AFRICAN DEVELOPMENT BANK

Language: English
Original: English
Distribution: Limited

African Water Facility
Facilité africaine de l'eau
Mobilising Resources for Water in Africa

REPUBLIC OF KENYA

INTEGRATED LAND AND WATER MANAGEMENT IN THE KIBUON AND TENDE RIVER CATCHMENTS

(KISII, NYAMIRA, RACHUONYO AND HOMA BAY DISTRICTS)

APPRAISAL REPORT

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AWF

AFRICAN WATER FACILITY

October 2008

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ACRONYMS

AWF	African Water Facility
CBO	Community Based Organisation
CMS	Catchment Management Strategy
GOK	Government of Kenya
ILWMKTC	Integrated Land and Water Management of the Kibuon and Tende Catchments
IWM	Integrated Watershed Management
IWMPAP	Integrated Watershed Management Participatory Action Plan
KARI	Kenya Agricultural Research Institute
KEFRI	Kenya Forestry Research Institute
KMFRI	Kenya Marine and Fisheries Research Institute
KOSFIP	Kimira Oluch Smallholder Farm Improvement Project
KOSHIDS	Kimira-Oluch Smallholder Irrigation Development Study
LBDA	Lake Basin Development Authority
M&E	Monitoring and Evaluation
MOU	Memorandum of Understanding
MRDA	Ministry of Regional Development Authorities
NALEP	National Agricultural and Livestock Extension Programme
NEMA	National Environment Management Authority
PCMT	Project Coordination and Management Team
TSS	Total Suspended Solids
WKIEMP	Western Kenya Integrated Ecosystem Management Project
WRUA	Water Resources Users Association
WRMA	Water Resources Management Authority

Project Information

Client information

Recipient	Kenya: Ministry of Regional Development Authorities
Executing Agency	KOSFIP Project Coordination and Management Team

Financing Plan

	AWF	EUR 1.94 m
	GoK	EUR 0.10 m
	Total	EUR 2.04 m

Key Financial Information

Non reimbursable AWF Grant

Timeframe (Key milestones)

	Application	December 2006
	Approval	December 2008
	Effectiveness	February 2009
	Completion	October 2011
	Last disbursement	December 2011

Kenya: Integrated Land and Water Management for the Kibuon and Tende River Catchments
Result-Based Logical Framework

Hierarchy of Objectives	Expected Results	Reach	Performance Indicators	Indicative Targets and Timeframe	Assumptions/Risks
Sector Goal	**Impact**	**Beneficiaries**	**Impact Indicator(s)**	**Target Indicators and Timeframe**	**Assumption**
Contribute to improved livelihoods of populations using the land and water resources management within the Kibuon and Tende river catchment	Improved level of sustainable incomes from exploitation of the land and water resources of the catchments	1. Communities in the Kibuon and Tende river basins, and fishermen in the Winam Gulf of the Lake Victoria	Level of per capita income in the catchment as percentage of national level	Increases from 72% to over 100% by 2020 **Source:** National Statistics **Method:** Census 2019 and interim surveys	Continued commitment of the GoK for the effective implementation and enforcement of land use, water and natural resources management policies
Project Purpose	**Outcomes**	**Beneficiaries**	**Outcome Indicators**	**Progress anticipated in the medium term**	**Assumption**
The project's purpose is to improve land and water management in the Kibuon and Tende catchments through increased community participation and to initiate recovery of the water quality and quantity through promotion of sustainable agricultural and land use practices in the catchments, leading to reduction in nutrient and sediment transport into the water courses.	1. Improved Management of Water Resources in the Catchments of the Kibuon and Tende rivers 2. Reduced loss of nutrients and sediment from the project area 3. Higher levels of base flows with lower levels of flood peaks in Kibuon and Tende rivers 4. Improved vegetative cover, soil productivity and forest resources 5. Wetlands conserved	1. Water Resources Management Authority WRMA and catchment communities 2. Farming households within catchments of the Kibuon and Tende 3. Smallholder irrigation farmers of the KOSFIP and another 400,000 HH	Number of Sub-catchment strategies in use by Functional Water Resources User Associations WRUAs Reduction in suspended solids concentrations with respect to baseline Increase in base-flow in the two rivers; Increase in area off vegetative cover in the project area based on satellite images Stock of healthy wetlands by field count and remote observation	7 by PY3 10% by PY 3 10% by PY 3 10% by end of project 5% by PY3 **Source: Project Completion Report** **Method: M&E data Analysis**	Assumption • Community members able to work together to manage resources • Adoption by communities of technologies intended to promote IWM Risk Mitigation • Intensify community awareness meetings to maximise participation and provide capacity building • Use of already tested technologies and high levels of participation
Inputs and Activities	**Outputs**	**Beneficiaries**	**Output Indicators**	**Progress anticipated in the short term**	**Assumption statement**
A.1.1 Capacity Building for Resource Information Management, Quantity and Quality Monitoring • Install gauging stations • Acquire water quality equipment • Train staff or WRMA including research on origins (source and amounts) of pollution	***Increased capacity of WRMA to monitor quality and quantity of water resources in the catchments***	WRMA, Communities in the Awach Kibuon and Awach Tende river basins	Number of gauging stations functioning Number of water quality sampling points operating	13 by PY2 6 by PY2	

Hierarchy of Objectives	Expected Results	Reach	Performance Indicators	Indicative Targets and Timeframe	Assumptions/Risks
A.1.2 Capacity Building for Community Participatory Catchment Management Promote creation of Water Resources User Assoc WRUAs Prepare Catchment *Management Strategy* and sub-catchment plans	***Communities empowered to address land and water resources management problems***	WRMA, communities in the Awach Kibuon and Awach Tende river basins	Sub-catchment Management Strategies completede No. of Water Resources User Associations (WRUAs) formed and functioning	7 byy PY2 7 sub-catchment WRUAs formed by PY1	Population growth increases pressure on land Resources <u>Mitigation</u>: Land legislation and persuation Climate change could lead to floods affecting project outputs <u>Mitigation</u>: Emergency measures would be required. Community members may not collaborate to manage resources Adoption may not increase in amounts hoped for Large number of transactions may make cost control difficult on subprojects Slow growth of community capacity than required for success <u>Mitigation</u>: Contigent measures would be taken by project management including revision of plans.
A.2.1 Community mobilisation for Participatory Action Plans • Undertake Participatory Rural Appraisal (PRAs); • Community sensitisation meetings; • Pre-project **Dissemination of technologies** with field demonstrations • **Training** on management practices and group dynamics: • **Promotion** of alternative livelihoods	***Communities empowered to address land and water resources management problems through planning for specific initiatives***	Community in the catchment	No. of community participatory action plans (IWMPAPs) prepared	360 community participatory action plans (IWMPAPs) prepared by PY 1	
A.3 Capacity of Supporting agencies Training and field tours for farmers, extension workers and Staff of institutions at local and regional level.	***Staff of Local agencies, and extension worker trained and supportive of the programme***	Extension experts, and service providers	No. of trained Farmers, extension experts, and service providers *engaged* in IWRM planning. No. of trained staff from institutions at local and regional level participating in IWRM planning.	360 farmers (40% women), 6 extension experts, & 2 service staff by PY 1 20 persons (50% women) from 3 institutions by PY 1 **<u>Source</u>:** Progress Reports **<u>Method</u>:** M&E Data collection and processing	
A5 Off-farm conservation infrastructure implementation Rehabilitation of gullies; Zoning and Construction of buffer strips; Reduction of Eucalyptus trees; Conserve Wetlands include Converting to Fishponds; Increase of plant and tree cover;	***Off-farm conservation infrastructure functioning***	Residents of the *hotspot* areas	Number of sub-projects showing results	60 by end of project **Source** : M&E System	
A6 Community Sub-projects Support to efforts to increase soil cover,; Support to eligible ***alternative*** livelihoods: Facilitation to link input and output markets and microfinance;	***On farm practices and alternative livelihoods options demonstrated and ready for wide adoption***	Farming Communities in the catchment	Number of community sub-projects showing results	120 by end of project **Source** : M&E System	
A.6. <u>PROJECT MANAGEMENT,COORDINATION , M&E</u> 1. Establish blocks, focal areas and project team 2. Conduct baseline and diagnostic studies &reviews (M&E) 3. Procure goods and services 4. Supervise SEAs of initiatives, within sub-proposals 5.Implement components and coordinate other activities 6.Management of Community Grant Funds	***Project well managed***	All stakeholders	Program completed within time and costs	Time Cost **<u>Source</u>**: Project Completion Report **<u>Method</u>:**	

