

**RWANDA AND BURUNDI - MULTINATIONAL: INTEGRATED MANAGEMENT OF
TRANSBOUNDARY WATER RESOURCES OF LAKES CYOHOHA, RWERU AND
AKANYARU MARSHLAND PROJECT**

PROJECT CONCEPT NOTE

I. Project Information

1.1 Countries:	Republic of Burundi, Republic of Rwanda
1.2 Borrower / Grant Recipient:	Government of Burundi, Government of Rwanda
1.3 Sector:	Agriculture, Fisheries and Natural Resources Management
1 Status of project preparation: (e.g. identification and preparation missions undertaken, feasibility study carried out):	<p>The Project was identified based on the investment profile and Integrated Management and Development plan developed during the preparatory phase of Integrated Management of Transboundary Water Resources of Lakes Cyohoha and Rweru and Akanyaru Marshland project (GIRET project in French). The GIRET project was financed by the Bank through African Water Facility fund. The preparatory study started in May 2010 and was successfully completed in April 2012. It achieved its main outputs namely: i) Integrated Management and Development Plans (IMDP) for the three water resources and Investments Profiles (IP); ii) a Diagnostic Analysis with an environmental screening of the water-resources; iii) three hydro-meteorological stations operational and mechanisms for data collection and sharing of the shared water resources established; iv) 40 local key actors trained in fishery management and policy, environment and IWRM principles and law implementation.</p> <p>In order to build on these achievements of the preparatory phase, the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) and the two participating countries namely Rwanda and Burundi through the Regional Project Steering Committee (RPSC) met and approved the IP and IMDP for further development into project investment report. The areas identified for supports in the bid to ensure sustainable development and management of Lakes Rweru and Cyohoha Lakes and their Basins as well as the Akanyaru marshland - Fishery development, Irrigated Agriculture, rural infrastructures, Water monitoring and environment management, Social and handcraft development and gender. These have provided the necessary background information for the preparation of the Project. Furthermore, a Consultant was recruited in April 2012 by NBI to work with the NBI/NELSAP Team and the Regional Steering Committee. The output of this joint mission is the project preparation report which is presented for funding support.</p>
1.4 Implementing Agency: Is PIU set up solely for the project: indicate if project will use a PIU set by other development partners, or an earlier phase of the project.	The Regional Coordination Unit of the PAIRB project already operational will be the Coordination Unit of the Project and will responsible for coordinating implementation of project activities. In general, national level activities will be implemented by existing national institutions and mechanisms – with technical support to complement national capacities provided.
1.5 Indicate Country systems to be used:	Confirmation of the systems to be used will be done at appraisal.
1.9 Project implementation period:	TBD

II. Financing Information

2.1 Total Project Amount:	UA 60.60 Million
2.2 Co-financiers and amounts:	TBD
2.3 Government Contribution:	TBD

III. Country context

3.1 CSP / RAS/JAS priorities:	<p>The two pillars of the Regional Integration Strategy Paper (RISP) for East Africa economic block for the period 2011 – 2015 are on “supporting regional infrastructure development for greater competitiveness and enhanced trade” and “supporting institutional capacity building for stronger regional and national bodies of integration”. The proposed project on Integrated Management of Transboundary Water Resources of Lakes Cyohoha and Rweru; and Akanyaru Marshland (GIRET project) aligned with these pillars.</p> <p>The Project is also coherent with CSPs for Rwanda and Burundi which are in support of infrastructure to support economic growth and human capital development. In the Rwanda CSP for 2012 – 2016, the major pillars listed for Bank support are: i) Infrastructure Development; and ii) Enterprise and Institutional Development. The two strategic pillars of Burundi Results-based CSP for the period 2012-2016 are: i) Strengthening state institution and ii) Infrastructure improvement.</p>
3.2 Is project supported by identified areas of intervention in CSP:	Yes, as highlighted in 3.2 above. (More details provided in section 9.1 below)
3.3 PRSP or equivalent period:	<p>The Government of Rwanda EDPRS II for the period of 2012 – 2017 identified environment and natural resources as critical to Rwanda’s immediate and long term development in the issues of poverty eradication and release of the productive capacities of the poor. The Burundi GPRSF II accorded high priority to increase productivity in growth-bearing sectors such as agriculture, economic infrastructure, private sector promotion and youth employment. Also it emphasizes preservation of the environment and gender equality as key driver for development.</p>

IV. Compliance with Safeguard policies and strategies

4.1 Environmental categorization; has the categorization been validated by ORPC? (date)	Anticipated category is 2. Not Validated by ORPC as yet.
4.2 Environmental and Social Impact assessment undertaken? (Y/N, date)	Strategy environmental and social impact assessment done at preparatory phase. Detailed assessment per project activity not yet done.
4.3 Project involves resettlement? (Y/N)	No

