E4579 V2

REPUBLIC OF RWANDA

Landscape Approach to Forest Restoration and Conservation Project

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF) AND SOCIAL ASSESSMENT (as a separate annex)

June, 2014

TABLE OF CONTENTS

GLOSSARY OF TERMS

- **Cumulative impacts/effects:** The total effects on the same aspect of the environment resulting from a number of activities or projects.

- **Developer/Proponent/Sponsor:** the entity – person/ company/ agency - proposing to develop/implement/install a new project/sub- project or expand an existing project under the LAFREC.

- **Direct impacts: An** effect on the environment brought about directly by the LAFREC projects.

- **Disclosure:** Information availability to all stakeholders at all stages of the development of projects.

- **Environmental impact assessment (EIA):** A comprehensive analysis of the project and its effects (positive and negative) on the environment and a description of the mitigation actions that will be carried out in order to avoid or minimize these effects.

- **Environment:** physical, biological and social components and processes that define our surroundings.

- **Environmental Monitoring:** The process of examining a project on a regular basis to ensure that it is in compliance with an Environmental Management Plan (EMP).

- **Involuntary resettlement:** The forceful loss of land resources that requires individuals, families and/or groups to move and resettle elsewhere.

- **Impact:** A positive or negative effect that a project has on an aspect of the environment.

- **Indirect impact:** A positive or negative effect that a project indirectly has on an aspect of the environment.

- **Lead Agency:** The agency with primary responsibility for the protection of the environment. For instance, the lead agency for environment matters in Rwanda is Rwanda Environment Management Authority (REMA).

- **Mitigation measures:** The actions identified in an EIA to negate or minimize the negative environmental impact that a project may have on the environment.

- **Pollution:** contamination altering the state of purity (e.g. chemical effluent discharge into a surface water body).

- **Project and sub-project:** a set of planned activities designed to achieve specific objectives within a given area and time frame. With respect to the LAFREC, Project, the terminology can be confusing. The project in World Bank terms is the LAFREC project; and all proposals subject to intermediary loans are subprojects.

- **Project Brief:** The initial submitted document to REMA to initiate the process that will lead to the issuance of the EIA certificate of approval.

- **Scoping:** The initial stage in an environmental assessment that determines the likely major environmental parameters that will be affected and the aspects of the project that will bring upon these effects.

- **Screening:** An initial step when a project is being considered for environmental assessment. The screening is the determination of the level of assessment that will be conducted. In the case of GoR, screening will place project into one of three Impacts Levels (**IL1, 2** or **3**).

- **Significance:** Importance.

- **Significant effect:** An important impact on an aspect of the environment.

- **Stakeholder:** Any person or group that has an interest in the project, and the environmental effects that the project may bring about.

ACRONYMS AND ABBREVIATIONS

ANP	Akagera National Park
BP	Convention on Biological Diversity
CBD	Convention on Biological Diversity
CBO	Community Based Organization
CDF	Community Development Fund
CITES	Convention on International Trade of Endangered Species
CMS	Convention on Migratory Species
DAO	District Agriculture Officer
DDP	Districts Development Plans
DEMP	Decentralization and Environment Management Project
DEO	District Environment Officer
DFO	District Forest Officer
DNRM	District Natural Resource Management
EA	Environmental Assessment
EAC	East African Community
EDPRS	Economic Development and Poverty Reduction Strategy
EFP	Environmental Focal Person
EHS-MP	Environment, Health and Safety Management Plan
EIA	Environmental Impact Assessment
EIACA	Environmental Impact Assessment Certificate of Authorization
EMO	Environmental Management Officer
EMP	Environmental Management Plan
ENR	Environment and Natural Resources
ESCL	Environmental Screening Check List
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
FAO	Food and Agriculture Organization
FONERWA	Rwanda National Environment Fund
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographical Information Systems
GoR	Government of Rwanda
HIMO	Haute Intensité de Main d'œuvre
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immuno Deficiency Syndrome

IATSPD	International Agreement for the Trade of the Species in the Process of Disappearance
ICLD	International Commission of Large Dams
ICM	Integrated Crop Management
IDA	International Development Association
IEC	Information, Education and Communication
IL	Impact Level
IMCE	Integrated Management of Critical Ecosystem
IMF	International Monetary Fund
IPM	Integrated Pest Management
ISAR	Institute for Research in Agronomic Sciences of Rwanda
IUCN	International Union for Conservation of Nature
KIST	Kigali Institute of Science and Technology
LG	Local Government
LGAs	Local Government Authorities
LVB	Lake Victoria Basin
LVBC	Lake Victoria Basin Commission
LVEMP	Lake Victoria Environmental Management Project
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MIGEPROFE	Ministère du Genre et de la Promotion Féminine
MINAGRI	Ministry of Agriculture & Animal Resources
MINALOC	Ministry of Local Government, Good Governance Community Developmentand Social Affairs
MINECOFIN	Ministry of Finance and Economic Planning
MINECOM	Ministry of Commerce
MINEDUC	Ministry of Education
MININFRA	Ministry of Infrastructure
MINIRENA	Ministry of Natural Resources
MINISANTE	Ministry of Health
MIS	Management Information System
MTEF	Medium Term Expenditure Framework
NBI	Nile Basin Initiative
NEPAD	New Partnership for Africa Development
NGOs	Non Governmental Organisations
NRM	National Resources Management
NTSC	National Technical Steering Committee
OD	Operational Directive
OGMR	Office de Geologie et des Mines du Rwanda

OP	Operational Policy
PAIGELAC	Internal Lakes Integrated Development and Management Project
PDO	Project Development Objectives
PGEO	Project Global Environmental Objectives
PSC	Project Steering Committee
PSCF	Project Screening Criteria Form
RADA	Rwanda Agricultural Development Authority
RAP	Resettlement and Compensation Plan
RARDA	Rwanda Animal Resources Development
RBS	Rwanda Bureau of Standards
REMA	Rwanda Environment Management Authority
RPF	Resettlement Policy Framework
RPSF	Rwanda Private Sector Federation
RSSP	Rural Sector Support Project
RTDA	Regional Transboundary Diagnostic Analysis
SAP	Strategic Action Programme
SEA	Strategic Environmental Assessment
SEA	Strategic Environmental Assessment
TDA	Transboundary Diagnostic Analysis
ToRs	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
WB	World Bank
WCD	World Commission on Dams
WRMP	Water Resource Management Plan

0. EXECUTIVE SUMMARY

The ESMF prepared for the Landscape Approach to Forest Restoration and Conservation Project will provide a strategic guide for the integration of environmental and social considerations in the planning and implementation of the LAFREC project activities.

The project development and the global environmental objective is to demonstrate landscape management for enhanced environmental services and climate resilient livelihoods, including via forest rehabilitation and sustainable land management investments in one priority landscape.

It will result in a major advance in the restoration of the highly degraded Gishwati-Mukura landscape, enhancing both productive and environmental values. The project will work concurrently in the three major elements of the landscape – rehabilitating forests and biodiversity within the Gishwati and Mukura Reserves, enhancing sustainable land management in the agricultural lands between them, and introducing silvo-pastoral approaches in the rangelands of central Gishwati. These interventions will by synergistic, enhancing biological connectivity at the landscape level in a fashion that offers strong potential for global recognition as a UNESCO Biosphere Reserve and longer-term re-orientation of the local economy towards nature-based tourism. They will also be complemented by livelihoods diversification and the establishment of flood warning and response systems, that will further enhance climate resilience within one of the most disaster-prone areas of Rwanda.

The proposed activities under LAFREC may bring positive or negative socio-economic and environmental impacts. The most probable positive impacts being among others are: job opportunities, increase of population revenues, improved skills for most farmers and land management options; keen environmental awareness among different actors; increased crop productivity; best practices and practical technology for solid and wastewater management, improved soil and water conservation techniques: Yet other advantages could be improved cultivation methods, best agricultural practices and these achievements will reduce significantly post harvest losses.

Nevertheless LAFREC activities could potentially create negative environmental and social impacts during the course of implementation. The possible negative impacts include:

- ✓ Land rehabilitation works (e.g. terraces, anti-erosive ditches) could result in land-taking, loss of natural habitats or changes in drainage if not well-planned.
- ✓ Changes in agricultural (including agroforestry) activities related to sustainable land management could result in changes in the use of agrichemicals and/or introduction of invasive species.
- ✓ The introduction of new livelihood activities could involve a range of negative impacts (e.g. increasing pressure on natural resources, increasing use of agrichemicals) if not appropriately screened and planned.
- ✓ Minor construction activities (e.g. guard posts or visitor center infrastructure for the Gishwati-Mukura National Park, small-scale community structures such as storage or agri-processing facilities related to livelihoods activities) could involve land-taking, loss of small areas of natural habitats or local pollution if not appropriately planned and managed.
- ✓ Upgrading of the Gishwati and Mukura Forest Reserves to a National Park may involve stricter enforcement of conservation regulations and therefore restriction of access to natural resources, and some small incidences of land-taking from re-delineation and rehabilitation of the buffer zone.

This environmental and social management framework (ESMF) has been prepared as a guide for the initial screening of proposed activities for any negative environmental and social impacts, which would require attention prior to project implementation. The ESMF has been prepared on the basis of the existing ESMF for the Lake Victoria Environment Management Program (LVEMP). LVEMP entails a greater range of investments and potential impacts than LAFREC (particularly in relation to construction of sanitation works), and therefore the ESMF is relatively extensive compared to the range of impacts expected, but operationally, it makes sense to use a framework compatible with Bank policies that the REMA SPIU is already experienced in using. Aside from some resource access restriction issues related to protected areas (to be dealt with through the PF – see below), the scope of potential activities under LAFREC falls within that already permitted under LVEMP, and therefore the adopted of the same screening tools should be entirely adequate to mitigate potential impacts. The framework outlines a number of strategies in undertaking the exercise. These include:

- ✓ An outline of a comprehensive checklist for the potential environmental and social impacts and their sources;
- ✓ Systematic procedures for participatory screening processes for project sites and project activities for environmental and social considerations;
- ✓ A step-by-step procedure for forecasting the main potential environmental and social impacts of the planned project activities;
- ✓ A typical environmental management plan for addressing negative externalities in the course of project implementation and operations within environs;
- ✓ A monitoring system for implementation of mitigation measures;
- ✓ An outline of recommended capacity-building measures for environmental planning and monitoring of the project activities.

Preparation of this ESMF is in line with requirements of the national organic law (2005), the Environmental Impact Assessment Guidelines; and has bearing of relevant World Bank (WB) environmental and social safeguard policies. The WB safeguard policies that are triggered by the proposed LAFREC activities are mainly: *OP/BP 4.01 (Environmental Assessment); OP 4.09 (Pest Management); OP/BP 4.12 (Involuntary Resettlement Policy); OP/BP 4.04 (Natural Habitats); OP 4.36 (Forestry), OP/BP 4.36 (Physical Cultural Resources*) *and OP/BP 7.50 (Projects on International Waterways).*

The ESMF provides tools to screen for environmental and social impacts in general, and to mitigate impacts related mostly to OPs 4.01, 4.04, 4.11 and 4.36. Where identified, mitigation of potential impacts related to OP 4.12 will be dealt with under a separate Resettlement Policy Framework (for any issues related to land-taking) and Process Framework (for resource access restriction issues), and issues related to OP 4.09 will be addressed through a separate Integrated Pest Management Plan (IPMP). OP 7.50 has been triggered for the project because of the inclusion of hydrological studies (for flood risk mapping and modelling) on international waterways, but no action related to the policy is required during implementation, except for including consideration of any potential downstream impacts in the studies.

The project has been assigned Environmental Assessment Risk Category B because activities are envisaged to fall under categories B and **C** according to the Environmental Assessment Policy. An appropriate environmental and social assessment (ESIA) will have to be carried out for Category B activities expected to have significant impacts. Category B activities with very limited impacts and Category **C** activities would not require the preparation of a separate ESIA, and the

completed environmental and social checklist will be attached with such sub-project proposal. Since the locations of the infrastructure investments and their potential negative localized impacts could not be determined prior to appraisal, the ESMF has been prepared to ensure appropriate mitigation of potential negative environmental and social impacts are taken care.