EXECUTIVE SUMMARY

The Kibuon and Tende are rivers that drain areas of 760 km² and 780 km² respectively in the districts of Kisii, Rachuonyo, Nyamira and Homa Bay in the Nyanza Province into the Winam Gulf on eastern bank of the Lake Victoria in Kenya. Annex 1 shows the project Area. Land pressures and rapid population growth have resulted in poor agricultural and land management practices giving rise to severe land degradation. These in turn lead to the water resource problems of high sediment loads in the rivers and their estuaries in the Lake, declining base flows and increased incidences of flash floods in the two river catchments. These quality and quantity conditions lead to many socio-economic problems in the catchments, and most directly affects the ADB financed Kimira-Oluch Smallholder Farm Improvement Project (KOSFIP) which obtains all of its water from the two rivers.

The observed severe degradation results from a conjunction of heavy rainfall, steep slopes, erosion-prone loose volcanic soils as well as general poverty in the area. The densely populated highlands of Nyanza Province have some of the poorest populations in Kenya. The primary livelihood strategy for about 85-90% percent of the population in the two river basins is farming. HIV/AIDS rates are among the highest in the country. These lead to inefficient and non-sustainable economic activities such as inappropriate farming practices, encroachment of agriculture lands into fragile natural habitats in particular, buffer zone along river courses, hill slopes, woodlands, forest reserves and wetlands, multiple yearly cropping.

The purpose of the project is to empower the local committees and local agencies of Government to institute improved management of the catchment of the Kibuon and Tende rivers. It will initiate recovery of the water quality and quantity through promotion of sustainable agricultural practices in the catchments, and therefore reduce transport of nutrients and sediment into the water courses. The project will provide support for water quantity and quality monitoring; community awareness of issues and technologies for land and water management; community empowerment through creation of institutions for managing land and water resources and promoting collaboration between upstream and downstream users; participatory planning of activities to diversify livelihoods for better watershed management and for implementation of these activities through sub-projects. It will also result in the formulation of the Catchment Management Strategies (CMS) as required by the Water Act of 2002, and will secure the support of the local government agencies to the communities in implementing integrated watershed management.

The project will positively impact the water quality and quantity in the selected blocks, at the same time that it will improve soil productivity in the farms due to reduced run-off and reduced loss of nutrients as well as diversified livelihoods. The net effect will be an overall improvement in the economic opportunities related to improved water resources, for irrigation, domestic water use and fishing in the estuaries in the Winam Gulf.

Beyond the project, with the demonstrational effect, the benefits will be felt in the entire catchment. Thus the project will have overall positive benefits for water resources management and the ecosystems. It also exemplifies the role of stakeholders in water resources management and enhances governance.

It is therefore recommended that the AWF grant the Kenyan Ministry of Regional Development Authorities an amount of **EUR 1.94 million** to finance the proposed project as described in the present report.

1 BACKGROUND

1.1. Origin of the Project

1.1.1. The Kibuon and Tende river catchments in the Eastern Lake Victoria in Kenya are characterized by severe soil and water degradation conditions and poverty which have resulted in the reduction of base water flows, increases in flash flood incidents and high silt loads in the river systems. The Kimira-Oluch Smallholder Irrigation Development Study (KOSHIDS) has shown that the sedimentation rates have doubled over the last 10 years, and that occurrence of flash floods in the lower basin is one of the problems that could negatively impact the Kimira Oluch Smallholder Irrigation Project's (KOSFIP) irrigation infrastructure as well as human settlements within the irrigation schemes. Long-term trends of base flow, based on analysis of hydrological information have indicated a significant decrease for the Kibuon River and a slight decrease for the Tende River.

1.1.2. The Government of Kenya (GoK) has consequently requested financial assistance from the African Water Facility (AWF) for the conservation and management of the upper and mid-catchments of the Kibuon and Tende rivers in order to avert deterioration of the rivers and Lake Victoria ecosystems and contribute to sustaining water flows and reduced incidence of floods.

1.2. Sectoral Priorities

1.2.1. Water plays a key role in the economy of Kenya. The country's renewable supply of fresh water is less than 650 cubic metres per capita per year, making it one of the "water-scarce" countries in the world. Rainfall is highly variable in space and time while over half of Kenya's water resources are shared.

1.2.2. Kenya has undertaken major reforms in the sector aimed at improved delivery of service. The Water Act of 2002 provides a sound basis for implementing these reforms in the form of institutional structures that separate regulatory from service delivery functions, and allows for participation of the public in water governance.

1.2.3. The Ministry of Water and Irrigation (MoWI) remains the lead agency responsible for sector strategy, policy and legislation. Among the subsidiary institutions under the authority of the Ministry, the Water Resources Management Authority (WRMA) is the one most directly charged with the responsibility of water resources management.

1.2.4. The Water Act prescribes Catchment Management Strategies (CMSs) as the tool for use for management of water resources and requires that they should be developed for each of the major river basins in Kenya. CMSs shall, among other things, contain water allocation plans which set out principles for allocating water and provide mechanisms and facilities for enabling the public and communities to participate in managing the water resources within each catchment area. Sub-catchments can then cascade the strategic objectives relevant for their locality but consistent with the main strategy.

1.2.5. The water sector falls within two major sector clusters in Kenya. Watershed management and agricultural water use fall primarily within the Agriculture and Rural Development (ARD) cluster while water for consumption falls within the Infrastructure sector. The Medium Term Plan and Expenditure Frameworks for 2008-2010 for the two clusters identify among present priority programmes of these sectors the themes relating to natural resources management, integrated development, pollution control, management of water

resources and flood control. Integrating these themes implies collaboration among ministries responsible for water, for agriculture and livestock, and for regional authorities.

1.3. **Problem Definition**

1.3.1. **The situation**: Kibuon and Tende rivers originate from the Kisii highlands at an elevation of 2,100 metres above sea level (masl) for the 52 km long Kibuon River and 1,900 masl for 49 km long Tende River. The total drainage areas of the two river basins are 760 and 780 sq. km respectively. The Kisii highlands are characterised by an equatorial climate and receive mean annual rainfall of 1,500 to 2,000 mm. Both rivers flow into the Winam Gulf of Lake Victoria and are the biggest river basins that fall within the sub-basin of the *southern shoreline management unit* which comprises one of the six sub-basins the Lake Victoria South catchment. The watershed covers the administrative districts of Kisii, Rachuonyo, Nyamira and Homa Bay.