V. Results Based Logical Framework

Hierarchy of Objectives	Expected Results	Reach (Target population)	Performance Indicators	Indicative Targets Timeframe/ Existence of Baseline	Assumptions/Risks
1. Project Goal Poverty reduction and reversing environmental degradation in Bugesera region (in Lakes Cyohoha, Rweru and the Akanyaru marshland)	Poverty levels reduced and livelihoods of local communities improved with consequent improvement in environmental quality.	Governments and the People of the Republic of Rwanda and the Republic of Burundi	-Level of poverty in the project area - State of the environment -Incidence of conflict over resources. <i>Sources:</i> NBI National Statistics District /Communal development reports	Proportion of the population living below the poverty line reduced from 60% to 40% by project completion Number of incidences of conflict reduced by 70% by 2019	Assumptions: Commitment of Governments of both countries to the declared objectives sustained Risks: political instability This is mitigated through strengthening of NBI which provides a forum for regional integration
2. Project purpose Sustainable utilization and management of water resources of the Lakes Cyohoha, Rweru and Akanyaru marshland	1) The agriculture production, fisheries resources and environmental quality improved in Lakes Cyohoha, Rweru and Akanyaru marshland 2) Improved income levels for the local communities in Bugesera region	Members of the riparian community in the project areas	1a) Food production rate 1b) Fish catch level 1b) Rate of Watershed restoration 2a)Poverty level among the local communities in basin 2b) Income per capita of the communities <i>Sources:</i> Catch data National Statistics of the two countries District /Communal Development reports Programme reports	1a) Agriculture production increase by 40% from the current level in 2012 (in the project area) by project completion 1b)Fish catches from the water bodies increase from about 40kg/ha to 200kg/ha by project completion 1b) 35% of the watershed restored by project completion 2a) Incidence of poverty among the local population reduced by 10% by project completion 2b) 20% increase in income per capita by project completion.	Assumption: Peace and stability. Government continued commitment to environmental policy harmonization. Risks: Civil conflicts Boundary disputes
Component A. Hillside Irrigation Agriculture Improvement and Integrated Watershed Management <i>Component cost: UA 22.6 million</i>					
A1. Develop cost effective and efficient method of hillside irrigation for improved crop production	1) Hillside irrigation developed using combination of three discharge mechanisms (Treadle pumps/thermal; electric or solar pumping) and three irrigation technologies (improved surface irrigation, micro sprinkler and drip) rain water harvesting measures	Member of the riparian community	1) Number of hectares of land irrigated on the Lake basins of Cyohoha, Rweru and Akanyaru marshland	1) 800ha 1,400ha and 2,000ha of land irrigated (including rain water harvesting measures) in Lakes Cyohoha and Rweru basins and Akanyaru marshland respectively for rice and horticulture farming in both countries by PY 5	Consolidating such large expanse of land for irrigations may be difficult based on the land tenure systems in the region Mitigation: The project design is anchored on the recent framework adopted by governments especially in Rwanda on land consolidation. Also the activity will first be carried out in small pilot phases before setting out to achieve the targeted land area.

Hierarchy of Objectives	Expected output/ timeline	Reach (Target population)	Performance Indicators	Indicative Targets Timeframe/ Existence of Baseline	Assumptions/Risks
2) Stalled Cattle breeding and improved milk production techniques promotion	2a) Quality dairy cows distributed 2b) Milk production level increased 2c) natural fertilizers production increased	Member of the riparian community	2a)-Number of dairy cattle distributed to pilot producers 2b)-Number of milk collection plants established 2c) Percentage increase in crop production	2a) 1280 dairy cow distributed to 320 pilot producer groups (50% of which are women)by the PY 2 in Burundi 2b) 24 modern milk collection plants established by PY 3 in Burundi 2c) 20% increase in crop yields of farmer using organic fertilisers by PY 6	High cost of energy for pumping water uphill. This is mitigated by combining alternative energy options (solar powered and electricity) in addition to use of fuels
3) Establish farmers' cooperatives	3a) Crop farmers grouped and structures into cooperatives 3b) Livestock farmers grouped and structured into cooperatives		3a) Number of crop farmers' cooperatives formed 3b) Number of livestock farmers' cooperatives formed	3a) 42 crop farmers cooperatives established in project areas (of which 50% of the members and managers are women) in both countries by PY 2 3b) 8 dairy producers' cooperatives created (with 50% women as members and management board) created by PY 2 in both countries	Conflict over boundaries
4) Improve crop production	4a) Improve rice seed varieties distributed 4b) Improve vegetable seedling distributed		4a) Number of hectares of land sown with rice seed varieties 4b) Number of hectares of land sown with vegetable seedling	4a) 3500 ha, 600ha and 3,500 ha of land in lakes basin of Cyohoha, Rweru and Akanyaru marshland sown with rice varieties by project completion 4b) 500ha, 400ha and 1,500ha land in lakes basin of Cyohoha, Rweru and Akanyaru marshland sown with vegetable seedling by PY 5	Mitigation: Involvement of all stakeholders in project design and clearly define use rights prior to project implementation
A2: Improve Livelihoods and Communities Adoption of IWRM Systems	1a) Management structures for the catchment resources established and strengthened.		1ai) Number of Catchment Based water resources management plans developed 1aii) Number of Catchment Management Organisation established	1ai) 12 Catchment based management plans developed by PY 3, with at least 4 management plans piloted by PY 5 1aii) 12 Catchment Based Management Organisation established by project completion	
1) Watershed protection and Improvement	1b) Natural resources degradation in riparian communities reversed 1c) Soil and water conservation methods developed 1d) Community based wetland management plans developed		1b)Improvement in basin vegetation cover 1c) Soil erosion and water sedimentation reduced 1d) Number of Community based wetland plans developed	1bi) 2,500,000 agro forestry and fruit trees with 300,000 local trees planted by PY 3 1bii) 765 ha of wetland and river bank areas restored by project completion 1c) 30% reduction in water sedimentation by project completion 1d) 6 community based wetland management plans developed by PY 3 1d) 3 community based wetland management plans piloted and implemented by project completion	
2) Water quality/quantity assessment and Pollution control	2a)Improved understanding of water resources status of the lakes Cyohoha, Rweru and Akanyaru marshland 2b) Bathymetric/hydrographic surveys of project areas 2c) Water resources monitoring network established 2d)Capacities in water quality management in basin enhanced		2a) Water resources information system and water quality database developed. 2b)Bathymetric surveys undertaken 2c) Number of water monitoring station established. 2di) Level of pollution released into lakes reduced 2dii) Hotspots of pollution sources in the basin identified	2a) Basin hydrological and water resources database established by project completion. 2b) Lakes Cyohoha, Rweru and Akanyaru marsland water resources model developed by PY 2 2c) 12 water monitoring stations rehabilitated /established in lakes Cyohoha, Rweru and Akanyaru marshland by PY 3. 2di) Local capacities to reduce pollution from hotspots enhanced by PY 4. 2dii) Point source pollutant released into the lakes from the catchment reduced by 50% by project completion	