The proposed framework insists for successful implementation of the ESMF including need to reinforce involvement and participation of local communities in the implementation of suggested mitigation measures. Specifically the framework recommends:

- Using this framework prior to any project activity of the LAFREC;
- Environmental and social awareness and education for the key stakeholders and affected communities;
- Training the local community structures to implement the ESMF and the screening process;
- Regularly updating this ESMF to respond to changing local conditions;
- Building capacities for developing appropriate information management systems to support the environmental and social management process;
- Providing the necessary resources and equipment for the LGAs and other project implementers to be able to produce the necessary documentation and forms for the implementation of the ESMF,
- Empowering the relevant environmental officers to adequately administer the ESMF.

1. INTRODUCTION

1.1. Overview of Rwanda

Rwanda is located in Central Africa between latitudes 1°04′ and 2°51′ south and longitudes 28°45′ and 31°15′ east. Its surface area is 26.338 km2. The average population density in 2012 was 415 people per km^2 (4th PHCR, 2012) and the physiological density (people per area of arable land) was 441 people per km^2 (20064th PHCR, 2012). Figure 1 shows the administrative divisions of Rwanda.

The Rwandan relief is hilly and mountainous with an altitude averaging 1700 meters. The highest point on Mt Karisimbi is 4507 meters above sea level. Rwanda has volcanic mountains at the northern fringe and undulating hills in most of the central plateau. However, the eastern part of the country is relatively flat with altitudes well below 1500 meters. This relief pattern gives Rwanda a mild and cool climate that is predominantly influenced by altitude. Average annual temperatures are about 18.5°C and average rainfall is about 1,250 mm per annum. The lowlands of the southwest in Bugarama plain with an altitude of 900 meters are part of the tectonic depression of the African Rift Valley.

The country is predominantly agricultural with few options that would reduce the pressure on land resources. Agriculture contributes 47 per cent of the GNP and accounts for 71 per cent of the country's export revenue. It is the main source of income for 87 per cent of the population (MINAGRI 2006). Only 52 per cent of the land surface area is arable, representing approximately 1,385,000 hectares (ROR 2004).

1.2. Vegetation and Forest Cover

Almost two thirds of forests have been lost since independence, and currently the country has about 20% forest cover. Image-based inventory completed by 2012 using aerial orthophotos indicates that forests (natural montane forests, savannah forests, and tree plantations) cover about 673,636 ha (of which 125,889 ha are natural forests and 547,747 ha forest plantations of which 60% are smallholder woodlots, 12% are

district forests and 28% are state forest.[1]. Forest ecosystems in Rwanda are primarily contained within the protected transboundary areas of Akagera National Park, Nyungwe National Park, and Volcanoes National Park, and within Gishwati Forest Reserve, Iwawa Island Forest Reserve and Mukura Forest Reserve. Protected areas have been encroached and reduced in size through successive re-gazetting. In addition to these protected forest areas, Rwanda also contains remnant terrestrial ecosystems that have resulted from the fragmentation of former larger ecosystems. In order to reverse deforestation, the government has embarked on a vigorous afforestation program, aiming to achieve 30% forest cover by 2020.

Forests in Rwanda provide wood fuel, food, construction materials and medicinal herbs to local communities. Forests also support a series of economic activities in the agriculture, tourism and energy industries. Their ecological roles include acting as a biodiversity repositories, groundwater and stream recharge, flood control and regulators of regional and microclimates.

1.3. General Environmental Problems of Rwanda

High population density in fragile ecosystems exposes the country's natural resources to degradation. The major problems facing the environment are pressures from the growing population on the natural resources such as land, water, flora and fauna and other non-renewable resources (MFEP 2000). The poor cropping and animal husbandry practices, occupation of marginal lands and accelerated cutting of forests in the catchment have increased runoff of water, soil erosion and added effluents to water bodies. This is most evident in land degradation, soil erosion, decline in soil fertility, deforestation, wetland degradation, loss of biodiversity and pollution (ROR 2004)

It is against this background that GoR has proposed LAFREC to contribute to efforts to arrest and eventually reverse the ongoing land conversion in the Gishwati forest area and adjacent parts of the Nile –Congo Crest.

[1] RNRA (2012): Rwanda Forest Cover Mapping using Aerial Photographs, Kigali, December, 2012, 110p. Definition of forest as it is provided in the forest law (2013): land covered with trees, shrubs and other plants or land which was covered with trees and is in the process of regeneration or under replantation or land that has not been covered with trees but is intended for forestry purposes or other activities related to forests

2. LANDSCAPE APPROACH TO FOREST RESTORATION AND CONSERVATION (LAFREC) PROJECT DESCRIPTION

2.1. Project Development Objectives (PDO)

The project development and the global environmental objective is to demonstrate landscape management for enhanced environmental services and climate resilient livelihoods, including via forest rehabilitation and sustainable land management investments in one priority landscape.

It will result in a major advance in the restoration of the highly degraded Gishwati-Mukura landscape, enhancing both productive and environmental values. The project will work concurrently in the three major elements of the landscape – rehabilitating forests and biodiversity within the Gishwati and Mukura Reserves, enhancing sustainable land management in the agricultural lands between them, and introducing silvo-pastoral approaches in the rangelands of central Gishwati. These interventions will by synergistic, enhancing biological connectivity at the landscape level in a fashion that offers strong potential for global recognition as a UNESCO Biosphere Reserve and longer-term re-orientation of the local economy towards nature-based tourism. They will also be complemented by livelihoods diversification and the establishment of flood warning and response systems, that will further enhance climate resilience within one of the most disaster-prone areas of Rwanda.

2.2. Project Description

The project has been designed along two components and their corresponding sub-components. The components are:

2.2.1. Component 1: Forest-friendly and climate-resilient restoration of Gishwati-Mukura landscape (GEF US$4.3 M, LDCF US$3.8 M, total US$8.1 M)

This Component will support the application of the landscape approach to forest restoration and conservation for the improvement of ecosystem functions and services in the Gishwati forest area, and possibly adjacent parts of the Nile-Congo Crest. It aims to arrest and eventually reverse the ongoing land conversion in the area through forest restoration (to the extent feasible) and agro-forestry approaches in a manner that will maximize ecological connectivity and hydrological function in

the landscape.

Sub-Component 1.a.: Upgrading and sustainable management of Gishwati-Mukura Protected Area (GEF US$ 1.3 million)

The project will support the planned upgrading of the Gishwati core forest area (the remnant natural forest areas within the former Gishwati Forest Reserve) and the Mukura Forest Reserve to a single protected area. The 19 km stretch of hills between the two reserves is also densely populated and mainly occupied by agricultural land (see Annex 2 for details on the challenges faced by the two reserves).

Investments in this protected area will complete the planning process, strengthen management and accelerate ecological restoration in support of upgrading to national park status and to improve the protection of two key biodiversity refugia within the Nile-Congo crest. Based on consultations with RDB, it was agreed that the priority investments to be supported will focus on:

a. *Physical demarcation of the reserves*. The boundaries of core forest areas and buffer zones for the national park are proposed in a draft law. The vegetation, use and co-management structure of the buffer zones will be discussed and agreed with local communities. The project will support consultation meetings and costs of physical demarcation for completion of this process.

b. *Restoration of degraded natural habitats*. In both reserves, assisted regeneration of degraded portions will be carried out involving planting of native species, and where necessary removal of exotics. In some limited areas where mining has taken place, there may also be needs for small-scale works to fill excavations. Local labor will be used for restoration works.

c. *Development (and updating) of management plans*. A management plan exists for Mukura, but it is outdated. None exists yet for Gishwati. A plan will be developed for the management of both areas as a single reserve. The management plan will address ongoing restoration and ecological management needs, a protection plan based on identification of the most critical biodiversity elements, and a strategy for eco-tourism development. Much of the plan, however, will address the management of needs of the local population, in particular provision of substitutes for resources which were previously accessed from the

forest reserves, co-management and sustainable use arrangements for the buffer zone, and to the extent possible, benefit-sharing arrangements, including local participation in tourism development.

The management planning process is also expected to result in the preparation of a Biosphere Reserve nomination to UNESCO for the Gishwati-Mukura National Park and surrounding the landscape.

d. *Training and equipping of local eco-guards*. After establishment of the National Park, the cadre of existing eco-guards is expected to be extended to 12 persons each for the Gishwati and Mukura sections. The project will provide basic equipment to the guards, as well as training to enhance their capacity for systematic threat monitoring for the reserve, and to act as community liaisons. In addition to the community-based activities of the eco-guards, the project will provide resources to mobilize periodic spot-checks and support from local law enforcement agencies where serious issues are involved, taking a sensitive and graduated approach with local offenders. Chimpanzee habituation and tourist guiding will also be supported. Should there be a delay in the establishment of the national park, the Project may pay salaries of the existing eco-guards as an interim measure.

e. *Installation of basic infrastructure*. In accordance with the management plan, the project will provide basic infrastructure, such as the construction of visitor centers, a park headquarters, viewing platforms, signed nature trails, and patrol posts.

f. *Environmental education*. An environmental education program targeting local communities and environmental clubs in schools will be continued in the Gishwati area and extended to Mukura to explain the need for biodiversity protection and the specific responsibilities of local residents. Activities may also include creating literacy centers for adults as focal sites for environmental education, as well as local exchanges with communities around Volcanoes National Park.

<u>Sub-Component 1.b.: Forest restoration and land husbandry in the Gishwati landscape (GEF US$ 2.9 million)</u>

Moving beyond the core forests, the project will work on management of the broader Gishwati-Mukura landscape to enhance both production and watershed values,

whilst capitalizing on opportunities to increase the representation of native forest elements and therefore biodiversity connectivity in the landscape. The project would finance planning at the landscape level and with individual communities, and would support the implementation of tree-based landscape restoration approaches through provision of training, seeds, materials, and through payment for local labor.

The priority investments will focus on:

a. *Sustainable land management with corridor communities*. Establishment of a Gishwati-Mukura forest corridor has been adopted as a national goal and is reflected in the National Land Use Master Plan. However, the high population density and the almost complete agricultural conversion of the putative corridor area mean that there is no realistic potential for re-establishment of a broad swath of forest without major economic dislocation of local communities. The project will therefore focus on increasing the representation of native forest elements in the landscape, enhancing biological connectivity via an archipelago of ecological islands and soft boundaries. Set aside of highly vulnerable ridge-tops, extreme slopes, and riparian buffers (in keeping with national legislation that requires such buffers) and/or unproductive lands, combined with agroforestry techniques which favor native species, offers the potential to greatly increase biological connectivity whilst maintaining or enhancing the productive value of the landscape. Significant investments in land use intensification would be offered to communities in return for restricting agriculture in the most vulnerable lands and establishing protection forests. The project will pilot this approach through participatory micro-watershed planning with local communities to identify sustainable land management investments with a particular emphasis on the promotion of agroforestry techniques that incorporate native species. The planning process would result in agreement on a set of watershed rehabilitation actions, similar to those under other project, such as LWH, but with added emphasis on identification of agroforestry potentials.

b. *Silvo-pastoralism in Gishwati rangelands*. Within rangeland areas of the former Gishwati Forest Reserve, the project will invest in establishment of silvo-pastoral techniques, emphasizing the use of native species. This would include establishing trees on ridge-tops, extreme slopes,

riparian buffers, and as live fences, shelter belts and shade trees, through planting and managed natural regrowth. Although this would involve a marginal loss in the area of pasture, silvo-pastoral approaches are expected to improve the overall productivity of rangelands (in addition to enhancing forest cover and biological connectivity) by protecting against land degradation, providing shelter for animals from climatic extremes, and through provision of additional fodder and forest products. Silvo-pastoral interventions would be accompanied, where necessary, with training on improved livestock and pasture management.

c. *Agroforestry and forest restoration support to MINAGRI and Forests Department*. The Project may help finance the completion of ongoing re-establishment of natural forest started under the GWLM project in the north of Gishwati, ensuring the use of an appropriate and diverse mix of native species. Subject to agreement with the Department of Forests of RNRA through the joint landscape planning process, the project may also finance the conversion of a portion of the production pine forests into natural forest. Furthermore, within the areas of the former Gishwati Forest Reserve that are being targeted for investment through LWH, the project would provide supplementary assistance in the form of technical advice and seedlings for diversification (and where feasible intensification) of agroforestry techniques.

d. *Joint land use planning for the Gishwati landscape*. The project would work with the Department of Lands in RNRA to establish a working group to revise and harmonize existing land use planning for the landscape. This working group, with participation from relevant ministries, agencies, and districts would agree on a land use planning framework within which LAFREC would operate, maximizing potential synergies and avoiding unnecessary conflicts. An early task for the working group will be to assign a task force to undertake a technical review of mining activities in the Gishwati-Mukura area.