1.3.2. For both rivers, the entire catchment, except for the floodplains close to Lake Victoria, is cultivated, with intensity increasing towards the upper catchment boundaries. In the upper catchment, the natural forest has almost disappeared and even steeper slopes are used for agricultural purposes. Fast growing eucalyptus, some of whose species have high water consumption, have replaced indigenous species. Rainfall increases with altitude and reaches 2,100 mm per year.

1.3.3. In the middle catchment, land grabbing is progressing rapidly. Often even the natural forest on steep slopes of the typical volcano cones is chopped down and the land is cultivated up to the top. The plots are often very narrow, so that tilling is done downhill usually to avoid too ox and plough taking too many turn rounds. Anti erosion measures are not commonly applied.

1.3.4. **The problem**: These conditions in the catchments have resulted in declining water flow with data for period from 1970 to 1989 showing a reduction of the rivers base-flow and increased incidence of flash flood events in downstream areas.

1.3.5. The Kibuon and Tende river basin is one of the significant contributors of sediment load into the Lake Victoria. KOSHIDS gave following results in Table 1.1 below:

Table 1.1 Solids Transport

Solids Transport in the Kibuon and Tende rivers			Sondu Miriu
	Kibuon	**Tende**	**Sondu Miriu**
TSS (ppm)	1,409	916	90
Annual sediment yield (tons/km²)	99	96	
Catchment size (km²)	760	780	3,500

1.3.6. High sediment loads are undesirable in the river and have a direct deteriorating effect on the fish spawning areas.

1.3.7. **The Consequences**: Kimira Oluch Smallholder Farmer Improvement Project (KOSFIP), an irrigation project funded by the AfDB, is based on the two rivers and will supply a total net irrigable area of 1,474 hectares to provide supplementary irrigation water, mainly during the dry season. A trend of prolonged **low flows** would affect the performance of irrigation schemes and pose risks for the downstream habitats. **Flood flows** are a threat to hydraulic structures such as the flow diversion intakes/weirs foreseen in the KOSFIP. Finally, **siltation** of the irrigation canals would result in shortened economic life of the project.

1.3.8. Deterioration of the water quality in the Gulf would have consequence for water supply to Kisumu town and on the flourishing commercial fishery providing income and food to a large number of local people. Yet nutrient build-up is increasing in the Winam Gulf as shown below.

Table 1.2 Nutrient loads

Annual Loads in the Tende		Concentrations in the Gulf	
	Tende	**Winam Gulf**	
TN(t/yr)	184	TN(mg/l)	0.56-0.63
TP (t/yr)	15	TP (mg/l)	0.02-0.04

1.3.9. A direct effect of eutrophication in Lake Victoria is the spread of the water hyacinth in the Lake and other water bodies in its catchment. Many activities such as fishing, transport and recreation are being hampered and efforts to control its spread have proved largely unsuccessful up to now.

1.3.10. **The solution**: The technologies defining appropriate practices related to conservation and the sustainable use of natural resources have been developed by organizations, such as Kenya Agricultural Research Institute - KARI, Kenya Forestry Research Institute - KEFRI and the Kenya Marine and Fisheries Research Institute - KMFRI over the last ten years, and have been tested in field trials and demonstrations. However, adoption and main-streaming of these technologies by farmers has been slow, presumably because of lack of perception of advantages beyond soil and water conservation, partly due to lack of additional resources by farmers to invest and partly due to risk aversion and socio-cultural constraints.

1.3.11. The solution lies in the adoption of a proper Integrated Watershed Management (IWM) approach focusing on empowerment of communities with proven technology, information on opportunities and financial resources to make the best investment decisions in land and water management. Income generating and value adding activities are necessary to provide incentives for adoption.

1.4. Beneficiaries and Stakeholders

1.4.1. The ultimate beneficiaries of the project in the long term will the people located in the entire catchment of the project in the four districts of Kisii, Nyamira, Rachuonyo, Homa Bay. In the short term the beneficiaries of the present intervention funding will be in the upper and middle catchments, and whereas the people in the lower basin will benefit from improvements in the upstream management. This underlies the need for continuous communication between the upstream and downstream users through the mechanism of the WRUAs.

1.4.2. According to the 1999 census the population of the four project districts is 1.88 million distributed as in the table below. Farming constitutes the primary livelihood strategy for about 85-90% percent of the population while livestock ownership forms an important part of the household asset base for the farmers. HIV/AIDS rates are among the highest in the country and have left a growing number of rural households widowed or orphaned.

Table 1.2 Population of the project areas

	District	**Population**
Highlands Density 1,200p/km^2	Kisii	491,000
	Nyamira	288,000
Lowlands Density 350p/km^2	Rachuonyo	607,000
	Homa Bay	498,000.
	Total	1,884,000
Av. Household size (persons)		5
Percentage of Female headed household (%)		42
Per capita Income (KES)		980

1.4.3. The population is characterized by significant diversities in terms of gender, access to resources such as land, wealth and income and ethnicity. These should be captured in the baseline studies on the project and the needs of each significant and/or vulnerable social group should be built into the project components.

1.4.4. Other beneficiaries and stakeholders include:

- the Community-based Organizations (CBOs) and Community groups in the area,
- Provincial, District and Divisional representatives of sector ministries, namely
    - the Extension Services of the Ministry of Agriculture,
    - the Ministry of Livestock and Fishery Development,
    - the Ministry of Environment and Natural Resources
    - the National Environmental Management Authority (NEMA),
    - the Ministry of Water and Irrigation through the regional Water Resource Management Authority (WRMA) in Kisumu,
- Lake Basin Development Authority - LBDA,
- the regional centres of national research institutions (e.g. KARI, KEFRI, KMFRI),
- and non-governmental organizations, NGOs.

The integrated watershed management approach will facilitate stakeholders to be actively involved with the communities in the disciplines of their mandates and competences. Strong coordination is necessary to reduce transaction costs.

2. THE PROJECT

2.1 **Impacts**

2.1.1 The intermediate effect of the project intervention in the selected blocks will be to demonstrate the benefits of applying appropriate practices in water and land management to land productivity and quality of water resources. This should lead to widespread adoption, with assistance from supporting agencies of Government, of these practices outside the blocks. The final impact to which the project will contribute is an increase in cash and subsistence output from exploitation of land, water and shoreline resources as measured by the per capita income.

2.1.2 More explicitly the expected long-term results of the project *over the entire catchments* include the following: i) improved and sustainable water flow discharge in the form of reduced floods and higher base-flows from the two rivers; ii) increased vegetative cover in the catchment, consisting of forest, standing crops and grass strips along the buffer zone of the rivers, iii) reduced soil and nutrient run-off, improved water quality, iv) improved soil structure and fertility and hence productivity, and by extension, reduced impacts on Lake Victoria ecosystem. The result will be conservation and sustainable use of biodiversity, as well as improvement in *quality of life* in the catchment including the estuaries in the Winam Gulf. These

would be achieved by wide adoption of the technologies, supported as necessary by reinforcing interventions.