3) Improve Livelihood	3a) Household water harvesting and ecological toilets technologies promoted 3b) Alternative energy saving technology demonstrated and knowledge disseminated		3a) Percentage adoption level of household water harvesting and sanitation technologies promoted 3bi) Number of wood saving stove distributed 3bii) Number of biogas digesters distributed 3biii) Proportion of household adopting fuel saving technology	3a) 70% adoption level of these technologies achieved by project completion 3bi) 1,400, 500 and 1,400 wood saving stove distributed to people (65% to be distributed to women) around Lakes Cyohoha, Rweru and Akanyaru marshland respectively by PY 4 3bii) 310 biogas digesters distributed by PY 4 3biii) 60% adoption level achieved by project completion	
Hierarchy of Objectives	Expected Outputs/ timelines	Reach (Target pop)	Performance indicators	Indicative Target Timeframe/Existence of baseline	Assumption/Risks
Component B. Fisheries Resources Development and Improvement <i>Component cost: UA 8.2million</i>					
1. Develop systems for Lakes Fisheries Monitoring, Control and Surveillance (MCS) and Information Management 2. Integrated management of Aquatic invasive weeds and conservation of aquatic biodiversity 3. Fish stock improvement 4. Catch Assessment (Frame survey), Fish stock and catch assessment 5. Aquaculture development 6. Improved Livelihood for fisher folks	1a) Establishment of Fisheries Cooperatives 1b) Improved compliance with approved fishing practices 1c) Fishery information system developed 2a) Proliferation of aquatic weeds on Lakes Cyohoha, Rweru and Akanyaru marshland controlled 2b) Status of aquatic biodiversity improved in Lakes Cyohoha, Rweru and Akanyaru marshland 3) Lakes Cyohoha and Rweru restocked with Tilapia seeds 4) Improved data on fish stock for effective management of fisheries resources 5a) Pilot cage culture sites established 5b) Community based fish hatchery created 6a) Improved levels of incomes. 6b) Alternative source of livelihood developed	Member of the riparian community	1ai) Number of Fisheries Cooperatives established 1aii) Catch per unit effort improved 1b) Number of infractions recorded 1c) Establishment of Fishery information database 2a) Suitable and sustainable means for removing aquatic weeds in the lakes adopted (manual and biology methods). 2b) Data on biology and distribution of species in the Lakes Cyohoha, Rweru and Akanyaru marshland collected and documented. 3) Number of juveniles of Nile Tilapia stocked 4) Status of fish stock and CPUE established 5a) Number of cage culture sites established 5b) Number of community based fish hatchery created 6a) Number of fisher organizations benefited from micro-project 6b) Number of households involved in alternative income generating activities	1ai) 2 and 7 fishermen cooperative formed (with 30% female membership) in Rwanda and Burundi respectively by project completion 1aii) Fish catch rate increases by 50% by Y3 1b) 50% reduction in number of infraction by project completion 1c) Fishery information system and database established by PY4 2ai) 70% reduction in aquatic weeds density in lakes Cyohoha, Rweru and Akanyaru marshland by PY4 2aii) Contract for manual removal of weeds established with fisheries cooperatives in the project areas by PY2 2aii) 75% of the infested areas inoculated with biology control agents by PY 3. 2b) 14 sensitive reproductive areas in Lakes Cyohoha and Rweru have been protected from harmful fishing practices by PY2013. 3) 1,000,000 juveniles of Nile Tilapia stocked in the Lakes Cyohoha and Rweru by PY 2 4) Data on fish stock composition and distribution established by PY 2 5a) 40 pilot fish cages established in Lake Cyohoha by 4 fishermen cooperatives by PY 3 5b) 4 community based fish hatchery established in PY 2 6a) 90% of fisher organisation benefited from micro-project by project completion 6bi) 4,500 households involved in alternative income generating (e.g. utilisation of aquatic weeds for craft production) activities by project completion 6bii) 50 micro-projects (25 for the diversification of activities and 25 for lake transport) have been supported for the most vulnerable population groups (of whom 50% are women) by project completion	Assumption: Timely enactment of legislation and policy changes on natural resources management and reflection of these in countries National Natural Resources sector strategic plan. Risks: Conflict over use of resources Lack of financial capacities for municipalities to implement technologies promoted Mitigation: Involvement of all stakeholders in project design and clearly define use rights prior to project implementation