<u>Sub-Component 1.c.: Sustainable and resilient livelihoods (LDCF US$ 2.5 million; GEF US$ 0.1 million; total US$ 2.6 million</u>)

This sub-component will support demand-driven income-generating activities in

order to increase (i) the breadth of the economic options and security of the livelihoods base of the population within the Gishwati-Mukura landscape, thereby improving climate resilience; and (ii) the sustainability of land and forest management investments within the landscape. Livelihoods support will be available to communities surrounding the Gishwati core forest area and the Mukura Forest Reserve, within targeted areas of the Gishwati-Mukura corridor, and involved in project re-forestation interventions in the area of the forest Gishwati Forest Reserve. Support will preferentially be provided to livelihood options which: (i) decrease dependency on unsustainable exploitation of forest resources, through provision of alternatives for products from protected forest and increased energy efficiency; (ii) depend directly on successful application of SLM technologies or management of resources; (iii) add value to agricultural or forest products, justifying increased investments in sustainable land and natural resources management; or (iv) provide additional income with negligible environmental impact.

Identification of livelihood potentials will largely occur as an integral part of community-based participatory planning activities in the course of the landscape restoration activities discussed above - i.e. protected area and buffer zone management planning, micro-catchment planning in the corridor area, and planning for rangeland management activities in the former Gishwati Forest Reserve. This ground-up approach will also be complemented with top-down advisory services from an agribusiness consultant/NGO that will organize trade fairs; and identify and support establishment of production and marketing linkages with the private sector. This will take into account community production strengths and opportunities in a limited number of value chains, identification of bottle necks and quality requirements, and the development of new economic opportunities during the course of the project associated with ongoing regional development activities.

Development and start-up of alternative livelihoods will support capacity-building for farmer groups and cooperatives, as well as training (including peer learning, local exchange visits and study tours), initial inputs (e.g. seed) and tools in support of specific livelihood interventions. Within the project area, farmer groups are already established, and many have significant capacity to manage group activities and finances. Need for additional support to build organizational, technical, financial and business capacities will be therefore be assessed in terms of past performance and current linkages to other forms of support. Linkage to restoration activities will also be promoted in terms of piggy-backing on the use of local labor for landscape restoration work.

Sub-Component 1.d.: Flood forecasting and preparedness (LDCF US$ 1.3 million)

Floods have had a great impact on human development, properties, infrastructures as well as the environment in northwestern Rwanda. Steep slopes, soil instability, heavy rains, insufficient drainage systems combine with inappropriate land management to create high vulnerability. This sub-component aims to improve the technical capacity of flood forecasting institutions and complement identified important milestones required to have a fully integrated Early Warning System in an effort to reduce economic losses and risks to life in pilot flood-prone watersheds.

LAFREC project will focus on establishing early warning systems (EWS) through the introduction of operational precipitation and flood forecasting. This a is multi-sectoral activity which will be a joint effort of the Rwanda Meteorology Agency (RMA, responsible for development of precipitation forecasts, including utilization of data from a Doppler radar that will be installed soon, and issuing warnings to authorized government and municipal authorities), RNRA (real time stream gauging, flood modeling and forecasting), and MIDIMAR (issuing warnings to public, guiding mitigation activities) and local authorities/communities. It is expected that this activity will be piloted in a few small/medium size watershed with high risk of flooding.

Main activities in this sub-component will include: (i) a flood mitigation study in the selected pilot watersheds to provide a clear analysis of the flood issues and highlight the existing gaps that should be addressed within the scope of the sub-component; and (ii) technical assistance:

a. to RMA for maintenance and calibration of existing weather stations, introduction of rainfall forecasting using the Doppler radar, supply and installation of limited equipment packages such as real-time stream and rain gauges including rain gauges for calibration of Doppler radar, capacity building to use Common Alerting Protocol Platform for Early Warning;
b. to RNRA for capacity building and operational support for the introduction of hydrological modeling, installation of automated hydromet stations;
c. to MIDIMAR for development of Standard Operating Procedures (SOPs) for flood warnings and response, assessing vulnerability of

communities exposed to hazards, capacity building for community disaster preparedness.

2.2.2 Component 2: Research, monitoring and management (GEF US$1.12 M, LDCF US$0.2 M, total US$1.4 M)

Sub-Component 2.a.: Applied research and impact monitoring (GEF US$ 1.0 million)

The project aims to demonstrate the potential and inform future implementation of forest-friendly land rehabilitation approaches to leverage the much larger land husbandry investment programs being led by the agriculture sector, as well as any potential future investment programs in the water resources or forestry sectors that may also be interested in adopting the approach. To this end, support for applied research and systematic impact evaluation that goes beyond the immediate needs of the project is a sound investment.

Impact monitoring would support: (i) the establishment of a national modeling platform to map indicators of landscape health, and identify landscape management priorities, based on hotspots of degradation, and the feasibility and benefits of restoring lost environmental and economic functions; and (ii) comparative field-based monitoring of a range of environmental and associated economic functions, to demonstrate the effectiveness of land rehabilitation techniques. Various agencies, programs and projects are investing in land and watershed rehabilitation following related, but somewhat different approaches. Structured impact monitoring across a range of sites would aim to establish the most cost-effective techniques for restoring environmental and economic functionality, and specifically to demonstrate to the value that enhanced agroforestry and incorporation of natural forest elements can add. Based on a statistically robust comparative design, such work would provide the basis for developing a sustainable financing strategy for forest landscape restoration, as it would quantify the environmental and economic benefits associated with it.

Applied research would support the establishment of partnerships with key research and knowledge institutions to improve management knowledge of the Gishwati-Mukura landscape, and to improve restoration techniques, particularly in relation to scope for incorporation of native species. The project would support field costs and studentships for research students to work on a set of agreed priority topics. The main technical partners would include the Departments of Agriculture and Biology

at University of Rwanda, the RAB Research Directorate, and ICRAF.

The project would also support the production and dissemination of technical notes and manuals for practitioners, based on the finding of the applied research, and also building on work and models generated under previous projects, such as PAREF.

A list of priority topics would include: (i) Biodiversity inventory and forest ecology for Mukura and Gishwati reserves; (ii) Ecological investigations on the health, needs and constraints of the chimpanzee population and other primates, with a view to developing a long-term recovery (and potentially eco-tourism strategy); (iii) Forest restoration ecology; (iv) Propagation of native tree and forest species; (v) Integration and productive use of native species within agroforestry systems; (vi) Benefits of agroforestry techniques in rangeland and estate crop settings; (vii) Improved woodlot management; (viii) Rural energy solutions.

Sub-Component 2.b.: Project management (GEF US$ 0.3m, LDCF US$ 0.2m, total US$ 0.5 million)

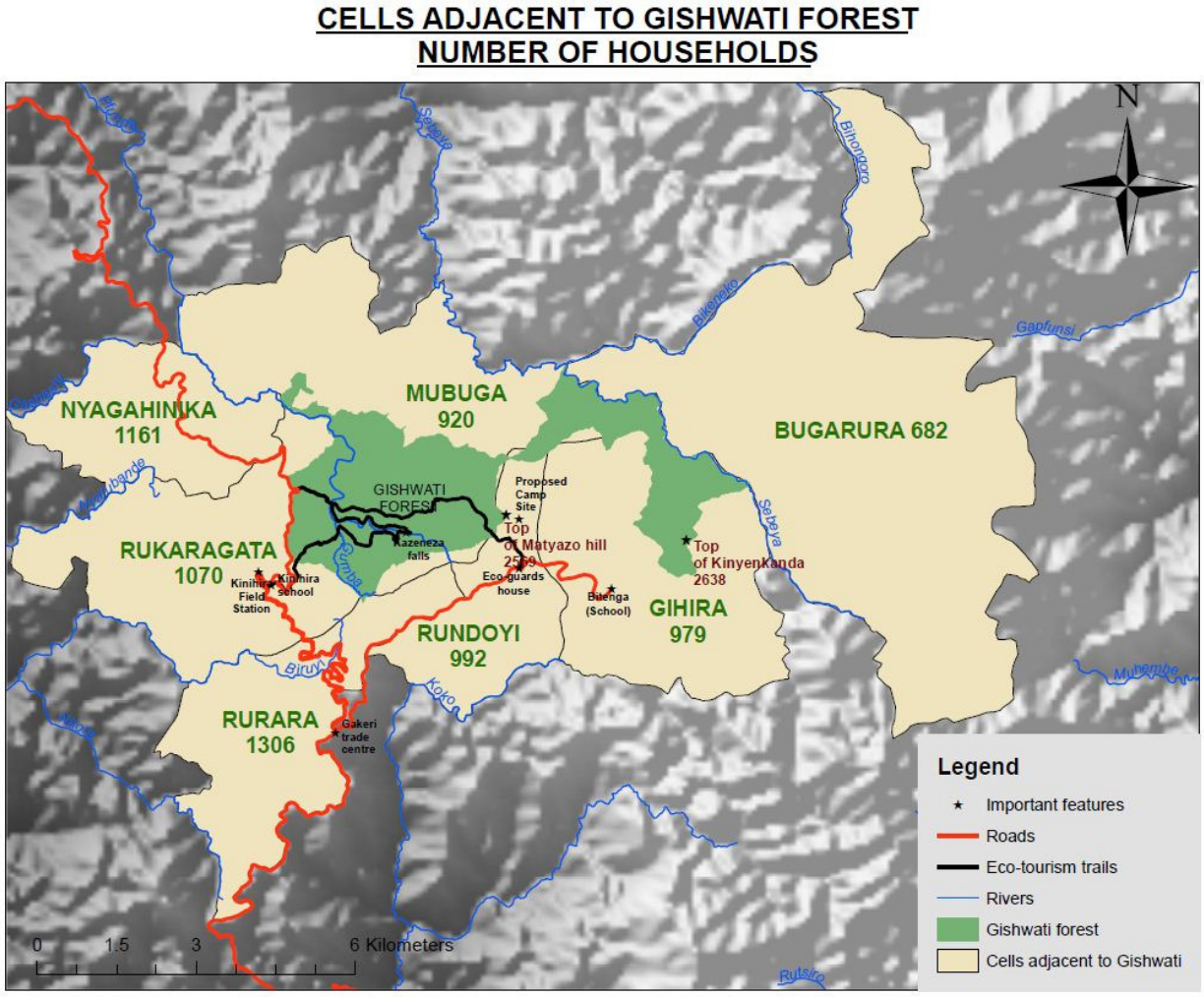
Project management expenditures will cover routine administrative overheads, such as coordination between project implementing partners, work-planning, procurement and contract management, accounting and audit costs, field supervision, maintaining an internal project M&E system, and reporting. The internal M&E system will incorporate information on project outcomes generated through the field-based impact monitoring described above, but it will also maintain financial and output data for project-specific monitoring and management purposes.