2.2 **Outcomes**

2.2.1 The project's purpose is to empower local communities and agencies of Government to institute improved management of the catchment of the Kibuon and Tende. It will initiate recovery of the water quality and quantity through promotion of sustainable agricultural practices in the catchments. This will lead to reduction in nutrient and sediment transport into the water courses.

2.2.2 The expected outcomes are therefore:

- Improved management of land and water resources by empowered communities and their supportive government agencies
- Reduced runoff and loss of nutrients and sediment from the catchment in the project blocks
- Higher levels of base flow in the rivers, with lower levels of flood peaks
- Wetlands conserved
- Reduced risk of aquatic weeds in the rivers and estuary in the Winam Gulf

2.3 **Outputs**

2.3.1 The project's outputs are:

- **Resource Quality and Quantity Monitoring Capacity** of the catchment by WRMA and the community institutions (Water Resources Users Associations) will result from the institutional setup, catchment strategic plans, acquisition of monitoring assets and staff training.

- **Community Awareness** of issues, knowledge of available technologies for sound management of the watershed will serve as basis and a motivation for proper management of the watershed.

- **Community Participatory Action Plans** shall be prepared following the assistance provided to CBOs to implement Catchment Management Strategies at the local level.

- **Local Government Agencies Support for Watershed Management** will be secured through training and dissemination of the staff on issues of land and water management.

- **Off-farm Conservation Infrastructure** will be provided consisting of physical and biological conservation structures such as grass buffer strips, contours, rehabilitated gullies, changed land uses (e.g. fishponds in place of eucalyptus plots), protected springs.

- **On-farm Measures** in regular practices demonstrated in community projects and ready for wide adoption. On farm outputs of the project will be models of on-farm practices such as conservation tillage, cover crops, and diminished use of organic fertilizer.

- **Community Subprojects** will include means to diversify livelihoods away for destructive practices. Community fishponds, as examples, will be funded where it is demonstrated that the activity will be used to restore wetlands in place of draining with

non-indigenous trees or in other cases when communities are persuaded of the negative effects of brick/block making

- **Project Management** will result in timely completion and knowledge products from Monitoring and Evaluation and Environmental Management of initiatives of the project.

2.4 Activities

2.4.1 The project area will consist of six 25 square kilometre pilot block areas, three for each river basin. The pilot block areas within the basins will be stratified by elevation zones and *shall constitute clearly demarcated sub-catchments that will allow demonstration of the effects of the project*. The blocks will represent 9.7% of the total area of the two river basins (9.8% for Kibuon river and 9.6% for Tende river). Population and land use vary within each stratum and there are strong associations between this zoning and variables related to population density, land use, soil condition and land potential. Estimated 7,000-12,000 households will be targeted in the six block areas.

2.4.2 Each block will be divided into 15 focal areas (FAs) which will be used to test and demonstrate Integrated Watershed Management Participatory Action Plans (IWMPAPs) options and to provide real-time learning as communities and households implement their project on their land. Dissemination activities to be supported will include participatory adaptive on-farm research, farmer field schools, farmer to farmer training. A key element of IWM in the project will be linking upstream and downstream communities to better manage the river catchment as a whole. This will be accomplished through planning and financing of interventions that incorporate cross-community concerns.

2.4.3 The implementing agencies shall adhere to the national policies on integrating social equity concerns and gender mainstreaming in interacting with the communities. Data collection shall in process and content ensure adequate representation of men, women and children and different social groupings. Design of interventions shall take into account differences in ownership and control of livelihoods especially land and shall endeavour to assure equitable access to project benefits. Baseline as well as monitoring data collected under the M&E Component of the project shall be adequately disaggregated to show differences among these social groups and shall especially show disparities in relation to vulnerable groups. Vulnerable groups include families of persons living with or affected (widowed or orphaned) by HIV/AIDS. Their specific concerns should be taken into consideration.

2.4.4 Below is a list of activities and key tasks corresponding to the above outputs.

Activity 1: Water Quantity and Quality Monitoring and Management

2.4.5 The regional office of the WRMA in Kisumu will undertake capacity building for resource monitoring and management through the following:

- In collaboration with KARI the demarcation of project blocks and focal areas;
- creation and registration of Water Resources Users Groups in seven sub-basins;
- Catchment Management Strategies (CMS) for the Kibuon and Tende river basins, as under the Water Act (2002);
- modelling and optimization studies through a student research within the project;
- Rehabilitation and upgrading the existing surface and groundwater monitoring network;
- Procurement of Equipment and data collection and analysis of water quality;

- Staff training staff in information management for watershed management;
- Establish mechanisms for sharing of information among all concerned stakeholders. Present the CMS to stakeholders in preparation for formal approval of CMSs.

Activity 2: Community Mobilization and Continuous Awareness Creation

2.4.6 The project will engage the Kenya Agricultural Research Institute KARI through its Kisii branch to utilize Participatory Rural Appraisals (PRA) and a community driven approach for:

- Identification of problems and opportunities for rational watershed management;
- Community awareness of roles and issues of land and water resources;
- Dissemination of solutions to the problems of degradation of soil-and-water resources;
- Analysis of benefits of sustainable practices over and above soil and water conservation;
- Participatory Monitoring and Evaluation of the project in their respect areas.

Activity 3: Capacity of Communities and Supporting Agencies

2.4.7 The Project will engage KARI to strengthen the capacity of CBOs and local Government agencies to support community effort through planning and training workshops at the Focal Areas and District levels. This will cover:

- preparation of Participatory Action Plans leading to community sub-projects proposals;
- preparation of sub-projects for enhancing the improvement of water quality and quantity in the watershed with economic benefit;
- socio-economic and financial appraisals of plans, with ranking and options;
- social and environmental assessments of each plans.

Activity 4: Off-farm Conservation Infrastructure Implementation

2.4.8 Under this activity the project will identify and implement appropriate off-farm solutions to land and water conservation aimed at retarding overland flow, increasing soil cover protecting water courses and wetlands, rehabilitation of gullies.

Activity 5: Financing Community Sub-projects

2.4.9 The Project will support implementation of IWM activities identified through the Participatory Action Plans (PAPs) as sub-projects focusing primarily on improved land use at the community and farm levels. Activities will be aimed at:

- *diversifying livelihoods* away from activities with detrimental effects on the natural resources of land and water;
- increase in vegetative soil cover including nurseries and woodlots;
- promotion of energy saving technologies such fireless and solar cookers and water heaters;
- income generating to reduce pressure on resources land and water;
- promoting water use efficiency;
- enhancing the resilience of populations, especially in the flood plains, to impacts of climate changes.

2.4.10 An Implementation Manual stating the procedures and criteria for selection and funding shall be submitted for prior approval by the AWF as a condition of the grant.

Activity 6: Project Management, Monitoring and Evaluation

2.4.11 Project Management will consist of:

- procurement of execution resources, planning and scheduling different activities, following up execution (monitoring) as well as the evaluation of results at predetermined time;
- convening of periodic consultations among stakeholders;
- launching and end-of-project workshops, communication and
- financial management of the Community Grants;

2.4.12 The M&E component will in particular include:

- baseline study on the socio-economic and bio-physical data;
- develop detailed indicators to be monitored;
- monitoring various other indicators of project results and reporting to stakeholders;
- collecting and summarizing lessons from the project for dissemination of experiences.

