and Dissemination of Kagera IWMP Lessons Learnt:		→																			

5. Procurement, Disbursement and Financial Management

5.1 Procurement Methods

Technical equipment and other goods costing US$ 150,000 and more per contract will be subject to International Competitive Bidding (ICB) requirements. For goods in the range between US$ 80,000-US$ 150,000 contracts may be awarded on the basis of National Competitive Bidding (NCB) – it should be noted that for this Programme, NCB includes all of the participating riparian countries and bidding opportunities will therefore be published in all riparian countries for NCB. For goods contracts below US$ 80,000 contracts will be awarded on the basis of the World Bank's Shopping procedure, where price quotations will be obtained from at least three qualified suppliers from at least two eligible countries or from comparison of quotations obtained from three domestic suppliers from the riparian countries.

As much of work undertaken in this Programme is capacity building and technical assistance to the Kagera sub-basin riparian countries, a large percentage of the expenditures will be for Consultants' Services, much of which will be based in the Kagera sub-basin. Following agreed upon criteria, NELSAP-CU will maintain and update a list of consultants that will be used to establish shortlists. The shortlists will be established based on expressions of interests received through GPNs and Specific Advertisements placed in the UNDB and/or regional newspapers, depending upon the estimated value of such assignments.

Consultant firms, Universities and other Research Institutions financed under the Programme will be selected in accordance with Bank Consultant Guidelines through a Quality and Cost-Based Selection (QCBS), and by using the Bank's Standard Request for Proposals. Specialized Consultants' Services from the Nile riparian countries, below an estimated contract value of US$ 50,000 equivalent, will be selected on the basis of Consultant Qualifications (CQ) from the predetermined roster of qualified consultants. Training under the Programme will be implemented according to an annual training plan that NELSAP-CU will prepare and submit to the World Bank for non-objection before implementation. More specifically, the following selection procedures would be used for Consultants' Services:

(a) *Quality-and-Cost-based Selection:* All consulting service contracts valued at more than US$ 200,000 equivalent would be awarded through the Quality and Cost Based Selection (QCBS) method. QCBS will also be used for all contracts awarded to consulting firms between US$ 50,000 and US$ 200,000 equivalent. To ensure that priority is given to the identification of suitable and qualified national consulting firms, short-lists for QCBS contracts estimated at or less than US$ 200,000 equivalent may be comprised entirely of national consultants from the Nile riparian countries, with no more than two firms on the short-list from any one riparian country, (in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines), provided that a sufficient number of qualified individual or firms (at least three) are available. However, if foreign firms have expressed interest, they would not be excluded from consideration.

(b) *Consultant's Qualification Selection* (CQ) may be used for Consultants' Services contracts below an estimated contract amount of US$ 50,000 equivalent, for research and targeted interventions for which organizations with specialized expertise, strong capacities to work with multinational groups and proven track records would be recruited. CQ may also be used for the selection of training institutions for contracts to provide training services that are estimated to cost up to US$ 150,000 equivalent per contract.

(c) Consultants for services meeting the requirements of Section V of the Consultant Guidelines will be selected under the provisions for the *Selection of Individual Consultants* method. Individual Consultants (IC) will be selected through comparison of curriculum vitae

against job description requirements of those expressing interest in the assignment, or those having been identified directly by the PMU. Civil servants from the riparian countries cannot be hired as consultants under the Programme.

(d) *Indefinite delivery contracts* may be used for contracts on a retainer basis. Services under this type of contract are likely to be those which will be required on a recurrent basis and could include, but are not limited to, services such as translation, interpretation, workshop facilitation and community training etc.

Training, workshops, conference attendance and study tours will be carried out on the basis of approved annual programs that will identify the general framework of training and similar activities for the year, including the nature of training/study tours/workshops, the number of participants, and cost estimates. For national training and workshops, preference will be given to consultants from the country in which the training is being organized, provided that a sufficient number of qualified individuals or firms (at least three) are available. For regional training, preference will be given to consultants from the Kagera sub-basin riparian countries, provided that no more than two consultants from any one riparian are short-listed and a sufficient number of qualified individuals or firms (at least three) are available.