3. BASELINE DATA

3.1. Project Target Areas

The Core Gishwati Forest is the last remaining stand of natural forest situated within the former Gishwati Forest Reserve (see **Error! Reference source not found.**1 for context). Along with the Mukura Forest Reserve (see below), it also forms the only remaining natural forest in the wider landscape. Natural regeneration and extension of the Core Forest through the Gishwati Area Conservation Program (GACP) – conducted by the Great Apes Trust in collaboration with REMA from 2008

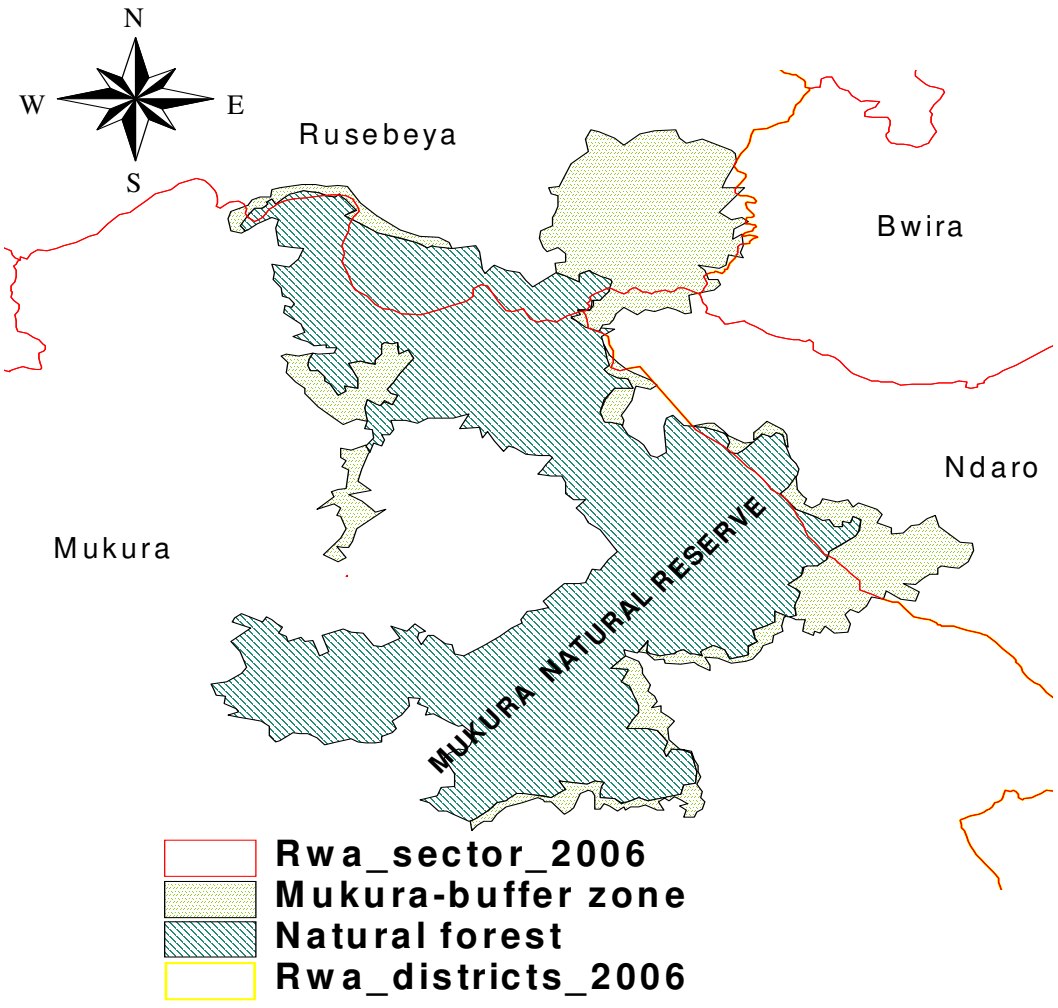
to 2012 – increased the size of the Core Forest from 610 to 1,440 hectares. The project actively involved local communities as eco-guards and as beneficiaries of a number of sustainable livelihood practices based on Gishwati's tourism potential. However that potential still largely remains to be tapped as no further investment in tourism infrastructure or promotion has taken place since the closure of the project in 2012. A local NGO, Forest of Hope Association, comprised of former employees of the project remains in place and carries out basic ecoguard functions with external funding, including a recent grant from WWF-Sweden.



Map 1: Location of Gishwati Forest (source)

Mukura Forest Reserve extends across Rutsiro (Mukura and Rusebeya Sectors) and Ngororero (Ndaro Sector) Districts. Mukura has enjoyed reserve status since 1951, and today covers 1,988 ha. (see Map 2 for current forest extent and Map 2 for 2000-2012 forest cover change). This reduction is the result of a succession of deforestation in the surrounding areas, especially following the settlement of refugees in the area as a result of the 1994 genocide of the Tutsi. The forest stabilizes agriculture in

surrounding areas by absorbing excess water and preventing runoff and erosion. It serves as the sources for a number of rivers and streams, including Ntaruko, Ndaba and Rutanzongera. However, the disappearance of some parts of the forest has led many of these springs to become seasonal. On its exterior, the forest is surrounded by agriculture lands, scattered pine plantations that serve as an incomplete buffer zone, and other physical features such as rivers and roads. Small-scale mining is taking place on the edge of the reserve, potentially affecting water courses running through the natural forest. Significant mining is currently also taking place within the reserve. Moreover, previous studies have found human encroachment in the form of livestock grazing, poaching, wood, honey and liana collection, and agriculture.



Map 2: Mukura Forest Reserve

3.2. Physical Environment

Rwanda, a small, landlocked and mountainous country, harbors six percent of the Albertine Montane Forests Ecoregion. **The Albertine Rift** is the western branch of the East African Rift, and covers parts of Rwanda, Uganda, the Democratic Republic of the Congo (DRC), Burundi and Tanzania. It reaches from the northern end of Lake Albert to the southern end of Lake Tanganyika. The Rift includes the valley and the surrounding mountains, and harbors more endemic mammals, birds, and amphibians than any other region in Africa.

3.2.1. Terrain

Rwanda is a mountainous country characterized by a diverse relief ranging from hilly volcanoes and mountain forest climate in the north and west, through the steep and gentle hills in the central regions and to the lowland hot and dry eastern plains.

3.2.2. Climate

Rwanda enjoys a tropical monotone climate, moderated by altitude, with an alteration between the dry season (generally from June to September) and the rainy season (October to May). Rwanda's climate is characterized by high spatial variability mainly as a result of the country's wide ranging terrain i.e. from 4,500 meters in the volcanic ranges of the North West to as low as 900 meters in the east (TDA 2006)). The high altitude areas of the North and North West receive much higher rainfall (averaging 1800mmm/ annum), while the lowland areas of the west, south and east receive much less (generally less than 900 mm/ annum). The mean annual temperatures range from 16 –17 ^{o}C in the higher altitudes, 18-21^{o}C in the central plateau and 20- 24 ^{o}C in the eastern and western lowlands, reflecting large variability over relatively small spatial scale.

However, the average temperature in Rwanda has increased over the last twenty years, while rainy seasons are becoming shorter with higher intensity.[2] Climatic factors, exacerbated by loss of forest and vegetation cover, steep slopes and high dependence on traditional rain-fed agriculture, are causing a variety of impacts. The eastern and southeastern regions (Umutara, Ngoma, Bugesera and Mayaga) are most affected by prolonged drought, while the northern and western regions (Musanze, Rubavu, Nyamagabe and Huye) experience abundant rainfall that usually causes erosion, flooding and landslides. These extreme climate events have adverse impacts on agricultural productivity. For instance, in 2007, severe flooding

[2] REMA (2011): Atlas of Rwanda's Changing Environment: Implications for Climate Change Resilience. Kigali.

was experienced in the project area, resulting in the loss of several lives and millions of dollars in damages.

Due to its high elevation of 2,000 to 2,700 meters, Mukura's mean annual temperature is 15 °C. Its mean annual rainfall is 1500 mm, though this is erratic. As the relief is very steep and the tree cover is very low, there is a high risk of soil erosion and land degradation. Current climate variations are increasing the stress on the natural resources which are already overused by the dense and poor population surrounding the reserve.

3.3. Biological Environment

Gishwati forest reserve has recorded 58 species of trees and shrubs, including numerous indigenous hardwoods and bamboo. A recent study of carbon sequestration of the forest indicated *Macaranga kilimandscharica* to be the most common species of tree in areas of the forest that have not been disturbed. Previously disturbed regions of the forest experiencing regeneration show colonization of *Carapa grandiflora, Entandrophagrama excelsum*, and *Symohonia globulifera*. Other flora of the reserve include giant tree ferns and blue lichen.

A wide range of fauna can be found within the reserve. Four species of primates are found, the Eastern Chimpanzee (Pan Troglodytes schweinfurtii), the golden monkey, the blue monkey, and the L'hoest monkey (also known as mountain monkey). Though not since 2002, a fifth species of primate, the black and white Colubus has been reported having been seen. There are currently estimated to be 20 East African chimpanzees in the forest. This is a 54% increase in population size from the 13 chimps in 2008, when the GACP first started. This includes five infants. The average density of chimpanzee nests was found to be 1.473 per km2 by Dr. Plumptree. Other mammals include the red river hog (*Potamochoerus porcus*), the black front duiker (*Cephalophus nigrifrons*), the southern tree hyrax (*Dendrohyrax arboreus*), the serval (*Felis serval*), and *Felis aurata*.

Other fauna found are the 84 species of birds, including Wood hoopoes (Phoeniculidae), White-headed Wood hoopoe (*Phoeniculus bollei*), Old World Warblers (Sylviidae), and Mountain Yellow Warbler (*Chloropeta similis*). The brown forest frog along with multiple species of toads are some of the amphibian life found in the forest. With respect to reptiles, the great lakes bush viper and multiple species of chameleons are also found live in the Gishwati forest.

Mukura Forest contains highly diversified and rich flora. Among its flora at least 243 plant species, the following are predominant: *Psychotria mahonii*, Macaranga, *Psydrax parviflora*, *Syzygium guineense*, *Rytiginia kigeziensis*, mutundu, *Rapanea melanophroides*, lemonwood, *Peddiea rapaneoides*, *Galiniera saxifraga*, *Vernonia lasiopsis*, *Chassalia subchreata*, hagenia, false assegai, *Olinia rochitiana*, chewstick, lebekyet, silky bark and *Vernonia kirungae*. The forest contains common mammal species, including the fire footed rope squirrel, the Ruwenzori sun squirrel, the greater cane rat, the black-backed jackal, and *Herpestes urva*, but no primates. In addition, it is home to at least 15 bird species endemic to the Albertine Rift, and 57 that are listed on the IUCN Red List, of which two (Grauer's Swamp Warbler and the Grey Crowned Crane) are endangered. The forest also shelters various reptile species, including the puff adder.

3.4. Socio-Economic Environment

Rwanda, a small, landlocked and mountainous country, is subject to some of the highest demographic pressures in Sub-Saharan Africa, with a population estimated at 11 million, growing at 2.6% p.a.[3], while only 52% of its land is arable[4]. Mean landholdings are very small: 60% of households cultivate less than 0.7 ha, and more than 25% less than 0.2 ha, typically divided between tiny, scattered plots[5]. Rwanda remains among Africa's poorest countries, despite having made significant progress in the past decade. In 2012, GDP per capita stood at $ 620 ($1,332 measured at PPP). Despite impressive growth rates averaging 5.4% between 2008 and 2012, poverty remains deep and pervasive, with the poverty headcount ratio at $1.25 a day (PPP)[6] sitting at 63.2% in 2011[7]. More than 90% of the poor live in rural areas. In recent years, ODA reached 26% of GDP, or $64 per capita, driven by severe need, but also by impressive results in improving indicators of social well-being. From 2005 onwards, the OECD has consistently rated Rwanda as one of the countries that uses aid most effectively. Recent political events have severely impacted the reliability of some forms of donor support, however.

Much of Rwanda's economy depends directly upon its land, water and biodiversity resources – that is on its landscapes. The agricultural sector accounts for about 32.7% of GDP (2012), 80% of employment, and in 2010, 45% of foreign exchange earnings

[3] 2012 Population and Housing Census, Report on provisional results, Nov. 2012, NISR
[4] World Bank (2013): Data. http://www.data.worldbank.org. Accessed November 12, 2013
[5] IMF (2008): Rwanda Poverty Reduction Strategy Paper. IMF Country Report No. 08/90.
[6] World Bank (2013): Data. http://www.data.worldbank.org. Accessed November 12, 2013
[7] IMF (2008): Rwanda Poverty Reduction Strategy Paper. IMF Country Report No. 08/90.

(mostly from tea and coffee). Around 50% of power generation comes from (small-scale) hydropower, and 85% of the domestic energy supply in the country is from wood fuels. In addition to ecological services supporting these sectors, biodiversity makes a substantial direct contribution to the economy through tourism, which was Rwanda's largest foreign exchange earner (at $251m) in 2011. Leisure tourism is almost exclusively nature-based, with gorilla-watching in Volcanoes National Park being the flagship, but with other protected areas, especially Nyungwe and Akagera National Parks growing in importance.

3.5. Main ecological problems, their causes and implications

Steep terrain and the highest population density in sub-Saharan Africa make sustainable land and landscape management strict necessities for Rwanda's natural-resource-dependent sectors. Between 2000 and 2011, the agricultural sector accounted for 31-47% of the national GDP and 71% of export revenues. It is also the main source of income for 87% of Rwandans. Agricultural productivity is low, with yields of several key crops lagging behind other sub-Saharan African countries. About 40% of Rwanda is classified as being at very high risk to high erosion, 75% is classified as "highly degraded" by FAO, and the country has one of the highest negative nutrient balances in sub-Saharan Africa with more than 14 million tons of soil being lost each year.

Almost two thirds of forests have been lost since independence, and currently the country has about 20% forest cover. In addition to the protected forest areas, Rwanda also contains remnant terrestrial ecosystems that have resulted from the fragmentation of former larger ecosystems. In order to reverse deforestation, the government has embarked on a vigorous afforestation program, aiming to achieve 30% forest cover by 2020.