Hierarchy of Objectives	Expected output/ timeline	Reach (Target pop)	Performance Indicators	Indicative Targets Timeframe/ Existence of Baseline	Assumptions/Risks
Component C. Rural Infrastructure Development					
<i>Component cost: UA 25.8 millions</i>					
1) Develop water resources related social and economic infrastructure 2) Develop basic infrastructure for fish safety and quality assurance	1) Water supply and sanitation condition in the watershed areas improved 2) Improved fish quality and basic infrastructure provided	Member of the riparian community	1a) Number of public toilets 1b) Number of rural water supply system established 2a)Number of health centre and school 2b)Number of landing sites with improved fish handling infrastructure, sanitation and hygiene facilities 2c)Access to markets	1a) 50 public toilets constructed by PY 3 1b) 20 solar powered boreholes constructed by PY 4 2a) 8 health centres and 8 blocks of two classrooms constructed by project completion 2b) 28 landing sites improved with basic infrastructure and equipment (concrete areas and jetties, sheds, scales and refrigeration facilities) by project completion 2ci) 779 km of feeder roads to landing site rehabilitated by project completion 2cii) 50 fish stalls established in 8 rural markets by project completion 2ciii) 20 post harvesting infrastructures established	
Component D. Capacity Building and Project Management					
<i>Component cost: UA 4.0 million</i>					
1)Develop institutional framework for management and dispute resolution on transboundary water resources by the two countries 2) Develop capacity of stakeholders 3)Project Management and Coordination Sources of funds (UA million) ADF - 55.0 GoB – 2.5 GoR – 2.5 NBI - 0.30 Beneficiary – 0.30 Total - 60.60	1) Institutional framework for managing, utilization and dispute resolution on trans-boundary water resources established and operational 2) Training of farmers, cooperatives, extension workers and staff of local, national and regional institutions on project related activities 3) Ensure project coordination and management	Member of the riparian community. scientist, managers of the transboundary water resources and other users	1)Legal and policies for sustainable utilisation of the transboundary agriculture, fisheries and water resources harmonised 2a)-Number of national and local level staff trained 2b)-Number of local population and groups trained 2c-)Level of adoption of new techniques by basin communities 3)The Project Coordination Unit submits periodically satisfactory progress and audit reports to the two Governments and to the Bank.	1) Bilateral agreement signed by the riparian states by PY 2013 1b) Establishment of regional institutional structure for management and dispute resolution between two countries and operational by PY 2 2ai) 80 agriculture, fisheries, water and environment staff, 20 local government administrators, 10 agriculture, fisheries and water scientists, 10 police and judiciary staff trained by project completion 2aii) 1,000 farmers/fisher folks and 50 cooperatives trained by Project completion (35% of the people trained are women) 2b) 20 training courses/ workshops and field days organized with a total of 4,500 beneficiaries by project completion 2c) 40% adoption level of new technology by basin resources users trained; out of which 50% are women 3)No slippage on project performance and timely audit report submissions	Assumption: Any political constraints between the two countries will be resolved at council of ministers. Stakeholders cooperation in proposed institutional and management framework for the tranboundary water resources

V. BACKGROUND

5.1 The project area (Lakes Cyohoha, Rweru and Akanyaru marshland) has experienced a steady decline in the level of ecosystem services from being the food basket of Rwanda and Burundi in the 1960s with widespread forest area and plenty of rainfall to its current status of frequent drought, soil erosion and lack of grazing land.

The project area is characterized by high level of poverty due to reoccurrences of drought and famine apart from the fact that it is surrounded by Lakes Cyohoha, Rweru and Akanyaru marshland providing potential for agriculture. The region suffers chronic food insecurity due to the scarcity of land and severe soil erosion. The situation in the area is further aggravated by high population density and growth rate. To improve the significantly food security situation and reverse the trend in environmental degradation in this region, there is need for creation of conditions for the cross-border region's sustainable utilisation and management of the natural resources. The best way of achieving these is through planned, coordinated and joint development actions by both countries (Rwanda and Burundi).

This project is therefore necessary as it will boost food production in the region while preserving and conserving Lake Cyohoha and Rweru; and Akanyaru marshland water resources by ensuring harmonized and transparent agriculture, fisheries and water resources development, management and utilization. Also, to ensure sustainable management of the basin and avoiding deforestation, the project will put in place necessary safeguards to drastically reduce siltation of the lakes and ensure better soils husbandry.

5.2 In the project area, there is continuing land degradation and loss of soil fertility caused by population pressure and simple farming methods. Virtually the only source of energy is biomass, contributing to the deforestation. The soil erosion results in an increased nutrient load in the lakes leading to problems with water hyacinth and eutrophication. There is also insufficient water for household use and for grazing. Wetlands are exploited and degraded. Malaria and diarrhoea are endemic, and also the problem of HIV/AIDS is still within the region. In parts of the area, women-headed households are the majority because of the decimation of men by conflicts and disease, but women are disadvantaged in a variety of ways.

Rampant overfishing and use of illegal fishing methods, degradation of sensitive spawning grounds and nursery areas are common phenomena in the two lakes and Akanyaru marshland. These have led to decrease in the volume of fish caught. Also, the fisheries sector is constrained by various factors, among which are poor management and degradation of the resource (high fishing pressure leading to overfishing, use of inappropriate gears, pollution, misalignment of legal and regulatory management framework, inadequate numbers of qualified personnel, and lack of up to date information); and inadequate infrastructure, difficulties in marketing due to remoteness of principal agricultural and fishing areas and post harvest losses. The proposed Project would provide an enabling environment for addressing these key issues affecting the sustainable management of the Lakes Cyohoha and Rweru; and Akanyaru marshland environment, fisheries and water resources.