2.4.13 Project coordination will also include communication with other relevant programme in the Lake Victoria region, in particular, the Western Kenya Integrated Ecosystem Management Project, Western Kenya Integrated Ecosystem Management Project, Western Kenya community Development and Flood Mitigation Project and Natural Resources Management Project, and Lake Victoria Water and Sanitation Project (LVWATSAN) for water and sanitation to small towns whose study is supported by the AWF.

2.5 **Risks**

2.5.1 A key assumption at the impact level is that the benefits accruing to the use of sustainable agricultural practices will motivate other community members outside the demonstration blocks to adopt these practices. If this does not occur at the desired level the full impacts cannot be realised. Additional investment will be required to address the constraints. The risk is reduced in the project design by allowing for value adding activities to increase the likelihood of realizing economic benefits as well promotion of additional investment as part of the dissemination of results. Monitoring during and following the implementation is necessary to confirm the effectiveness of these measures.

2.5.2 Other lower level risks are:

Risk	**Risk Mitigation Measure**
Continuing population growth in the area may result in increasing pressure on land resources	Comprehensive land management strategies and continuing search for alternative incomes will reduce the risks. The project has primary elements of this approach.
Climate change could lead to higher than normal flooding, affecting the project outputs	Emergency measures would be required to redress the situation. Participatory plans will involve elements of coping strategies.
Community members are not able to work together to manage resources	Project design would seek to identify strong cohesive forces and capitalize on them.
Adoption of technologies intended to promote IWM could remain low despite the community awareness.	Project Management would need to adjust its strategy to clearly identify credible champions and opinion leaders among community members
The large number of transactions involved makes ex-ante controls across individual sub-projects difficult	A strong Project financial management system would be put in place to ensure self regulation by communities
Community capacity may grow at a rate slower than desired for the project	The programme must be adjusted to suit

2.6 Cost and Financing Plan

The total cost of the project is estimated at 2.04 million Euros. The project will be financed by GoK and the AWF. The AWF grant allocation will be 1.94 million Euros. The contribution of the GoK will be 0.10 million Euros and will mainly support the salary of the KARI-Kisii regular staff and office costs within the normal budgetary allocations. Table 2.1 shows the summary of costs by activity and source of funding, while Table 2.2 sums up the categories of expenditure. Annex 4 gives a detailed breakdown by sub-activity and by category of expenses.

Table 2.1: Cost Estimates by Activity and by Source (EUR ,000)

ACTIVITIES	AWF FC	AWF LC	AWF Total	GoK LC	AMOUNT
Capacity-building for water quality monitoring and management	130.0	21.6	191.6	4.7	196.3
Community mobilization for the formulation of IWM Participatory Action Plan	50.1	197.3	248.0	36.6	284.6
On-farm structures and value adding activities		390.4	390.4	14.6	405.0
Off Farm Conservation Infrastructure	256.8	697.6	954.4	35.6	990.0
Project Coordination	88.0	63.4	151.4	9.6	161.5
Total Cost	524.9	1,370.3	1,936.3	101.1	**2,037.7**

Table 2.2 – Costs by Category of Expenses (in million UA)

Categories	**GoK**	**AWF**	**Costs**
Works		0.888	0.888
Goods		0.473	0.473
Services	0.101	0.567	0.668
Miscellaneous		0.008	0.008
Total Costs	0.101	1.936	2.037

2.7 Justification for AWF Participation

2.7.1 The project tests the assumption that incorporating community participation into watershed management coupled with demonstrating benefits from application of sustainable land and water management practices can help adoption rates necessary to attain sustainable impacts on the water resources. These technologies have been available for some time, but need to be demonstrated for farmers to adopt and scale up. Reinforcing messages are necessary to assure users of the added benefits of adopting sustainable farming practices and livelihoods. Its results will be disseminated under the M&E component.

2.7.2 The project is suitable for funding under the AWF. It addresses a Water Resources quality and quantity problem under the general focal area of the crosscutting theme of Environmental Management and mainstreams the principles of Integrated Water Resources Management (IWRM) in its approach of wide stakeholder's scope, balancing demands between consumption and the environment.

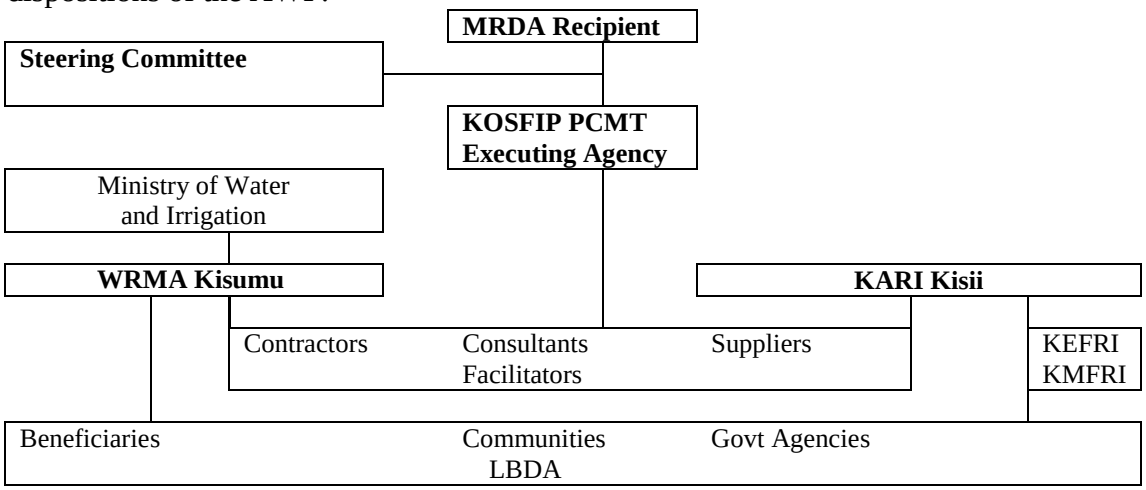
3. IMPLEMENTATION

3.1 Recipient

The Recipient will be the Government of Kenya's Ministry of Regional Development Authorities (MRDA) mandated to "facilitate and coordinate Regional Development Authorities – RDAs – in the execution of participatory, integrated basin based development programmes through policy guidance and capacity building for sustainable utilization and conservation natural resources". There are six RDAs and the Lake Basin Development Authority – LBDA – caters for the Kenyan side of the Lake Victoria Basin. The Ministry and the RDAs are thus significantly implicated in soil and water conservation in collaboration with the Ministry of Water and Irrigation and together with the Ministry of Agriculture and its subsidiary organizations. The Ministry is eligible for funding under the Operational Procedures 6.1 as an agency of a Regional Member Country of the Bank. The grant shall pass though the Ministry of Finance.

3.2 Implementation Arrangement and Capacity

3.2.1 The day to day management will be delegated to the Project Coordination and Management Team (PCMT) of the KOSFIP project under the Ministry, which is located in the project area in Homa Bay. The PCMT already has necessary infrastructure to receive project funds from the Bank Group, disburse to contractors and facilitating government agencies under the MoU arrangements, and account for funding (loans and grants); it has ongoing experience with procurement under the Bank Group and will appreciate even better the fast-tracking dispositions of the AWF.



3.2.2 The project implementation structure is as shown in the diagram above. Key implementers shall be the WRMA Regional Office in Kisumu and the KARI Kisii branch. WRMA and the district office in the catchments will execute the development of catchment strategies as well as the implementation of the quality and quantity monitoring component. Under the MoU with MRDA it shall be reimbursed for costs of its travel and field allowances, cost of meetings-and-workshops and other eligible incidentals costs as well as submit invoices from its third party contractors and suppliers for its components.