Forests in Rwanda provide wood fuel, food, construction materials and medicinal herbs to local communities. Forests also support a series of economic activities in the agriculture, tourism and energy industries. Their ecological roles include acting as a biodiversity repositories, groundwater and stream recharge, flood control and regulators of regional and microclimates.

The average temperature in Rwanda has increased over the last twenty years, while rainy seasons are becoming shorter with higher intensity. Climatic factors, exacerbated by loss of forest and vegetation cover, steep slopes and high dependence on traditional rain-fed agriculture, are causing a variety of impacts. The

eastern and southeastern regions (Umutara, Ngoma, Bugesera and Mayaga) are most affected by prolonged drought, while the northern and western regions (Musanze, Rubavu, Nyamagabe and Huye) experience abundant rainfall that causes erosion, flooding and landslides. These extreme climate events have adverse impacts on agricultural productivity. For instance, 2008 harvests were negatively affected by serious droughts that came at the beginning of both planting seasons.

***Sedimentation**:* extensive soil erosion results in sedimentation, which is responsible for the silting on the wetlands, and in the lakes. Most of this sedimentary load is taken in the downstream, resulting in declining water quality, and subsequently escalation of water borne diseases, and creation of unfavourable conditions for aquatic life.

Water pollution resulting from a combination of siltation and degradation of catchment areas; Water pollution from use of pesticides and fertilizers as well as pollution from mining are still marginal but should be also taken into account.

Deforestation has resulted in increasing shortage of timber, fuelwood, and other wood and non-wood products. Efforts in reforestation have been intensified with significant results. Rwanda has achieved overall positive change in forest area over the last 15 yearsbut considering the fact that this is still far below the 1960's level, and the unprecedented high population growth (of about 2.6% p.a.), it remains far too inadequate to meet the demand. The Gishwati landscape has seen some of the most dramatic deforestation in the country. The forested area stood at about 70,000 ha in 1930, 28,000 ha in 1960 and 8,800 ha in 1990. Inappropriate land use management policies in the early 1980s that sought to establish a forestry industry alongside cattle ranching led to the conversion of 70% of Gishwati's natural forest cover into pasture and pine plantations. Deforestation continued apace between 1990 and 2005, in part due to the settlement in the area of refugees returned after the 1994 genocide. By 2008, the residual natural forest amounted to only 610 ha in the Core Gishwati Forest area.

***Loss of habitat for biodiversity**:* The loss of habitats and biodiversity as a consequence of the conversion of forests has likely been severe. However, Gishwati and Mukura both still provide important wildlife refugia, including for a small group of chimpanzees in Gishwati.

Exotic species: A number of exotic species were identified in the natural forests of Gishwati and Mukura. About 34% of the total numbers of tree species in Gishwati forest are exotic species, those include eucalyptus, pine etc...

Poverty and over-dependency on natural resources: The survival of most of the populations depends on the immediate exploitation of the available natural resources, which is done in very destructive ways. The population in the LAFREC zone live almost entirely on subsistence farming and livestock rearing, using poor and inappropriate methods, with low use of external inputs. As the population pressure increases, so has the pressure on natural resources, resulting in severe resource degradation, low productivity, and a cycle of poverty and powerlessness.

4. ADMINISTRATIVE, POLICY AND REGULATORY FRAMEWORK

This section of the ESMF outlines and reviews the existing legislations, policies and institutions and identifies requirements as well as gaps and conflicts of the relevant legal and institutional arrangements that would hinder or guide the development of the project in line with the national and international laws applicable to LAFREC. Rwanda being a signatory to various international conventions and laws, it's important that national projects are in line with these laws and as such some of the relevant international conventions are reviewed in this section

4.1. Legal Framework

Rwanda has revised and enacted all new institutional, policy and legislative framework in all its sectors and sub sectors after 1994. Most of the government ministries have already developed the respective sector policies and strategic plans most of which are based on economic development and poverty reduction strategy.

4.1.1. The constitution of the Republic of Rwanda

Adopted by the Rwandans during the Referendum of 26th March, 2003, it stipulates through different wordings of law the following message:

- Article 29: Each person has right to hold a private property, individual or collective. The private property, individual or collective is in violable. No one can make prejudice on it unless there is a necessity of

public interest, in the context and ways established by the law and in exchange of an equal and previous compensation.

- Article 30: The private property of soil and other real rights putting a strain to the soil granted by the government (state). An Act determines the acquisition, transfer and exploitation means.
- Article 31: The state property consists of the public sector and the private sector of the government together with the public sector and private sector of decentralized public communities. The properties of the public sector are inalienable except in case of their previous disuse in favor of the private concession of the government.
- Article 32: Each person is submitted to respect the public properties.
- Article 49: Each citizen has the right to healthy and satisfying environment. Each person has the right to protect to conserve and promote the environment. The government will take care of the environment protection. An Act defines the procedures of protecting, conserving and promoting environment.
- Article 190: The treaties and international agreements regularly signed and approved have since their making public within the official magazine, an authority superior to that of the organic laws and those of ordinary laws, under reserve, for each agreement or treaty of its execution by the other part.

4.1.2. Organic Law on Environment Protection and Management

The most relevant legislation for this study is the Organic Law on Environment of 04/2005 of 08/04/2005. This is the law that regulates the protection of environment in Rwanda. The law sets out the general legal framework for environment protection and management in Rwanda. It also constitutes environment as a one of the priority concerns of the Government of Rwanda. .

The law gives right to every natural or legal person in Rwanda to live in a healthy and balanced environment. They also have the obligation to contribute individually or collectively to safeguard country's natural, historical and socio-cultural heritage.

The law centres on avoiding and reducing the disastrous consequences on environment. It measures result from an environmental evaluation of policies, programs and projects, aimed at preventing the consequences of such activities.

The principle of sustainability of environment and equity among generation emphasizes human beings at the core of sustainable development. They therefore, have a right to a healthy and productive life in harmony with nature. They must do so as to equitably meet the needs of the present and future generation.

The law, under the article 65, puts in place Rwanda Environment Management Authority (REMA) which is the institution now charged with the responsibility of ensuring environmental protection by demanding for EIA studies to be undertaken before projects are executed.

The present organic law has the following objectives:

- To protect human and natural environment;
- To establish fundamental principles of management and protection of environment against all forms of degradation so as to develop natural resources and to fight all kinds of pollutions and nuisances;
- To improve the living conditions of the population while preserving ecosystems and available resources;
- To ensure sustainable environment and resources as well as rational and sustainable use of resources, taking into account the equality between the present and future generations;
- To guarantee to all Rwandans an economically viable, ecologically rational and socially acceptable development;
- To establish the precaution principle in order to reduce the negative effects on Environment and ensure the rehabilitation of degraded areas.

Article 3: States that every person has the duty to protect safeguard and promote environment. The State shall protect, conserve and manage the environment.

Chapter IV of the Organic Law Article 67 clearly calls for the need to subject projects to mandatory Environmental Impact Assessment.

Article 67: Further specifies that every project shall be subjected to environmental impact assessment prior to its commencement. It shall be the same for programs, plans and policies likely to affect the environment. Specific details of projects referred to in this Article shall be spelt out by the order of the Minister in charge of environment.

Article 68 states that Environmental Impact Assessment (EIA) shall include at least the following:

- A brief description of the project and its variants.

- Analysis of direct and indirect foreseeable consequences on the environment.
- Analysis of the initial state of the environment.
- Measures envisaged reducing, preventing or compensating for the consequences.
- Reasons for the choice.
- A summary of requisitions from clause1 to 5 of this article;
- A definition of the evaluation and monitoring methods used regularly and environmental indicators before (initial state), during and after implementation of the project or, as the case may be, at the final evaluation stage of the project;
- A financial evaluation of measures recommended preventing, reducing or compensating for the negative effects of the project on the environment and measures for regular monitoring and control of relevant environmental indicators.

Further to the Ministerial order n°004/2008 of 15/08/2008 establishes the list of works, activities and projects that have to undertake an environment impact assessment and the Ministerial order n° 003/2008 of 15/08/2008 relates to the requirements and procedure for environmental impact assessment.

Article 69 states that the analysis and approval of environmental impact assessments is done by the Rwanda Environment Management Authority or any other person given a written authorization. The cabinet decisions of 25/03/2009 authorized RDB to perform this activity but "on behalf and under supervision of REMA. The project promoter shall pay a levy which shall be assessed from the amount invested or to be invested, excluding the amount of operating cost. The assessment of this levy shall be fixed by law establishing the National Fund for the Environment. The impact study shall be done at the expense and under the responsibility of the promoter.

The Organic Law also puts in place the National Fund of the Environment in Rwanda (FONERWA). The law Nº 16/2012 of 22/05/2012 determines the organization, functioning and mission of the National Fund for Environment (FONERWA)

The article 66 of the Organic Law on the environment specifies that it has created, to the level of the Provinces, of the City of Kigali, of the Districts, the Cities, the Sectors and the Cells, Committees responsible for the conservation and the protection of the environment. Prime Minister's order n°008/16.01 of 26/11/2010 determines the responsibilities, organization and functioning of these committees.

.

4.1.3. Environmental Impact Assessment Regulations

REMA has now developed the EIA regulations which provide a guideline and requirements for EIA in Rwanda. According to these new regulations Sub Article 1 makes it mandatory for all the projects listed under schedule I to be subjected to a full scale EIA.

Sub Article 1) No environmental authorization shall be granted by the Authority for any project in Schedule I to these Regulations if no environmental impact assessment has been submitted to the Authority in accordance with the provisions of these Regulations.

Sub Article 2) states any project listed under Impact Level III of Schedule I to these Regulations shall require a full environmental impact assessment by the preparation of an environmental impact report, unless the Authority refuses permission.
The general EIA guidelines give the EIA process in Rwanda, which consists of the following phases:

1) **Project Brief Submission and Registration:** As a first step in the EIA process, a developer proposing to start a project shall notify RDB in writing by submission of a Project Brief. The purpose of a Project Brief, which should be prepared as prescribed in this regulation, is to provide information on the proposed activity so as to enable REMA and Lead Agencies establish whether or not the activity is likely to have significant impact on the environment, and thus determine the level of EIA necessary. The project brief submitted to REMA by a developer will be registered as the formal application for an EIA.

2) **Screening:** Screening refers to the process by which RDB makes a decision as to whether an EIA is required or not, based on information in the Project Brief. It is through screening that RDB is able to classify proposed projects as either of impact level (IL) 1, 2 or 3. Note that **Impact Level (IL) 1, 2 or 3** are respectively equivalent to **category C, B or A**.

3) **Scoping and consideration of alternatives:** The responsibility for scoping shall be that of the developers (or their EIA experts) in consultation with Lead Agencies and all relevant stakeholders. Scoping is intended to establish important issues to be addressed in the environmental impact and eliminate the irrelevant ones. After scoping, REMA approves the terms of reference that would be used for carrying out the environmental impact study.

4) **Baseline data collection and Analysis of Initial State:** Baseline data describes status of existing environment at a location before intervention of the proposed project. Site-specific primary data on and around a proposed site should be collected by experts conducting the environmental impact study to form a basis for future environmental monitoring.

5) **Impact prediction and analysis of alternatives:** Impact prediction is a way of forecasting the environmental consequences of a project and its alternatives. This action is principally a responsibility of an EIA expert. For every project, possible alternatives should be identified and environmental attributes compared. Alternatives should cover both project location and process technologies. Alternatives should then be ranked for selection of the most optimum environmental and socio-economic benefits to the community. Once alternatives have been analysed, a mitigation plan should be drawn up for the selected option and is supplemented with an Environmental Management Plan (EMP) to guide the developer in environmental conservation.

6) **EIA Report:** An environmental impact study culminates into preparation of a report by the EIA expert(s). An EIA report should provide clear information to the decision-maker on the different environmental scenarios without the project, with the project and with project alternatives. The developer is also required to produce an environment management plan (EMP). Any modifications made by a developer to the EIA report should be presented in form of an Environmental Impact Report Addendum. All these three documents should then be submitted to REMA by the developer.

7) **Public hearing:** After completion of EIA report the Organic Law requires that the public must be informed and consulted on a proposed development. RDB may, if it deems necessary, conduct a public hearing before EIA reports are appraised by its Technical Committee. Any stakeholders likely to be affected by the proposed project are entitled to have access to unclassified sections of the EIA report and make oral or written comments to REMA. REMA shall consider public views when deciding whether or not to approve a proposed project.