The regional and technical nature of this Programme will result in the possibility that a number of tasks and activities may best be undertaken by existing state owned universities or research institutions in the Kagera sub-basin riparian countries. The Programme thus will involve contracting research institutions, think tanks and academic institutions that are government owned in the respective countries where the services are required to be rendered. This work will likely be in the fields of: (a) watershed management, (b) environmental and social impact assessment, (c) environmental economics, (d) erosion and sedimentation data and modeling; and (e) livelihoods assessment.

As these unique assignments will be specific for the respective countries, it is very unlikely that suitable expertise from private sector consultants will be available.

University professors or scientists from research institutes can be contracted individually under Bank financing provided that they have full time employment contracts with their institution, have regularly exercised their function for a year or more before they are contracted under Bank funding, and selection is made on a competitive basis, with full justification, and in accordance with relevant Bank policies.

The following documents are to be submitted to the World Bank for prior review:

(a) *Goods and Equipment:* All Contracts above US$ 150,000 will be submitted for prior review.

(b) *Consultants' Services:* All contracts with firms above US$ 200,000, will be submitted for prior review, while the first contract with firms below US$ 200,000 will be reviewed. Individual consultant contracts above US$ 50,000 will all be subject to prior review. Terms of Reference will be written by the appropriate the NELSAP-CU staff. A large portion of this Programme will consist of small stand-alone Consultants' Services. To streamline Programme operations, the World Bank will not review the Terms of Reference for any contract less than US$ 50,000.

6. Reporting

6.1 Programme Reports

During the implementation of the Programme, the following reporting will be required:

- **E-mailed monthly narrative report** (maximum 2 pages). Outlining the work accomplished in the preceding month, an outline of the work expected to be completed during the coming month, and if appropriate, comments and/or recommendations relating to any unforeseen conditions which may affect the progress or the quality of the work. The responsibility for reporting is with the Watershed Management Programme Manager.

  Distribution: NELCU, National Programme Coordinators, World Bank (Donor). For internal use only.

- **Semi-Annual Programme Implementation Progress Reports.** Covering the intervals between the annual reports the e-mailed monthly narrative reports will be expanded to include a narrative summary of activities undertaken during the past six months. This should include: (a) the status of implementation progress, problems encountered and corrective actions needed; (b) the current costs of each Programme component and estimated costs for completion; and (c) the degree of achievement of Programme objectives, as measured by the status of Programme indicators. These reports will include special sections on procurement and disbursement (attaching the most recent FMR) with information on: progress of procurement activities against plans set forth in the PIP; variations in progress, reasons for variations and actions being taken to address these problems; and Programme expenditures (foreign and local costs).

  Timing: First report to be submitted 6 months after Programme effectiveness.

  Distribution: NELSAP, National Programme Coordinators, World Bank (Donor).

- **Annual Substantive Programme Progress Report:** The Programme Manager will complete an annual substantive Programme progress report, which will clearly describe and assess Programme progress against the established work plan, Programme documents, and the overall objectives of the Programme. Every effort will be made to simplify and unify reporting arrangements; therefore, the Programme Manager will review the annual reporting requirements of the World Bank, (the Donor) and the other relevant agencies and donors and design a unified reporting format acceptable to all that meets most of the reporting requirements of the donors and agencies in one single report.

  Timing: First report to be submitted 12 months after Programme signature and two months ahead of the first Annual Programme Review.

  Distribution: NELSAP, World Bank and (Donor).

- **Substantive Work Plan:** Will be attached to the Annual Substantive Programme Progress Report and will include an updated procurement plan.

- **Mid-term evaluation:** Resources have been set aside in accordance with standard procedure to ensure that a mid-term evaluation can be carried out. The Terms of Reference and timing of this evaluation will be determined through the Annual Review process or by correspondence. The evaluations will normally be independent and thus carried out by consultants not previously associated with the Programme.

  Timing: Mid-term evaluation: During third year of Programme implementation.

Distribution: NELSAP. This report may be shared with other parties upon request in accordance with established policy.