3.2.3 KARI Kisii branch will execute largest number of activities relating to awareness creation, training, promotion/social marketing of conservation technologies, supervision of demonstration works as well as community subprojects. PCMT will disburse to KARI under the

MoU for the costs as for WRMA (travel, field allowances, meetings and incidentals) as well laboratory consumables related to the project. The MoU should have the prior approval of the AWF and would be a condition for the first disbursement of the grant. KARI will under the MoU **commit** six scientists on a full time basis to supervise the activities in each pilot focal area and an accountant to manage the funds. *In addition where budgeted travel costs justify it these may be substituted by a vehicle and running costs*. KARI will also be provided with additional ICT and communication equipment according to the project budget.

3.2.4 Other agencies such as LBDA, KEFRI, KMFRI, NEMA will, in their areas of competence, provide facilitation services similar to those of the private suppliers, contractors and consultants with the exception that these will be provided under a MoU form of contract.

3.2.5 The existing Project Steering Committee (PSC) of KOSFIP, whose composition is given in Annex 2, shall oversee and coordinate the project's implementation with its main task being to review and approve the Annual Work Plans and related Budget to ensure adherence the development objectives. The Steering Committee is chaired by the MRDA and has among its members representatives of the Ministry of Water and Irrigation, and the Ministry of Agriculture. It shall ensure that there is adequate communication and coordination among stakeholders in the project. To that extent it shall ensure that the PCMT regularly convenes meetings of the stakeholders to discuss progress and issues as allowed for in its budget for this purpose. It shall ensure that the annual work plans have the endorsement of stakeholders.

3.3 Implementation Schedule:

The Project activities will be implemented within 34 months, in order to allow for the process of initiating community participation, dessemination and demonstration of technology and all uptake and adoption. Project activities will commence with the signing of the MoUs between the PCMT on the one hand and KARI and WRMA on the other, and establishment of the project coordination and management mechanisms within the existing KOSFIP's PCMT. A period of about 18 months is allowed for implementation of community sub-projects. The PCMT will prepare, at the end of PY3, the Project Completion Report (PCR). The Project implementation schedule is in Annex 3.

3.4 Procurement Arrangements

3.4.1 All procurement of goods, works and acquisition of consultancy services financed by the AWF will be in accordance with AWF's Operational Procedures, the Bank's Rules of Procedure for Procurement of Goods and Works or, as appropriate, Rules of Procedure for the Use of Consultants, using the relevant Bank Standard Bidding Documents.

3.4.2 **Works**: Works *under the off-farm conservation infrastructure and community sub-projects (described in section 2.4)* will be performed primarily through Community labour. A limited amount of works contracts will be procured through **Local Competitive Bidding (LCB)**[1] to supplement community labour. These will mainly be for earthmoving and haulage with simple equipment and possibly tractors. *Approximately 180 contracts, ranging in size from EUR 2,500 to EUR 10,00,0 are to be executed.* Local installation of the Hydro-Meteorological Network shall constitute one contract and shall be through local competition in **LCB.**

3.4.3 **Goods**:Equipment for river monitoring stations will be procured from *international* suppliers through Limited International Bidding (LIB), since suppliers for such special equipment

[1] See the Bank's "Guidelines for Procurement Under Community-Based Investment Projects."

are limited. Other items of equipment, such as vehicles, and equipment and other miscellaneous goods such as, vehicle O&M and office O&M, where the amounts are small, will be procured using National **Shopping (SHO)** procedures. Tree seedlings and seeds will be supplied by the local institutions, for which payment will be under the MoU for the cost of inputs required to produce these.

3.4.4 **Consultancy Services**: The services of specialized consultants and NGOs, for short term assignments on a need basis, to supplement the facilitating agencies in area of staff training, and beneficiaries' sensitization, organization, and training of communities stated in section 2.4 will be required. These contracts which range from EUR 500 to EUR 10,000 adding up to a total of EUR 76,800 will be procured under direct negotiation. Remote Sensing data will be acquired through a service estimated at EU 30,000 that will include processing with possible collaboration with the 'TIGER Initiative' of the European Space Agency and procured through Short-listing. Institutional Facilitation costs totalling EUR 561,200 are in the form of expenses of WRMA and KARI as described in section 3.2 of this report.

3.4.5 A summary of the procurement activities is stated below and a detailed table is annexed.

Table 3.1 **Summary of Procurement Arrangements (EUR '000)**

Categories of Expenditure	LIB	NCB	SHO	DPC[2]	Shortlist	Total
1.**Civil Works**						
1.1 Community based Works		459.0				459.0
1.2 Contractor Works				428.9		428.9
						887.9
2. Goods						
2.1 Office Equipment			58.0			58.0
2.3 Vehicles		50.1				50.1
2.4 Conservation inputs				238.5		238.5
2.5 Hydrometric and Quality equipment	126.0					126.0
						472.6
3. Services						
3.1 External Consultants					106.7	106.7
3.2 Institutional Facilitation				460.1		460.1
						566.8
4.Miscellaneous				8.3		8.3
Total	126.0	509.1	58.0	1135.9	106.7	1935

3.4.6 **Prior and Post Review** - Procurement *of contracts of EUR 10,000 or more* will require prior approval **of** *bidding documents and selection decision* by the AWF. Contracts estimated at less than EUR 10,000 may be approved on the basis of post **review** as allowed for in the Operational Procedures of the Facility.

3.4.7 The Implementing Agency has adequate procurement capacity and experience gained in the ongoing KOSFIP Project.

3.5 Disbursement Arrangements

3.5.1 Proceeds from the AWF grant shall be deposited into a Special Foreign Currency Account (FCA) to be opened in a commercial bank in Kisumu and managed by the PCMT. The opening of the Special Account will be a condition precedent to first disbursement of the AWF grant.

[2] DPC is Direct Purchase; SHO is Shopping; NCB is National Competitive Bidding; LIB is Limited International Bidding, all under the new Rules.

3.5.2 The PMCT will pay invoices of competitively procured third party suppliers and contractors including NGOs and make advance payments into the special accounts of the WRMA and KARI according to the annual work plans and budgets in a manner set out in the MoU for payment of eligible expenses of these agencies.

3.5.3 The grant is to be disbursed in six semi-annual tranches estimates in thousand EUR as follows:

Component \ Year and Semester	PY1 SI	PY1SII	PY2SI	PY2SII	PY3SI	PY3SII	Total
Capacity for monitoring and management	153	38	0	0	0	0	192
Mobilization for Participatory Planning	124	124	0	0	0	0	248
On Farm Structures	0	195	195	0	0	0	390
Off Farm Infrastructure	0	95	286	286	239	48	954
Project Management and Monitoring	38	23	23	23	23	23	152
TOTAL	315	476	504	309	261	71	1936

3.6 Accounting and Audit Arrangements

3.6.1 The PCMT shall be responsible for accounting for the project's disbursements from the Special Account as well as the replenishment under the MRDA. In this regard it shall be responsible for the custody of supporting documents in respect of payments to third parties. With regard to expenses by facilitating agencies under the MOUs these agencies shall be responsible for custody and submission to PCMT of supporting documents for their own replenishment of their own Special Accounts.