8) **Decision-making:** During the decision-making and authorization phase, EIA documents submitted to the Authority shall be reviewed by two decision-making committees: a Technical Committee and an Executive Committee constituted by REMA. If the project is approved, the developer will be issued

with an EIA Certificate of Authorization, which permits implementation of the project in accordance with the mitigation measures in the EIA Report and any additional approval conditions.

9) **Environmental Monitoring:** Monitoring should be done during both construction and operation phases of a project. It is done not just to ensure that approval conditions are complied with but also to observe whether the predictions made in the EIA reports are correct or not. Where impacts exceed levels predicted in the environmental impact study, corrective action should be taken. Monitoring also enables REMA to review validity of predictions and conditions of implementation of the Environmental Management Plan (EMP). During implementation and operation of a project, monitoring is a responsibility of the developer and REMA.

Figure below summarises the EIA procedure in Rwanda and duration (working days) corresponding to each stage.

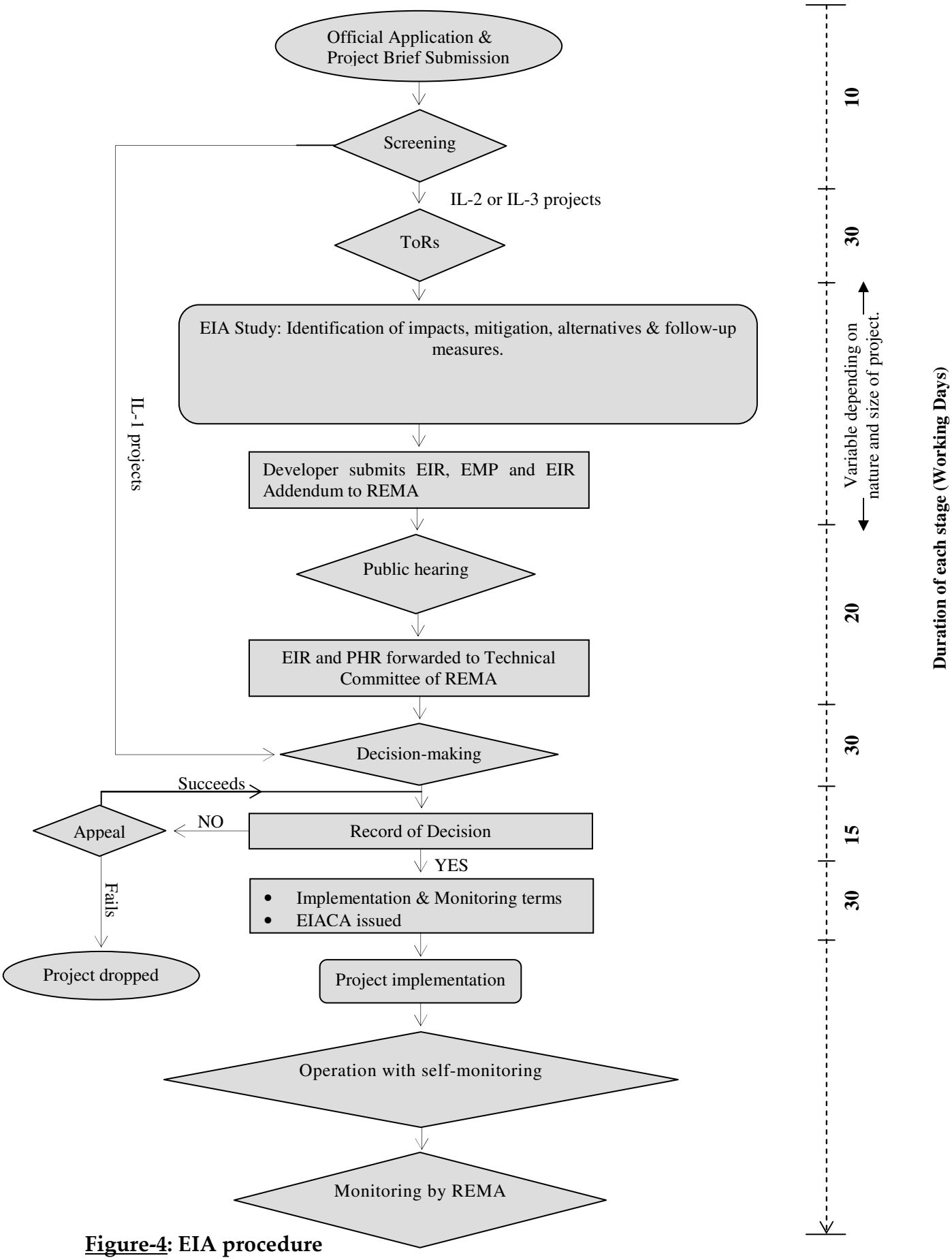


Figure-4: EIA procedure

4.1.4. The Law No 43/2013 OF 16/06/2013 governing Land in Rwanda

It determines the terms of use and management of land in Rwanda. It also fixes the principles to be applied to the recognized rights on the whole lands located along the national territory together with anything connected to it and which is incorporated to it, either naturally or artificially.

The Article 3 stipulates that "**The land is part of the common heritage of all the Rwandan people: the ancestors, present and future generations."**

Notwithstanding the recognised rights of people, only the State has the supreme power of management of all land situated on the national territory, which it exercises in the general interest of all with a view to ensuring rational economic and social development as defined by law. Therefore, the State is the sole authority to accord rights of occupation and use of land. It also has the right to order expropriation in the public interest. Related to this issue, only the government has power to grant the rights of occupation and use of the land, it also has the right to order the expropriation due to a public cause of public necessity, housing conditions and development (fixing up) of the national territory in the way defined by law against a fair and previous compensation.

The Article 4 mentions that any kind of discrimination, in particular the one focused on gender and to the use of land's rights is prohibited. The man and woman have the some rights related to the land's property.

4.1.5. The Act n°18/2007 dated 19/04/2007 related to expropriation due to a cause of public necessity

The quite new Act takes into account:

- The constitution funds related to the request of expropriation (set price);
- The funds of assessment of expropriation's compensation;
- The funds of payment of a fair compensation.

The competent authority together with the decision of expropriation due to a cause of public necessity are reserved to the Ministry in charge of land within its responsibilities (Ministry of Natural Resources) because the expropriation is to be dealt with in over one district (article 3, 4 and 5).

The examination are undertaken to fulfill (complete) the act referring to the demand's tariff which will be published by ministerial decree and which will be revised periodically. Meanwhile, a letter dated 27 October 2005 N° 2494/16.03/01.03 addressed to districts, towns and the city of Kigali proposes the alternative to proceed to the agreement between the expropriated and the expropriators according to the actual market (contract's) prices.

The article 16, precise that after the publishing of the last decision related to the expropriation due to a cause of public necessity, the competent land commission elaborates (draws up) an exhaustive list of owners and the persons holding right to land and to the achieved work on the funds. That list is displayed within a place which is to be reached by the public at the Office of the District, area and quarter concerning the ground's location so that the concerned persons may become a ware.

The expropriation process can not extend a period of four (4) months stating from the date of decision – making related to the expropriation by the targeted organs at the article 10 of the present act.

The article 17 stipulates that the works of measuring and calculation of expropriation compensation are carried on in presence of proprietors (owners) or persons holding right or their representatives and the representatives of the local authorities.

The article 24 mentions that the fair compensation determined by the land's commission is deposited within a due time which does not exceed one hundred and twenty days (120) starting from the day of its determination, otherwise the expropriation is annulated and becomes without any effect.

4.1.6 Law determining the management and utilisation of forests in Rwanda

Chapter II of the law determines the categories of forests: State, District and private forests. Article 6 under this chapter mentions the categories of State protected forests which are : national parks, natural forests and forests along the shores of rivers and lakes.

Chapter III relates to preparation and implementation of forest management plans for State, District and private forests.

By Article 19, the purpose of conservation and protection of forests must consists in the following:

1° to minimize adverse effects on forests resulting from various activities;

2° to give particular attention to the areas of the country faced with special environmental problems;

3^{0} to protect native plants and animals;

4° to protect the biodiversity;
5° to add value to and exploit forest resources;
6° to increase national economy.

4.2. Policy Framework

4.2.1 Agricultural Policy

The main objective of Rwanda agricultural policy is to intensify and the transform subsistence agriculture into a market oriented agriculture, and which requires the modern inputs, notably improved seeds and fertilizer. The policy puts emphasis on marshland development for increased food production.

The agricultural policy identifies critical areas in the sector that require improvement to achieve food security and export. These areas include intensification of fertilizer use which is at an average of 2kg/ha and pesticide use which is estimated an average of 1.6kg/ha (MINAGRI, 2005). However the country does not have pesticide use policy of legislation to guide the use and handling of these chemicals.

The policy also emphasis the need to adopt Integrated Pest Management practices and prevention of environmental degradation in order to achieve sustainable agricultural development

4.2.2 Land Policy

The most relevant chapter in the new land policy is chapter 5 on land policy guidelines. This chapter deals among others with the use and management of hill lands and marshlands in Rwanda. The policy calls for rational use and sound management of national land resources and be based on master plans. The policy also provides development of land use plans based on suitability of the areas/lands thus distinguishing the different categories of land and their purpose.

The policy gives strategic direction options including the need for hills be governed by the written law, and the obligation to develop that land should be imposed, specialization of agriculture in Rwanda taking into account the purpose of the land-use as shown in the various programmes, plans and soil maps, including water and soil conservation measures in demarcating land for agriculture sand incorporating agro-forestry as part of the agricultural landscape on the hills, given that it contributes to soil protection in particular and environmental protection in general, in the sense that it prevents desertification.

The policy also promotes irrigating areas that are more or less flat and semi-arid to support agricultural production while discouraging overgrazing and pasture burning. On the use and management of marshlands, the policy stipulates that marshlands meant for agriculture should not be cultivated except after adequate planning and environmental impact assessment.

To achieve the land policy objectives, the policy calls for the maintenance of marshlands in the state's private land and establishment of clear regulations for their sustainable use in order to avoid any disorderly farming with negative environmental consequences, undertaking an inventory of marshlands and clarification of their location and purpose and promoting specialization of marshland farmers and introduction of measures to avoid the division of land in smaller units.

The policy recognizes the importance of land tenure in the investment in land management and provides for land concession. However the policy needs to be operationalised to establish minimum and maximum concession period for marshlands. The period will determine the rate of investment in these areas and provide for environmental management.

4.2.3. Rwanda Environmental Policy

The overall objective of the Environmental Policy is the improvement of man's well-being, the judicious utilization of natural resources and the protection and rational management of ecosystems for a sustainable and fair development. The policy seeks to achieve this through improved health and quality of life for every citizen and promotion of sustainable socio-economic development through a rational management and utilization of resources and environment, integrating environmental aspects into all the development policies, planning and in all activities carried out at the national, provincial and local level, with the full participation of the population, conservation, preserve and restoration of ecosystems and maintenance of ecological and systems functions, which are life supports, particularly the conservation of national biological diversity, optimum utilization of resources to attain a sustainable level of resources consumption, awareness creation among the public to understand and appreciate the relationship between environment and development, ensuring participation of individuals and the community in the activities for the improvement of environment with special attention to women and the youth and ensuring the meeting of the basic needs of present population and those of future generations.

4.2.4. National Water Resources Management Policy

The water policy aims at fair and sustainable access to water, improvement of the management of water resources, etc. through reforestation on hillsides and water catchments areas. This policy would seem in conflict with other sector policies including agriculture and marshland development. While the water policy calls for improvement of water resources including marshlands, the agricultural policy calls for development of these ecosystems for agricultural production.

The policy also needs adopt a holistic approach to the management of water resources and integrate other polices related to it including the forest, wetlands, agriculture and land.

This policy is relevant to LAFREC subprojects as most of the project activities will be undertaken in areas with water resources.

4.2.5. Forest Policy

The forest policy is relevant to this project due to the role forests play in water regulation and soil conservation. The draft forest policy aims curbing the continuous wood shortage and but most important to this study the alarming deterioration of soil. The draft policy recognizes ecological and economic role of forest the policy also aims at linking forestry with rural development by establishing relationship between forestry and beneficiaries. Forest management is linked intricately to marshlands existence, soil productivity, water quality and flooding. The draft policy provides strategies for reforestation for environmental protection.