6.2 Additional Substantive Programme Outputs

Ad hoc Reporting and Substantive Reports. The Programme will be producing a large number of ad hoc substantive reports within the thematic areas in which it is operating. These reports will be produced at either the national or regional levels for a variety of purposes.

Distribution: As per intention of report.

Additional distribution: NELSAP, World Bank (and Donor)

Financial reports:

- **Financial Monitoring Reports.** NELSAP-CU will be responsible for submitting quarterly FMRs as well as annual budgets, Programme monitoring reports, and consolidated financial statements to the World Bank.
- **Quarterly FMR**. Procurement and disbursement information for the preceding quarter and projections for the following six months will be consolidated in the quarterly Financial Management Report (FMR). The FMRs will also include a summary of the physical progress in Programme implementation, with an explanation of variances from implementation targets.

Timing: quarterly for each fiscal year of Programme effectiveness.

Distribution: NELSAP, World Bank (and Donor).

7. Monitoring and Evaluation

7.1 Introduction

Purpose. The monitoring and evaluation process is an integral element of the Integrated Watershed Management Investment Programme. This process will provide information on whether the Programme interventions are successful in achieving the development objectives and whether implementation is proceeding in accordance with the plan. The process integrates the measurement and monitoring of *both development and performance indicators*. Monitoring is a continuous process and provides necessary information which facilitates an assessment of the progress of Programme implementation. Moreover, monitoring ensures that progress is maintained according to schedule, and measures the quality and effect of the processes and procedures.

Audience for monitoring efforts. The monitoring efforts provide the NELCOM, NELSAP and NELCU, the World Bank, (the Donor) and others with the information needed to analyze the current Programme situation and identify solutions to keep the schedule and achieve the desired objectives.

Programme evaluation. In addition to the ongoing monitoring efforts, two Programme evaluations will be carried out during implementation, at mid-term and at Programme completion. These two evaluations will provide a perspective on Programme implementation, corrective measures required (mid-term evaluation) in addition to providing information on which effects and impacts have been achieved during the Programme implementation period.

Monitoring and Evaluation Plan. This Monitoring and Evaluation Plan (M&E Plan) will be adapted from the Programme Logical Framework (Annex A). The plan will provide a narrative

for Programme components and the corresponding output indicators. The plan will further outline how each indicator is measured and where relevant information is found.

Methodology. The M&E process will utilize both conventional and participatory strategies and will engage a range of stakeholders. Monitoring is mainly based on quantitative and objective indicators and objective assessments. Only when it is not possible to get objective assessment, does the plan resort to subjective assessment.

Ongoing learning. Programme monitoring results will be presented to all Programme stakeholders. The findings and results will be used by NELCU and the Kagera Integrated Watershed Investment Programme Manager to improve performance and to take corrective action throughout the Programme implementation period.

7.2 Monitoring and Evaluation Strategy and Action Plan

Approach. The first task will be to develop a detailed Monitoring and Evaluation Plan based on the information already provided in the FS-KIWMP documentation. The first activity in the Plan will be to review the Programme to develop detailed performance indicators against which Programme performance can be measured. These indicators will be in conformity (but in greater detail) with the Logframe and Monitoring Plan provided in the present document.

Establishing the baseline situation. The Programme Manager will develop component specific baseline situations along the following parameters:

- Present availability information; documentation; environmental, social and economic data; and GIS data (Components 2 and 3).
- Present availability, location and status of sediment monitoring data; research results and other data on erosion and deposition; and research and other data on natural resources-livelihoods-poverty linkages within the Kagera sub-basin (Components 2 and 3).
- The baseline situation may be developed based on literature review, sampling surveys, rapid assessments or other accepted methodologies.