3.6.2 The AWF will arrange for the audit of the annual financial statements produced by the project. In all other respects the Accounting and Audit requirements shall follow the standard practices of the ADB funded projects.

3.6.3 The KARI-Kisii and WRMA will submit monthly returns of expenditure to the PCMT to enable a close monitoring and the consolidation of the expenditures. Moreover, their internal auditors will periodically examine the project accounts.

3.7 Monitoring, Evaluation and Reporting Arrangements

3.7.1 M&E system will be responsible for data collection and processing necessary to report on project implementation progress and performance, the latter focusing on results. M&E would be carried out using a participatory mechanisms coupled with strong technical expertise. These would be developed to strengthen the M&E system that has been developed by the Government as duplicated at district level. There is an M&E specialist within PMCT to coordinate the activities.

3.7.2 Baseline socio-economic data will be gathered at the community level during the Project start-up and will be followed by an independent evaluation consultant's report on socio-economic performance at the end of the project period. The data and information collected at this stage shall be disseminated to relevant communities through the M&E established systems and various review project performance workshops.

4. PROJECT BENEFITS

4.1 Effectiveness and Efficiency

4.1.1 The project is necessary to stop degradation of soil and water resources, and to demonstrate the utility of sustainable practices in the Kibuon and Tende watershed. By using solutions that have immediate value to the communities, it is expected to be more effective than traditional extension and public works methods in encouraging adoption.

4.1.2 The project's benefits to the farmers are the knowledge acquired with a view to increasing land productivity while being good stewards of the land and water resources. This includes knowledge necessary to demonstrate the value of advocated technologies. Collectively communities benefit from improved social capital in terms of ability to participate in the management of the catchment and in inter- and intra-community consultations necessary for negotiating benefit sharing between upstream and downstream users. In the end, all benefit from improved management of the catchments ecosystems.

4.1.3 Finally, the project has knowledge value. Information and communication materials and training developed in the project can be re-used elsewhere with minimal adaptation. Feedback from the M&E component, as well as results of focused studies and models developed here, will be provided for scaling up the interventions throughout the catchment and expanding into catchments with similar problems.

4.2 Sustainability

4.2.1 The project sustainability is underpinned by the strong institutional capacity built through the participatory approach. The participatory approach will ensure higher ownership of the project outputs, enhance community self esteem and minimize dependence. Capacity building will ensure strong community institutions and adequate support from government agencies necessary for inter and intra-community consultation and enactment of bylaws and enforcement of regulations when necessary. In addition utilization of the existing institutional structures to implement project activities further enhances this community and institutional capacity.

4.2.2 Ensuring that the advocated technologies provide true economic benefits is central to the success of the project and its sustainability. It is key to ensuring that the technologies are fully entrenched in the farming systems; that they are replicated outside the project boundaries; and finally that outputs from the project are physically maintained. It thus reducess reliance on state funding for maintenance of project outputs.

4.2.3 The overall project is aimed at enhancement of the environment. However Social and Environmental Assessments will be undertaken as part of the planning processes in the Catchment Management Strategies and Participatory Action Plans. Physical implementation will incorporate mitigation measures and obtain prior clearance from NEMA.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

5.1.2 The proposed Project will contribute to mitigate the problems of land and water degradation in the project area through the promotion of Integrated Watershed Management that includes incentives for sustained adoption of sustainable practices. It will demonstrate sustainable technologies in the six selected block areas that may later be replicated to the rest of the catchment and facilitate the participation of communities in the management of the

catchment. Better watershed management shall subsequently provide local environmental and social benefits.

5.1.3 The knowledge acquired in its implementation will be documented and disseminated for replication elsewhere. The AWF is best suited to finance the project as it demonstrates the principles on which the Facility operates (see paragraph 2.7.2).

5.2 **Recommendations**

It is recommended that an AWF Grant not exceeding EUR 1.94 million be granted to the Ministry of Regional Development Authorities of Republic of Kenya for the purpose of implementing the project as described in this report, subject to the following specific conditions:

A. Conditions Precedent to Entry into Force of the Grant Protocol of Agreement and First disbursement

The Grant shall enter into force on its signature. The first disbursement of the Grant shall be conditional upon the fulfilment of the following conditions:

The Recipient shall

i) provide evidence of the opening of a EURO special account at a bank in Kenya, into which part of the AWF grant resources shall be deposited on the request of the executing agency; (3.5.1)

ii) provide evidence that it has designated the PMCT of KOSFIP as the executing agency and has appointed a Project Coordinator whose qualifications and experience shall be acceptable to the AWF;(3.2.1)

iii) submit Memoranda of Understanding between the MRDA and the WRMA and between MRDA and the Kisii Branch of KARI, satisfactory to the AWF designating the roles of these agencies in the project and committing key staff of these agencies to the project;(3.2.2-3.2.4)

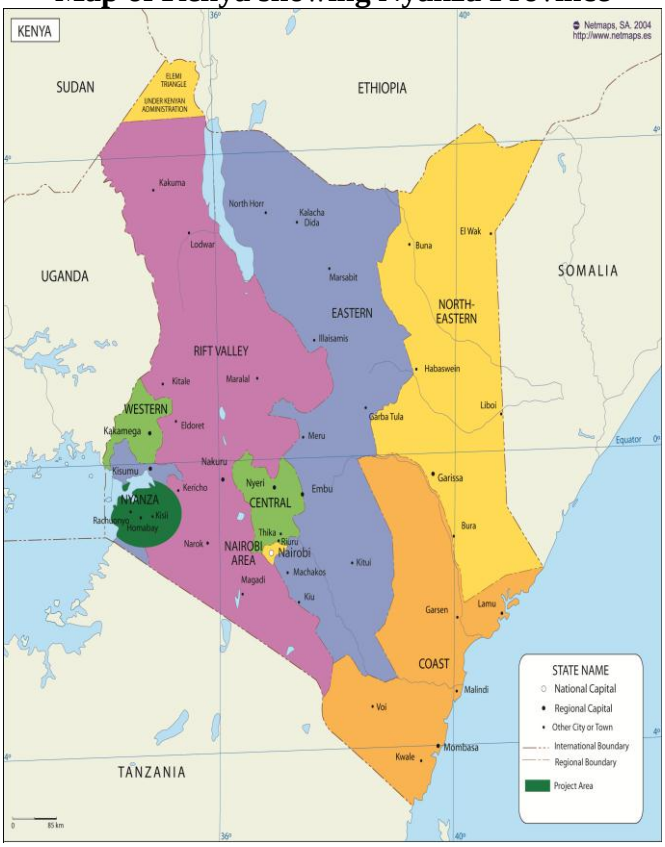
B. Other condition(s)

The Recipient shall, within six months of effectiveness of the project, submit an Implementation Manual acceptable to the AWF, for the operation of the Community Subproject Funding component, with performance indicators, clear criteria for selection for funding and means for accounting for the funds (2.4.10).