The policy is relevant to the project as some of the activities of the project touch on afforestation and revegetation of degraded areas especially catchments areas whether protected or non-protected. The agroforestry activities in the hills will also have positive impacts on the country's forest stock if successful through supply of firewood and rejuvenating the soil productivity thus intensifying crop production as opposed to encroachment to forested areas.

4.2.6. National Biodiversity Strategy and Action Plan (NBSAP)

This strategy defines the objectives and priorities for the conservation and sustainable management of biodiversity. The plan includes hillsides and wetlands and protected areas as some of the areas that need to be conservation.

The strategy focuses on five major areas i.e. improved conservation of protected areas and wetlands; sustainable use of biodiversity in natural ecosystems and agro-

ecosystems; rational use of biotechnology; development and strengthening of policy, institutional, legal and human resources frameworks; and equitable sharing of benefits derived from the use of biological resources.
The NBSAP is currently under updating to align with the CBD Strategic Plan 2011-2020 and the Aichi Biodiversity Targets, especially targets 5, 7, 11, 14 and 15.

LAFREC will support upgrading of Gishwati and Mukura forest reserves to a status of national park and will contribute to sustainable management of biodiversity in natural and agro-ecosystems by enhancing representation of native species in agro-ecosystems

4.2.8. EDPRSII

EDPRS II (2013-2018) highlights four thematic areas: (i) economic transformation, including green growth; (ii) rural development; (iii) productivity and youth employment; and (iv) accountable governance. It also identified environment and climate change, and disaster management as cross-cutting issues to be mainstreamed throughout all sectors. The proposed project is aligned with the thematic areas under specific programs, such as intensification of sustainable agriculture systems, rehabilitation of ecosystems, enhancing cross-sectoral coordination and implementation through local government, and use of local labor.

4.3. International Regulations

Rwanda is a signatory to a number of conventions on sustainable development and is a member of various bilateral and multilateral organizations. Some of the relevant development partners in this project are the World Bank and a number of United Nations agencies.

4.3.1. World Bank Safeguard Policies

This ESMF has been designed so that all investment under the LAFREC will comply with the relevant laws of Rwanda and the Environmental and Social Safeguard Policies of the World Bank. In this section, the Bank's safeguards policies and their applicability are discussed. The World Bank Safeguard Policies are:

1. *Environmental Assessment (OP/BP 4.01)*
2. *Natural Habitats (OP/BP 4.04)*
3. *Forestry (OP/BP 4.36)*
4. *Pest Management (OP/BP 4.09)*
5. *Physical Cultural Resources (OP/BP 4.11)*
6. *Indigenous Peoples (OP/BP 4.10)*
7. *Involuntary Resettlement (OP/BP 4.12)*

8. *Safety of Dams (OP/BP4.37)*
9. *Projects on International Waters (OP/BP7.50)*
10. *Projects in Disputed Areas (OP/BP 7.60)*

In preparing this ESMF, a consideration of the type of future investments planned vis-à-vis the baseline data presented in section 3 and the requirements of the Bank Safeguard policies, has led to the determination that the following Bank policies are triggered.

1. Environmental Assessment (OP/BP 4.01)
2. Involuntary Resettlement (OP/BP 4.12)
3. Pest Management (OP/BP 4.09)
4. Natural Habitats (OP/BP 4.04)
5. Forestry (OP/BP 4.36)
6. Physical Cultural Resources (OP/BP 4.11)
7. Projects on International Waterways (BP 7.50)

A complete description of the bank safeguards and their triggers for applicability can be found on the World Bank's official web site www.worldbank.org and are summarized in this chapter, to be used as part of the Environmental and Social Management process presented in section 6 of this ESMF.

4.3.1.1. Environmental Assessment (OP/BP 4.01)

This policy requires environmental assessment (EA) of projects proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus to improve decision making. The EA is a process whose breadth, depth, and type of analysis depend on the nature, scale, and potential environmental impact of the proposed investments under the LAFREC. The EA process takes into account the natural environment (air, water, and land); human health and safety; social aspects (involuntary resettlement, indigenous peoples, and cultural property) and transboundary and global environmental aspects.

The environmental and social impacts of the LAFREC will come from the proposed investment activities under Components 1 that will receive financing under the LAFREC. However, since the exact location of these investments will not be identified before bank appraisal of the project, the EA process calls for the GoR to prepare an Environmental and Social Management Framework (ESMF).

This report which will establish a mechanism to determine and assess future potential environmental and social impacts during implementation of LAFREC

activities, and then to set out mitigation, monitoring and institutional measures to be taken during operations of these activities, to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

Operational Policy 4.01 further requires that the ESMF report must be disclosed as a separate and stand alone document by the Government of Rwanda and the World Bank as a condition for bank appraisal of the LAFREC. The disclosure should be both in Rwanda where it can be accessed by the general public and local communities and at the Info shop of the World Bank and the date for disclosure must precede the date for appraisal of the program.

The policy further calls for the LAFREC as a whole to be environmentally screened to determine the extent and type of the EA process.

As part of the ESMF process, proposed projects and subprojects under the LAFREC are to be designed at the local level to ensure that they are screened for potential impacts and that they comply with the requirements set out under World Bank safeguard policies.

The World Bank system assigns a project to one of three project categories, as defined below:

Category "A" Projects

An EIA is always required for projects that are in this category. Impacts are expected to be 'adverse, sensitive, irreversible and diverse with attributes such as pollutant discharges large enough to cause degradation of air, water, or soil; large-scale physical disturbance of the site or surroundings; extraction, consumption or conversion of substantial amounts of forests and other natural resources; measurable modification of hydrological cycles; use of hazardous materials in more than incidental quantities; and involuntary displacement of people and other significant social disturbances.

Category "B" Projects

Although an EIA is not always required, some environmental analysis is necessary. Category B projects have impacts that are 'less significant, not as sensitive, numerous, major or diverse. Few, if any, impacts are irreversible, and remedial measures can be more easily designed. Typical projects include rehabilitation, maintenance, or upgrades, rather than new construction.

Category "C" Projects

No EIA or other analysis is required. Category C projects result in negligible or minimal direct disturbance of the physical environment. Typical projects include education, family planning, health, and human resource development.

The LAFREC has thus been screened and assigned an EA Category B. This category of projects is defined as follows:

Category B projects are likely to have potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats and are less adverse than those of category A projects. The EA process for category B projects examines the potential negative and positive environmental impacts and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance.

Therefore, this ESMF sets out to establish the EA process to be undertaken for implementation of project activities in the proposed LAFREC when they are being identified and implemented.

This process requires that LAFREC and its implementing partners screen their activities to identify their potential adverse impacts and thereby determine the corresponding mitigation measures to incorporate into their planned activities.
Most of the subprojects of the LAFREC will fall under category B project categorization and will require the development of EA reports as well as EMPs.

4.3.1.2. Natural Habitats (OP/BP 4.04)

The conservation of natural habitats, like other measures that protect and enhance the environment, is essential for long term sustainable development. The Bank therefore supports the protection, maintenance, and rehabilitation of natural habitats.

Natural Habitats are land and water areas where the ecosystems biological communities are formed largely by native plant and animal species, and human activity has not essentially modified the areas primary ecological functions. All natural habitats have important biological, social, economic, and existence value. Important habitats may occur in tropical humid, dry, and cloud forest; temperate and boreal forest; Mediterranean-type shrub lands; natural arid and semi-arid lands, mangrove swamps, coastal marshes, and other wetlands; estuaries, sea grass beds,

coral reefs, freshwater lakes and rivers; alpine and sub alpine environments, including herb fields, grasslands, and tropical and temperate grasslands.

Therefore, the Natural Habitats policy may be triggered in certain cases by the LAFREC sub project activities to ensure that the natural ecosystems of the lakes, rivers and forests keep their role of supporting varying degrees of natural complexities of flora and fauna.

Therefore, this OP requires that any activities funded under the LAFREC that adversely impacts these ecosystems are successfully mitigated so that the balance of the ecosystems are enhanced or maintained. This would require LAFREC to design appropriate conservation and mitigation measures to remove or reduce adverse impacts on these ecosystems or their functions, keeping such impacts within socially defined limits of acceptable change. Specific measures may depend on the ecological characteristics of the affected ecosystem. Such measures must include provision for monitoring and evaluation to provide feedback on conservation outcomes and to provide guidance for developing or refining appropriate corrective actions.
"No project activity that results in the significant reduction in the mean water level or completely drains a lake, river, or wetland area or floodplain due to pollution of these ecosystems, will be permitted under the LAFREC".

4.3.1.3. Forest Operational Policy (OP 4.36)

This operational policy aims to reduce deforestation, enhance the environmental contribution of forested areas, promote forestation, reduce poverty, and encourage economic development.

The policy recognizes the role forests play in poverty alleviation, economic development, and for providing local as well as global environmental services. Success in establishing sustainable forest conservation and management practices depends not only on changing the behavior of all critical stakeholders, but also on a wide range of partnerships to accomplish what no country, government agency, donor, or interest group can do alone.

The forest strategy suggests three equally important and interdependent pillars to guide future Bank involvement with forests including harnessing the potential of forests to reduce poverty, integrating forests in sustainable economic development, and protecting vital local and global environmental services and forest values.

This policy applies to the following types of Bank-financed investment projects:

a. projects that have or may have impacts on the health and quality of forests;
b. projects that affect the rights and welfare of people and their level of dependence upon or interaction with forests;
c. projects that aim to bring about changes in the management, protection, or utilization of natural forests or plantations, whether they are publicly, privately, or communally owned.

The Bank does not finance projects that, in its opinion, would involve significant conversion or degradation of critical forest areas or related critical habitats. If a project involves the significant conversion or degradation of natural forests or related natural habitats that the Bank determines are not critical, and the Bank determines that there are no feasible alternatives to the project and its sitting, and comprehensive analysis demonstrates that overall benefits from the project substantially outweigh the environmental costs, the Bank may finance the project provided that it incorporates appropriate mitigation measures. The project activities that is likely to have negative impacts on forests will not be funded under LAFREC.

4.3.1.4. Pest Management Operational Policy (OP 4.09)

The policy supports safe, effective, and environmentally sound pest management. It promotes the use of biological and environmental control methods. An assessment is made of the capacity of the country's regulatory framework and institutions to promote and support safe, effective, and environmentally sound pest management. The LAFREC project components will trigger this policy especially those activities that will focus on agriculture.

In appraising a project that will involve pest management, the Bank assesses the capacity of the country's regulatory framework and institutions to promote and support safe, effective, and environmentally sound pest management. As necessary, the Bank and beneficiary country incorporate in the project components to strengthen such capacity.

The Bank uses various means to assess pest management in the country and support integrated pest management (IPM) and the safe use of agricultural pesticides: economic and sector work, sectoral or project-specific environmental assessments, participatory IPM assessments, and investment projects and components aimed specifically at supporting the adoption and use of IPM.

For World Bank funded agriculture projects, pest populations are normally controlled through IPM approaches, such as biological control, cu1tura.l practices,

and the development and use of crop varieties that are resistant or tolerant to the pest. The Bank may finance the purchase of pesticides when their use is justified under an IPM approach.

A pesticide management plan is being developed though a different study for the LAFREC to ensure that any adverse impacts that could be caused by the sub projects are anticipated in advance and impacts mitigated.

4.3.1.5 Physical Cultural Resources (OP/BP 4.11)

Cultural heritage resources are normally not fully known during project preparation, but some road works may be located in the influence area of some sites. Graves for instance, could be located along road project sites. Construction and rehabilitation operations may require borrow pit excavations or some limited movements of earth. Such activities may have potential impacts on previously unidentified physical cultural resources through chance finds of an archaeological nature. This policy requires that whenever physical cultural resources are encountered an investigation and inventory of cultural resources potentially affected need to be carried out. Mitigation measures need to be included where there are adverse impacts on physical cultural resources.

This ESMF provides a clear procedure for identification, protection and treatment of archaeological artefacts discovered; these procedures will be included in the environmental and social management plan and in standard bidding documents. The environmental and social screening tool will include the identification of chance finds. The project will be reviewed for potential impact on physical cultural property and clear procedures will be required for identification, protection of cultural property from theft, and treatment of discovered artefacts will be included in standard bidding documents. While not damaging cultural property, sub-project preparation may identify and include assistance for preservation of historic or archaeological sites.