5.3 Lastly, the NBI on behalf of Governments of Rwanda and Burundi was able to secure a grant from the Bank under African Water Facility (AWF) in May 2010 to carry out the project preparation activities for the Integrated Management of the transboundary Water Resources of Lakes Rweru and Cyohoha and Akanyaru marshland (Projet GIRET in french) which was completed in 2012. The key outputs produced from this preparatory project were i) a proposal for Integrated Lakes Management Plans for the three water resources and Investments Profiles (IMDP and IP) ; ii) result of diagnostic analysis with an environmental screening of the water-resources following the RAMSAR guidelines which can be utilized by the countries in their process for registration to this Convention; iii) provision of equipment for water monitoring; iv) Capacity building of technical expert in water monitoring.

The Governments of Rwanda and Burundi have therefore requested the Bank to finance this proposed project which is a consolidation of the project proposals that were identified by the GIRET preparatory phase.

5.4 Donor Coordination: The two participating countries have in place an aid coordination mechanism which is operational. The Government of Rwanda annually organises a Forum of Development Partners. All donors are invited to the Forum. In addition, there is also a Development Partners Coordination Group

comprising Government and development partner representatives whose role is to discuss the planning and implementation of development programmes and foreign aid coordination. The Budget Harmonization and Support Group, which comprises donors intervening in budget support, is a platform for discussion and harmonization of budget support approaches. The Government and development partners jointly developed a performance evaluation framework for monitoring the Economic Development and Poverty Reduction Strategy Paper for the period 2008-2012. In Burundi, the Government has set up a National Aid Coordination Committee which includes a Permanent Secretariat and Thematic Working Groups, including an agriculture working group. Bank Field offices have been established in both countries, and FO personnel are instrumental in country dialogue, portfolio management and coordination with other development partners. Lastly, Bank Group has a strategic partnership with the World Bank on the economic integration of the Nile Basin Region; the pilot phase was jointly appraised with the World Bank in March 2003.

VI. PROJECT RATIONALE

6.1 PRSP and CSPs priorities, key development issue (s) project is aiming to address:

6.1.1 The two pillars of the Regional Integration Strategy Paper (RISP) for East Africa economic block for the period 2011 – 2015 are on “supporting regional infrastructure development for greater competitiveness and enhanced trade” and “supporting institutional capacity building for stronger regional and national bodies of integration”. The proposed project on Integrated Management of Transboundary Water Resources of Lakes Cyohoha and Rweru; and Akanyaru Marshland (GIRET project) aligned with these pillars. The Project is also coherent with CSPs for Rwanda and Burundi which are in support of infrastructure to support economic growth and human capital development.

6.1.2 In the Rwanda CSP for 2012 – 2016, the major pillars listed for Bank support are: i) Infrastructure Development; and ii) Enterprise and Institutional Development. These pillars aligned with the Government of Rwanda EDPRS II for the period of 2012 – 2017 which identified environment and natural resources as critical to Rwanda’s immediate and long term development in the issues of poverty eradication and release of the productive capacities of the poor. The Burundi GPRSF II accorded high priority to increase productivity in growth-bearing sectors such as agriculture, economic infrastructure, private sector promotion and youth employment. Also it emphasizes preservation of the environment and gender equality as key driver for development. The two strategic pillars of Burundi Results-based CSP for the period of 2012-2016: i) *Strengthening state institution* and ii) *Infrastructure improvement* are anchored around the GPRSF II.

6.1.3 The Banks priority areas as stated in the Bank Group Mid-Term Strategy are aligned with the project objectives. The above CSPs of Rwanda and Burundi are also in line with the aim and planned activities of the project which focus on the creation of an enabling environment and strengthening the legal, policy, institutional and regulatory framework for sustainable management of natural resources and protection of the environment. Also the project agenda of promoting better use of water and fisheries resources, encouraging private sector developments, as well as strengthening of governance, and participatory processes in natural resource management and environmental conservation is in line with the orientation of Rwanda’s EDPRS II - (2012 – 2017) and Burundi GPRSF II (2012-2017).

6.2 Why the Bank Group should intervene:

6.2.1 The project area supports the livelihoods of about 834,000 people, the majority of whom are rural, directly dependent on subsistence farming, herding, and fishing activities. Recently, this area has faced with serious challenges especially in the area of poor land management and series of rainfall shortages. These major challenges are also impacting negatively on community livelihoods in terms of food security, income generation and employment. Most of these people lack the capacity needed to ensure improved land and water resources management. The two countries (Rwanda and Burundi) located within these shared water resources are faced with the threat of land degradation, deforestation, proliferation of water hyacinth, municipal pollution, encroachment on wetlands, and loss of associated biodiversity. Although these threats

are of great importance to the integrity of these lakes and wetland ecosystem as a whole, they also result in direct negative impacts in Burundi and Rwanda, affecting the economic perspectives and quality of life of local communities in both countries. For instance, 60% and about 90% of the population within project area in Rwanda and Burundi respectively live below the poverty line, compared to a national average poverty level of 56.9% (Rwanda) and 67% (Burundi). It will be therefore of great regional and national interests that the current situation in these areas is reversed.

6.2.2 This project will address priority challenges identified during the GIRET preparatory phase in the area of poverty reduction, promotion of economic growth and reversing environmental degradation in the region. The project will also help to further improve regional consultation and cooperation, which will help (in both medium and long term), to reduce potential sources of conflict in this region where a socio-political crisis has been raging and insecurity is persistent. The investment profiles listed in the Bank funded GIRET preparatory project if implemented in the proposed project will provide a strong basis for poverty reduction in the Lakes basin communities through sustainable exploitation of the country's natural resource base and environmental awareness creation. The Government of Rwanda and Burundi therefore requested the Bank to finance the proposed project so as to ensure the implementations of the Integrated Management and Development Plan, and Investment Plan as presented in the GIRET preparatory phase.