Kenya

Integrated Watershed Management for the Kibuon and Tende River Basins Project

Map of Kenya showing Nyanza Province



Map of the Project Area

These maps have been drawn by the African Development Bank Group exclusively for the use of the readers of the IWMKTBP Appraisal Report to which it is attached. The names used and the borders shown do not imply on the part of the Bank and its members any judgment concerning the legal status of a territory nor any approval or acceptable of these borders

Annex 2

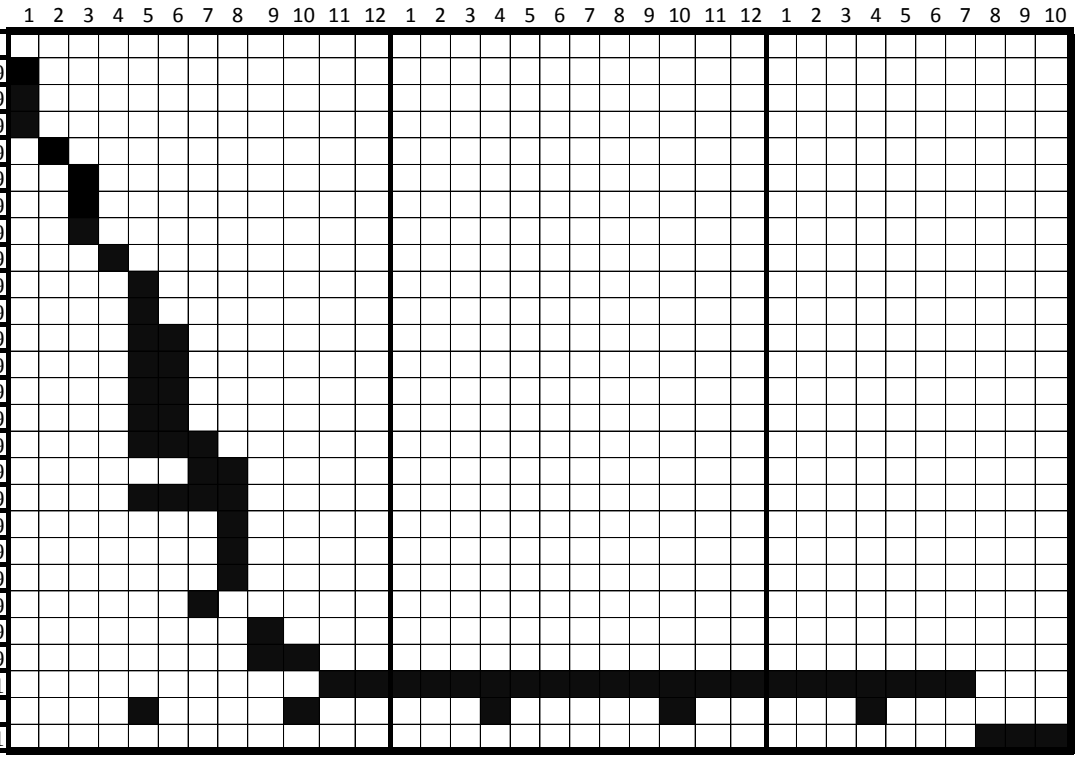
Composition of the KOSFIP Steering Committee

1. Ministry of Regional Development Authorities (Chair)
2. Ministry of Finance
3. Ministry of Water and Irrigation
4. Ministry of Agriculture
5. Ministry of Cooperative Development
6. Ministry of Livestock Development
7. Ministry of Environment
8. Ministry of Social Services
9. NEMA
10. KARI
11. Lake Basin Development Authority
12. District Development Committees (Homa Bay and Rachuonyo 3 reps)
13. Farmer Representatives 3 per scheme
14. WRMA

Annex 3

Implementation Schedule

	Activity	From	To
1	Grant Signature	Jan-09	Jan-09
2	Prepare and sign MOU	Jan-09	Jan-09
3	Open Special Accounts	Jan-09	Jan-09
4	Nominate Project Staff	Jan-09	Jan-09
5	Grant Effectiveness	Mar-09	Mar-09
6	Project Launching	Mar-09	Mar-09
7	Identification of collaborators at District levels	Mar-09	Mar-09
8	Identification of pilot block sites	Apr-09	Apr-09
9	Recruit Consultants/NGOs	May-09	May-09
10	Procure Equipment and Other Goods	May-09	May-09
11	Identification of CBOs	May-09	Jun-09
12	Support creation of WRUAs	May-09	Jun-09
13	Undertake Baseline Studies	May-09	Jun-09
14	Develop Reporting, M&E Arrangements	May-09	Jun-09
15	Sensitize of communities at block sites	Jun-09	Aug-09
16	Training for preparation of IWMPAPs/ proposal	Aug-09	Sep-09
17	Catchment Management Strategies prepared	Jun-09	Sep-09
18	Sub-catchment Management plans	Sep-09	Dec-09
19	WRUAs formed and operational	Sep-09	Sep-09
20	Conduct Training	Sep-09	Sep-09
21	Monitoring equipment installed and operationalized	Aug-09	Aug-09
22	Receiving and approval of IWMPAPs and	Oct-09	Oct-09
23	Approval of IWMPAP funding proposals from CBOs	Nov-09	Dec-09
24	Implementation of IWMPAP sub-projects	Jan-10	Sep-11
25	Monitoring and Reporting/Half-yearly Reports		
27	Project Completion Report	Oct-11	Dec-11



Annex 4

Project Cost Breakdown

Activities		Amount	Works Ext Contr	Works Comm Based	Goods	Ext Cons Services	Services Int Facil	Misc.	TOTAL
1. Community mobilization for the formulation of IWM Participatory Action Plan (IWMPAP)									
1.1 Awareness creation		10 000	0	0	0	0	7 500	2 500	10 000
1.2 Identification of blocks and focal areas		13 300	0	0	0	0	13 300	0	13 300
1.3 Identification of existing/creation of new CBOs (including sensitization of communities)		106 000	0	0	26 500	10 600	68 900	0	106 000
1.4 Training of communities in planning and formulation of participatory action plans (PAPs) for watershed management and preparation of funding proposals		117 860	0	0	23 572	11 786	76 609	5 893	117 860
1.5 Training of staff of supporting agencies and local service providers		36 850	0	0	0	0	36 850	0	36 850
Sub-Total		**284 010**	**0**	**0**	**50 072**	**22 386**	**203 159**	**8 393**	**284 010**
2. Capacity-building for water quality monitoring and management									
2.1 Improvement of water monitoring system (hydromet)		103 650	10 365	0	82 920	10 365	0	0	103 650
2.2 Preparation of Catchment Management Strategies and sub-catchment Management Plans		23 500	0	0	0	23 500	0	0	23 500
2.3 Formation of Water Resources Users Associations		15 000	0	0	0	0	15 000	0	15 000
2.4 Improvement to water quality monitoring(nutrient and SS)		43 100	0	0	43 100	0	0	0	43 100
2.5 Training of WRMA staff		11 000	0	0	0	0	11 000	0	11 000
Sub-total		**196 250**	**10 365**	**0**	**126 020**	**33 865**	**26 000**	**0**	**196 250**
3. Scaling Up and Financing IWM Interventions			0	0	0	0	0	0	
3.1 Implementation of IWMPAP sub-projects funded and implemented		405 000	121 500	162 000	40 500	0	81 000	0	405 000
3.2 Intra-community and community conservation activities funded and implemented		990 000	297 000	297 000	198 000	0	198 000	0	990 000
Sub-Total		**1 395 000**	**418 500**	**459 000**	**238 500**	**0**	**279 000**	**0**	**1 395 000**
4. Project Coordination		161500			58 000	50 428	53 072		161 500
Total Cost		2 036 760	428 865	459 000	472 592	106 679	561 231	8 393	2 036 760

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