Developing the M&E Strategy and Action Plan and the Tracking Matrix. With the clearly defined baseline situation, and with further detailed performance indicators, the M&E Strategy will be developed. The Strategy will outline benchmarks and timelines for achievements of the various outcomes. Attached to the M&E Strategy will be an Action Plan, which clearly spells out the steps, activities and actions which are required from various stakeholders, consultants, etc. A relatively simple overview tracking matrix will also be established to monitor performance. This tracking matrix will be updated regularly, (at least once every two months). The tracking matrix will form an important input to reporting to NELSAP, the World Bank and donors. It will also be a useful base on which to write the semi-annual and annual reports

8. References

BRL (BRL Ingénierie). 2008. Kagera River Basin Monograph: Basin Development Report. Kagera River Basin Transboundary Integrated Water Resources Management and Development Project.

Scherr, 1999, Soil degradation: A threat to developing country food security in 2020?

Sene.K.J and Plinston.D.T, 1994, A review and update of the hydrology of Lake Victoria in East Africa

APPENDIX 1: Results Framework and Monitoring

Refer to section 10.3 in the Final Report.

APPENDIX 2: First Round Projects

The Project Fiches are presented in a series of separate files/documents – for each country component.

The Project Fiches include:

- Project Workplan and Timeline
- Monitoring and results framework
- Project costing
- Procurement and disbursement arrangements

APPENDIX 3. Second Round Projects

KIWMP SELECTED PROJECTS					PRIORITY 2
2nd ROUND	old code	NEW CODE	Project Name	Sub-watershed	Key Elements
			BURUNDI		
WSM	B3	B-04	Intensive animal husbandry & Fuelwood saving	Akanyaru, Ruvubu-1	Improved animal feed supply, fuelwood
WETLANDS	W1	BW-04	Robust evidence base to inform management decisiuon-making	All in Burundi	Information & data gathering,classification
WETLANDS	W3	BW-05	Artificial wetlands for sustainable urban drainage	Gitega	Reducing urban pollution
WETLANDS	W4	BW-06	Payments for wetland environmental services	Akanyaru	Investigating potential for PES
			RWANDA		
WETLANDS	W1	RW-03	Robust evidence base to inform management decisiuon-making	All in Rwanda	Information & data gathering,classification
WETLANDS	W4	RW-04	Payments for wetland environmental services	Muzazi Wetlands, Nyabugogo	Investigating potential for PES
WETLANDS	W5	RW-05	Alternative Livelihoods for Wetland Communities thru ecosystem approach	Muzazi Wetlands, Nyabugogo	Investing wetland livelihood opportinities
WETLANDS	W6	RW-06	Impacts on wetlands of water harvesting & development of G-water resources	Muzazi Wetlands, Nyabugogo	Assess impacts on wetlands of small dams, etc
			TANZANIA		
WSM	T1	T-04	Groundwater assessment for sustainable IWR Assessment	All in Tanzania	Groundwater survey
WSM (new)		WT-04	Establish Water User Association for WSM		
WETLANDS	W2	WT-05	Protection of wetland ecosystems thru envinmental flows	Kagera-4 (Minziro wetland)	Estimation E-flows, Sustainable abstractions
WETLANDS	W3	WT-06	Artificial wetlands for sustainable urban drainage	Muleba ditrict	Reducing urban pollution
WETLANDS	W4	WT-07	Payments for wetland environmental services	Mwisa-2	Investigating potential for PES
WETLANDS	W5	WT-08	Alternative Livelihoods for Wetland Communities thru ecosystem approach	Mwisa-2	Investing wetland livelihood opportinities
WETLANDS	W6	WT-09	Impacts on wetlands of water harvesting & development of G-water resources	Mwisa-2	Assess impacts on wetlands of small dams, etc
			UGANDA		
WSM	U3	U-04	Wetland zonation & rehabilitation in Ntungamo Subwatershed	Ntungamo	WSM
WETLANDS	W2	UW-04	Protection of wetland ecosystems thru envinmental flows	Isingiro Wetlands (New)	Estimation E-flows, Sustainable abstractions
WETLANDS	W3	UW-05	Artificial wetlands for sustainable urban drainage	Kabale wetland, Kagitumba	Reducing urban pollution
WETLANDS	W6	UW-06	Impacts on wetlands of water harvesting & development of G-water resources	Rakai wetland, Kagera-4	Assess impacts on wetlands of small dams, etc