6.2.3 Regional integration is at the core of the ADB Group's mandate, and it has attached priority towards this since its establishment by investing significant resources, both financial and non-financial in supporting regional integration initiatives throughout the continent. The Bank's Medium Term Strategy for 2008-2012 also identified the regional integration as an area of increased focus. In addition, the project is based on the wish of the Governments of Rwanda and Burundi to encourage regional collaboration in support of good governance, poverty reduction and income generation in the management of the Regional Public Good (such as Lakes Cyohoha and Rweru; and Akanyaru Marshland); effective collaboration in the management of environment. The Bank's intervention will promote among other- community level, national and regional coordination of shared resources so as to ensure sustainable utilisation of the lakes resources. Key issues to be addressed in this project are bordered on equitable and reasonable utilisation of shared water resources; obligation not to cause significant harm to co-riparian's and information sharing. The Bank's involvement will also contribute to the achievement of these commitments. Finally the project will help to promote peace in the region by encouraging the confidence building process between the two neighbours and thus assist in the reducing political tension which is common occurrence in the region. Therefore, the project meets the eligibility criteria of the Bank's "Strategic and Operational Framework for Regional Projects".

VII. PROPOSED DEVELOPMENT OBJECTIVES (INCLUDING CROSS-CUTTING ISSUES) AND PROJECT OBJECTIVES (SHOULD BE SAME AS SPECIFIED IN LOGFRAME)

The sector goal is poverty reduction and reversing environmental degradation in Bugesera region with special attention on lakes Cyohoha, Rweru and Akanyaru marshland. The project objective is to have a coordinated and sustainable development, management and utilization of the Lakes Cyohoha, Rweru, Akanyaru marshland environment, including water and fisheries resources production.

VIII. PROJECT DESCRIPTION

8.1 The project has four components namely 1) Hillside Irrigation Agriculture Improvement and Integrated Watershed Management; 2) Fisheries Resources Development and Management; 3) Rural Infrastructure Development and 4) Capacity Building and Project Management.

COMPONENT 1: Hillside Irrigation Agriculture and Integrated Watershed Management: This component aims at ensuring improved and sustainable all year round crop and livestock production while also putting in place measures aimed at restoring and reversing rate of degradation of the environment in the Lakes Cyohoha, Rweru and Akanyaru Marshland. Under this component, 800 ha of land shall be opened up for irrigation in Lake Cyohoha representing 400ha (Rwanda) and 400ha (Burundi); 1400 ha of land will also be opened up for irrigation in Rwanda (700ha) and Burundi (700ha) on Lake Rweru and 2000 ha in Akanyaru Marshland will be put under irrigation with 800 ha and 1200ha of the land located in Rwanda and Burundi

respectively. The technology options to be used will include application of combination of three discharge mechanisms (Treadle pumps/thermal; electric or solar pumping) and three irrigation technologies (improved surface irrigation, micro sprinkler and drip irrigation) in addition to rain water harvesting measures. The project will support irrigation technology option that will be easy to manage by the local people and sustainable in the project area. Also, this component will be implemented through the training of agronomists and agricultural irrigation technicians, and the promotion of autonomous irrigation around the lake shores

Other major activities in this sub component include - stalled cow breeding and improved milk production techniques promotion in Burundi; establishment of crop and livestock farmers' cooperatives, improvement in crop production level through distribution of seeds of high yielding crop varieties to the farmers.

The need for integrated watershed management of transboundary water (as stated in this component) is based on the facts that the water resources in the project area are recognized as trans-boundary water resources with cross-cutting interests spanning from economic sectors, legal jurisdictions, or political interests, to individual irrigators and environmental advocates, urban versus rural uses, and the nations that share these international waters. Therefore, managing the project areas water resources in an integrated approach is important to meet these diverse values and needs of peoples at local, national, regional, and international scales. Thus under this sub- component, the project will undertake to support : a) Management of Catchment and Wetland; b) Assessment of Water Quality and quantity and c) Support of Alternative livelihoods. This component will therefore support the two countries efforts to sustainably manage the shared water resources through bathymetric analysis of the lakes, improved water monitoring network and data sharing as well as periodical environmental assessment of the water resources. The component will also support the two countries and communities' efforts to reduce Lakes Cyohoha, Rweru and Akanyaru marshland pollution by as much as 60% in 2020, through public awareness, promoting urban waste management systems and by strengthening local capacities on water and soil conservation. The project will promote effective municipal (liquid and solid) wastes management; integrated soil and water conservation in the catchment area as well as afforestation effort and sustainable community based wetland. The Component will support: feasibility studies on alternative sources of income targeting fisher folk; sensitise fisher folk and build their capacity in business skills, community savings and credit schemes to support investment in alternative income opportunities; linkages with government and other development partners for improved provision of social services for riparian communities' improved livelihood.

COMPONENT 2: Fisheries Resources Development and Improvement

This component will address the basic problems identified in the management and development of fisheries resources of the Lakes Cyohoha, Rweru and Akanyaru marshland. These identified problems include: a) Inadequate knowledge on the status of fish stocks making it difficult to establish sustainable levels of fishing; b) Loss of biodiversity; c) inadequate facilities for seed multiplications and artificial propagation for restocking and stock enhancement; improper and un-gazetted breeding/ nursery grounds among other problems. To address the above listed management issues, the project will invest in Monitoring, Control and Surveillance Systems and Management Information Systems. The component will also facilitate studies and establishment of databases (limnology, inventories of contaminants), support legal reform and institutional collaboration, infrastructure development and watershed management and environment protection activities. All these will contribute to the development of a Regional Monitoring, Control and Surveillance (MCS) Strategy and Action Plan. The acquisition of the equipment for the surveillance and monitoring would be accorded high priority in the implementation of this component.

The component will support the necessary scientific cum socio economic study to determine the fish stock and the allowable sustainable level of fish catches. Also the project will ensure improvement in the fisheries stock through series of restocking programme in Lakes Cyohoha and Rweru. Also the capacity of the local communities will be enhanced in fish seed production through the establishment of community fish hatcheries around the project areas. Aquaculture development programme will also be supported through introduction of cage culture in Lake Cyohoha. This is part of measures aimed at reduction of the fishing pressure on the Lakes fisheries resources.

COMPONENT 3: Rural Infrastructure Development

To improve access to the market and improve quality of life of the people in the project zones, the project will support provision of key infrastructures in the Lakes Cyohoha, Rweru and Akanyaru marshland. To this end, the project will support the rehabilitation/construction of 779km of road; and construction of landing sites (for fish quality assurance and improved navigation activities).

Also the project will support activities aimed towards improvement of sanitation in Lakes Cyohoha, Rweru and Akanyaru marshland. The project will finance the provision of toilets and waste management facilities. Also infrastructures such as schools, markets and post harvest infrastructures – modern crop storage and drying facilities, fish drying platform and smoking kilns will be put in place through the project supports.

COMPONENT 4: Capacity Building and Project Management

Under this component, activities relating to the establishment of Lake Cyohoha, Rweru and Akanyaru Marshland Transboundary Management Committees will be supported. Other major activities include i) improving and updating policy and regulatory frameworks in relation to management of Lakes Cyohoha, Rweru and Akanyaru Marshland Transboundary natural resources; ii) strengthening of regional, national and local institutions, and iv) establishing a regional monitoring and communication system.

The project, under this component, will also finance information and sensitization programmes for the communities. These will focus on *responsible farming, fishing practices* and *water utilization methods*, improved food processing and preservation techniques. The project will finance local training sessions for fishers and catchment based organizations on responsible farming, fisheries, the processing and conservation of products, health standards, reduction of post-harvest losses, and the management of micro-enterprises and associations. The project will also support training programme of senior staff and technicians and local institutions responsible for agriculture, livestock, fisheries, the environment and fisheries research on participatory approach, monitoring, inspection and surveillance of fisheries, environmental protection, stock evaluation, quality control, agriculture economy, monitoring and evaluation and fisheries development. Lastly, workers from local authorities, 40% of whom will be women, will participate in various local training courses, notably in the formulation and monitoring of community micro-projects, gender issues and the participatory approach. The component will also facilitate support to micro-projects for communities in the project zones of influence.

The Component will support: feasibility studies on alternative sources of income targeting fisher folk; sensitise fisher folk and build their capacity in business skills, establish and organise savings and credit cooperatives to support investment in alternative income opportunities; linkages with government and other development partners for improved provision of social services for fishing communities' management

This Component will make provisions for NBI and its supporting institutions at the national and local level in the management of the Project. Provisions will be made for a small management team within the set up of the NBI. The management team will include Agronomist, Livestock Development Specialist, Fisheries Development Expert, Financial Management Expert, Economist and Social Development Expert.

8.2 Project implementation arrangements:

The PCU-PAIRB Project already operational shall be responsible for the project implementation activities at the regional level. It will also be in charge of the management of ADF loan and grant resources, monitoring and evaluation of project activities in the project areas, as well as control and monitoring of the activities of Project Coordination Units (PCU). It will also coordinate the activities leading to the creation of regional water resources management committee between the two countries through the project support.

The project activities that are transboundary in nature will be implemented by PCU-PAIRB while other programme activities will be implemented at the national and local levels as the case may be. The respective departments/ministries (agriculture, fisheries, water resources and environment) will take the lead role in implementing all project related activities. The role of PCU-PAIRB is to ensure coordination between all players at local, national and regional levels prior to the establishment of regional coordinating body.

At the national level, the programme activities will be implemented through the existing national institutions and mechanisms. At this level, key ministries such as ministries of Agriculture, Natural Resources and Environment shall be part of the PCUs in both countries. These ministries will work in collaboration with the executing agencies by providing technical assistance to coordinate, control and monitor the implementation of the work programme and the annual budget. Also they will be responsible for preparing bidding documents, drawing up financial statements, and managing special accounts. The programme will make available technical support to complement national capacities wherever such capacity is required

The project will make use of Technical assistance (TA) in some key areas in project implementation. These will include (at the regional level), Agronomist, Irrigation expert, livestock specialist, a fisheries planning, water resources expert and a financial management expert. At national level (Rwanda and Burundi), the TA will be composed of livestock specialist, Agronomist, a fisheries and water resource experts. The coordination units will receive the technical, financial and material resources required for the proper implementation of activities.

8.3 Procurement and financial management arrangements: All procurement of goods, works and acquisition of consulting services financed by ADF will be in accordance with the *ADF Rules and Procedure for Procurement of Goods and Works*, or as appropriate, *Rules and Procedure for the Use of Consultants*, using the relevant Bank Standard Bidding Documents.

8.4 Expected/designed cross-cutting focus/benefits: The project aims to achieve its core objective of poverty reduction by supporting activities that will ensure improved environmental management and sustainable management of natural resources of Lakes Cyohoha, Rweru and Akanyaru Marshland. In addition, the project will contribute to creation of more jobs for local communities in the regions. The project will also contribute to improved governance in the environmental sector.

The majority of the population in the Bugesera region depend on natural resources for their livelihood. The project aims to halt deterioration of natural resources and to start a process that will support the trend towards sustainable natural resource management and protection of the environment and promotion of alternative income sources, diversification of welfare. Women will be particularly encouraged to take a leading role in project implementation as well as being part of various cooperatives and Basin Users committees to be formed during the project life.

The project will be classified as Environment Category 2 given that significant adverse environmental and social impacts are not expected due to the nature of the proposed activities that focus on institutional development, fisheries development and integrated water resources management. The project aims to reduce and reverse environmental degradation in critical lake catchment areas. As such, positive environmental and social impacts are expected from project interventions. All sensitive ecosystems will be identified and mapped out in the Environmental and Social Management plan which will be prepared to ensure that appropriate mitigation measures are established to address all potentially adverse environmental and social impacts including monitoring of environmental and social indicators. The major environmental challenges faced by the lakes are related to indiscriminate pollution of the water and the degradation of natural forest in catchment area. The project will focus specifically on watershed management and on monitoring water quality and quantity – both activities which are under component 1 – to maximize the environmental benefits of the project while minimizing any adverse impacts. The activity on promoting alternative income sources to the communities around the lakes will generate positive social impacts by improving the livelihoods of the communities.

8.6 Necessary steps to obtain baseline data (such as consultant study, if not available):

Wide range of data generated during the GIRET preparatory phase will serve as the baseline data. In addition the project profiles prepared by NELSAP/NBI have been quite useful in providing additional background data. Following from these is the draft preparation report which was produced with the assistance of a Consultant engaged by NBI. During appraisal mission, these data would be updated and validated.

8.7 Specific required feasibility/technical studies? The project will make use of enormous technical data generated during Bank-funded GIRET preparatory study especially in relation to environmental sector. These data were used in the project design. There is therefore no need for any other feasibility studies.

8.8 Participatory process/ Public consultations: A wide cross-section of the population was consulted during the GIRET preparatory study implementation. A detailed stakeholders' analysis was carried out. Through the stakeholders' consultations, the positive and negative roles of each of the stakeholders in the water basin were identified and proposed interventions mechanisms were recommended. This extensive stakeholder's analysis was followed up with a focal group meetings during the project preparation mission. Officials of Government Ministries, Non-Governmental Organizations, local communities and representatives of donor's resident in both Rwanda and Burundi were consulted during the project preparation activities. The project design provides for basin-wide environmental awareness campaigns as well as participatory management of NRM initiatives.

8.9 Monitoring Arrangements: (will M&E use project resources or based on/integrated with national, sector, or PRSP?). What is initial assessment of M&E capacity?: _PCU-PAIRB_ will be responsible for monitoring project implementation, based on participatory M&E reports from participating agencies and other technical experts, as well as feedback from the project beneficiaries. Technical support will be provided to set up an M&E System and train PCU-PAIRB staff. Project progress reports will provide regular update on key indicators of project performance; information on project implementation; progress achieved against physical targets and disbursement schedules; and highlight key issues, constraints, problems and recommended solutions.

IX. POTENTIAL RISKS AND MITIGATION MEASURES

9.1 Expected risks of high impact or high probability of occurrence and proposed mitigation measures:

The major risks that may affect the implementation of project activities are the issues of the capacity of farmers in this region to master irrigation technologies to be deployed in the project area. This may reduced the project ability to open up all the areas proposed for irrigation. This will be mitigated by ensuring that the national project units is assisted by two irrigation engineers with proven experience in irrigation design and organizing farmers. In addition, the agricultural policies of the two countries for developing irrigation and the planned enforcement of appropriate legislation to promote this method of harnessing water will be another factor for the success of irrigation. The project design will also ensure that implementation of this subcomponent will be done with caution as in which two sites of about 100 ha each (one site per country) are equipped with irrigation equipment and are put under cultivation before starting development works for the entire surface areas as envisaged. These sites will further serve as demonstration plots for future irrigators in the project area.

Another risk is the issue of insecurity in the region, impediments to the free movement of persons and goods, and lack of regional cooperation. This is mitigated through consultations within the framework of regional transboundary management committee and NBI will help to strengthen this regional cooperation by facilitating this process.

The other possible risk is that the strength of the commitments by the two Governments would fail to sustain a regional Integrated Management and Development Plan (IMDP) for the water bodies. This may express itself through inadequate budgetary arrangements to fund the Regional Secretariat and its linkages, erosion over time of the powers given to such institutions, or unwillingness, or lack of capacity to follow-up on regional regulatory decisions or guidelines through enforcement at the national level. However, since the two countries started collaborating well during the preparation of IP and IMDP; and since the proposed IMDP and IP provide many opportunities for low-risk collaboration on technical issues, which should build confidence steadily during project preparation and implementation; any waning commitment would seem likely to arise only from sources external to the IMDP.

X. CONCLUSION

The project is a priority for the governments of Rwanda and Burundi. This project is multi-sectoral and integrated in its design. It aims at addressing issues of poverty, gender, climate change and environment and it also ensures a holistic approach to sustainable management of the natural resources in the project areas. It will make use of lessons learnt drawn from other similar ADF's supported regional projects by ensuring a participatory approach of beneficiary communities and identified stakeholders at all stages of the project management. This project is therefore aligned with the Bank Group Vision Statement and Strategic Plan and Country Strategies Paper for Rwanda and Burundi that focus on poverty reduction, regional integration and private sector development. Also the project is anchored around the Bank Group Strategic Partnership with the World Bank and other development partners on the economic integration of the Nile Basin region.