4.3.1.6. Operational Policy/Bank Procedure (OP/BP 7.50): Projects on International Waterways

The Bank recognizes that the cooperation and good will of riparians is essential for the efficient utilization and protection of international waterways and attaches great importance to riparians making appropriate agreements or arrangement for the entire waterway or any part thereof. Projects that trigger this policy include

hydroelectric, irrigation, flood control, navigation, drainage, water and sewerage, industrial, and similar projects that involve the use or potential pollution of international waterways. This policy will apply for the LAFREC due to the inclusion of hydrological studies (for the purposes of flood forecasting) in part of the Congo basin, and potentially Nile basin.

This policy relates to the relations between the riparian states. Therefore, the Bank attaches great importance to the riparian making appropriate agreements or arrangements for the entire waterway, or parts thereof, and stands ready to assist in this regard. This project is being undertaken in international waters thus the policy is triggered.

In the absence of such agreements or arrangements, the Bank requires, as a general rule, that the prospective borrower notifies the other riparian of the project. The policy lays down detailed procedures for the notification requirement, including the role of the Bank in affecting the notification, period of reply and the procedures in case there is an objection by one of the riparian to the project. However, where only hydrological studies and not physical investments are concerned, an exemption may be obtained to the notification requirement.

The policy applies to any river, canal, lake, or similar body of water that forms a boundary between, or any river or body of surface water that flows through, two or more states, whether World Bank members or not. It also includes any tributary or other body of surface water any bay, gulf, strait, or channel bounded by two or more states or, if within one state, recognized as a necessary channel of communication between the open sea and other states and any river flowing in to such waters.

4.3.1.7. Operational Policy (OP 4.12): Involuntary Resettlement

This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by (a) the involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets, or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or (b) the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons. For project activities that impact people and livelihoods in this way, LAFREC will have to comply with the requirements of the disclosed RPF to comply with this policy. This policy is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas.

The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. This policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by the involuntary taking of land resulting in relocation or loss of shelter, lost of assets or access to assets, or loss of income sources or means of livelihood. This applies whether or not the affected persons must move to another location; or the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

To address the impacts covered under this policy, the proponent prepares a resettlement plan or a resettlement policy framework. This framework covers the development of a resettlement plan or resettlement policy framework which must include measures to ensure that the displaced persons are informed about their options and rights pertaining to resettlement. The displaced persons are consulted on, offered choices among, and provided with technically and economically feasible resettlement alternatives and provided prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project.

To achieve the objectives of this policy, particular attention is paid to the needs of vulnerable groups among those displaced, especially those below the poverty line, the landless, the elderly, women and children, indigenous peoples, ethnic minorities, or other displaced persons who may not be protected through national and compensation legislation.

LAFREC will make all possible efforts to avoid impacts on people, land, property, including people's access to natural and other economic resources, as far as possible. Notwithstanding, land acquisition, compensation and resettlement of people seems inevitable in projects that will require land acquisition. This social issue is of crucial concern to the Government of Rwanda, LAFREC and the Bank, as its impact on poverty, if left unmitigated, is negative, immediate and widespread. Therefore, OP 4.12 will be triggered in those cases.

A separate Resettlement Policy Framework (RPF) and Process Framework (PF) are thus being prepared by the Government of Rwanda and will be submitted for approval to the Bank in compliance with OP 4.12. The RPF will set the guidelines for the Resettlement and Compensation Plans (RAPS) that would have to be prepared when any program investment triggers this policy. The RAPS would be prepared by

LAFREC and its implementing partners and would have to be submitted to the Rwanda Environment Management Authority (REMA) for approval. In some cases the World Bank reserves the right to also approve any RAP as a condition for that particular project investment to be financed. The PF will address issues related to restriction of access to natural resources arising from, e.g. the increased enforcement of regulations within the Gishwati and Mukura forest reserves.

This policy would be triggered when a project activity, in the cases mentioned above, for example, causes the involuntary taking of land and other assets resulting in:

- Relocation or loss of shelter,
- Loss of assets or access to assets
- Loss of income sources or means of livelihood, whether or not the affected persons must move to another location.

Table 1: Summary of World Bank Safeguards Policies

Safeguard policy	Description
OP/BP 4.01 Environmental Assessment	EA to be conducted for all projects that fall into either World Bank Category A or Category B.
OP/BP 4.36 Forestry	The Bank's lending operations in the forest sector are conditional on government commitment to undertake sustainable management and conservation-oriented forestry. In forestry areas of high ecological value, the Bank finances only preservation and light, non-extractive use of forest areas.
OP/BP 4.04 Natural Habitat	The conservation of natural habitat is essential for long-term sustainable development. The Bank supports, and expects borrowers to apply, a precautionary approach to natural resources management to ensure opportunities for environmentally sustainable development. The Bank does not support projects that involve the significant conservation or degradation of critical natural habitats.
OP 4.09 Pest Management	In Bank- Financing operations, pest populations are normally controlled through IPM approaches, such as biological control, cultural practices, and the development and use of crop varieties resistant or tolerant to the pest. The Bank may Finance the purchase of pesticides when their use is justified under an IPM approach.

Safeguard policy	Description
OP/BP 4.12 Involuntary Resettlement	People who have to be removed or who loose their livelihood as a result of the project must be resettled, compensated for all of their losses and they must be provided with a situation that is at least as good as the one from which they came.
OP/BP 4.11 Physical Cultural Resources	The policy is triggered in case cultural artifacts are unexpectedly found during implementation of works. The policy requires for an investigation, inventory and mitigation measures to be put in place for cultural resources potentially affected.
OP/BP 7.50 International Waterways	If a project has the potential to negatively affect the quality or Quantity of water of a waterway shared with other nations the Bank will insist that a negotiated agreement be established between the two or more nations involved. irrigation, drainage, water and sewage, industrial and similar projects that involve the use or potential pollution of international waterways (rivers, canals, lakes or similar bodies of water)

4.3.2. International Conventions

Rwanda being a signatory to some of the international conventions that are relevant to the LAFREC, it's imperative that we review some of the conventions within which the study and the project is carried out.

4.3.2.1. United Nations Convention on Biological Convention

The three goals of the CBD are to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising out of the utilization of genetic resources. Rwanda being a signatory of this convention it's supposed to work towards the achievement of the three goals.

The convention calls for the adoption of national strategies, plans and programmes for the conservation and sustainable use of biological diversity into their relevant sectoral and cross-sectional plans, programmes and policies. One of the tools that are prescribed for the management of biodiversity is environmental assessment. Article 14 of the convention deals with impact assessment and minimizing of adverse impacts of activities that are likely to cause significant adverse effects on biological diversity.

4.3.2.2. EAC Protocol on Environment

The protocol was signed by the Partner States of the East African Community on 29th November 2003. It has relevant provisions for environmental and social management for the project.

Article 5: Paragraph 4 provides that Partners States should promote sustainable utilization of water resources while taking into consideration factors such as ecology, geographic, climatic, hydrologic factors among others; the social and economic needs of each Partner States; the population dependent on the water resources; existing & potential uses of the water resources.

Article 6: Paragraph 1 identifies the protection and conservation of the basin and its ecosystem with emphasis on improving water quality and quantity; preventing the introduction of invasive species; conservation of biological diversity and forest resources; protection and conservation of wetlands and fisheries resources conservation. Part 2 of the article provides for the harmonization of laws and policies for stakeholder participation in protection, conservation and rehabilitation.
Sustainable agriculture and land use practices to achieve food security and rational agricultural production is provided for in Article 9.

Article 12 of the Protocol urges Partner States to develop national laws and regulations requiring project proponents to undertake EIA and review of EIA reports to be done by all the Partner States if the potential impacts are likely to be trans-boundary and the same to apply for Environmental Audits in Article 13. Partner states should ensure control of pollution from non-point sources through legal, economic and social measures. This is provided for in Article 20 which further states that pollution control measures should promote sustainable forestry practices, appropriate agricultural land use methods, sanitation and hygiene within the basin.
Public participation is provided for in Article 22 which should be enhanced to influence government decisions on project formulation and implementation.

Article 23 of the Protocol provides that Partner States should promote Community involvement and mainstreaming gender concerns at all levels of socio-economic development especially in decision making, policy formulation and implementation of projects and programmes.

4.3.2.3. United Nations Framework Convention on Climate Change (UNFCCC)

The United Nations Framework Convention on Climate Change (UNFCCC) provides the basis for global action "to protect the climate system for present and future generations".

The Convention on Climate Change sets an overall framework for intergovernmental efforts to tackle the challenge posed by climate change. It recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. The Convention enjoys near universal membership, with 189 countries having ratified.

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

Under the Convention, governments:

- Gather and share information on greenhouse gas emissions, national policies and best practices.
- Launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries.
- Cooperate in preparing for adaptation to the impacts of climate change.

The proposed projects in the LAFREC will assist in the implementation of the specific requirements of the convention.

4.3.2.3. United Nations Convention to Combat Desertification

The objective of the United Nations Convention to Combat Desertification (UNCCD) is to combat desertification and to mitigate the effects of droughts in seriously affected countries, especially those in Africa. It seeks to achieve this objective through integrated approaches to development, supported by international cooperation and partnership arrangements, in affected areas. It lays LAFREC

emphasis on long term strategies to focus on improved productivity of land and the rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions, in particular at the community level. The proposed project is designed to implement the requirements of the UNCDD.

Table below indicates the date of signature and the date of ratification of some international treaties and agreements relevant to environment.

Table 2: International agreements ratified by Rwanda

Agreement	Date of signature	Date of ratification
Convention on Biological Diversity	10/06/1992	18/03/1995
United Nations Framework Convention on climate change	10/06/1992	18/08/1998
United Nation Convention to Combat Desertification	10/06/1992	22/10/1998
Convention on International Trade in Endangered Species of Wild Fauna and Flora	20/10/1980	18/01/1981
African Agreement on the nature conservation and natural resources	15/09/1968	20/05/1975

These treaties and international agreements are relevant for the protection and the conservation of the environment and in particular the biodiversity in Rwanda together with the mobilization of funds as well at the bilateral and multilateral level.

4.4. Environmental Institutions

In Rwanda, the implementation of natural resources management policies and sectoral strategies involves several stakeholders, including government state institutions, NGOs, civil society, the private sector, decentralised entities and donors. Likewise, at regional levels, many actors in the five member countries are involved in carrying out environmental management interventions at different levels, using different modalities and applying different standards.

4.4.1. Ministry of Natural Resources (MINIRENA)

MINIRENA is a multisectoral ministry covering five sectors: Lands; Water resources; Forestry; Mines and Geology; and Environment. MINIRENA is responsible for the development of policies, laws and regulations as well as coordination of the all activities in the management of land, water, forestry, mining and quarrying and environment, as well as their follow up and evaluation.

MINIRENA is also responsible for promoting private sector investments in natural resource protection activities; developing research for improved knowledge of the wealth of the country's subsoil and appropriate exploitation technologies; putting in place mechanisms to facilitate access of the population to clean drinking water and sanitation infrastructure; coordinating all the activities for better management of natural resources; institutional capacity building for decentralized entities in natural resource management, both at the central and local level.

Two authorities constitute the two arms of MINIRENA -

Rwanda Environment Management Authority (REMA) In 2006, Rwanda Environment Management Authority (REMA) was established to act as the implementation organ of environment-related policies and laws. REMA is also tasked to coordinate different environmental protection activities undertaken by environmental promotion agencies; to promote the integration of environmental issues in development policies, projects, plans and programmes; to coordinate implementation of Government policies and decisions taken by the Board of Directors and ensure the integration of environmental issues in national planning among concerned departments and institutions within the Government; to advise the Government with regard to the legislation and other measures relating to environmental management or implementation of conventions, treaties and international agreements relevant to the field of environment as and when necessary; to make proposals to the Government in the field of environmental policies and strategies.

4.4.2. Rwanda Natural Resources Authority (RNRA)

RNRAs is an authority that leads the management of promotion of natural resources which is composed of land, water, forests, mines and geology. It shall be entrusted with supervision, monitoring and to ensure the implementation of issues relating to the promotion and protection of natural resources in programs and activities of all national institutions. Particularly, RNRA is responsible for:

- Implementing national policies, laws, strategies, regulations and government resolutions in matters relating to the promotion and protection of natural resources;
- Making a follow up and implementing international conventions Rwanda ratified on matters relating to the conservation of natural resources;
- Advising the Government on appropriate mechanisms for conservation of natural resources and investments opportunities;
- Registering land, issuing and keeping land authentic deeds and any other information relating to land of Rwanda;
- Ensuring proper geological data and their respective maps;
- Providing technical advise on the proper use of natural resources;
- Making follow up and supervising activities relating to proper management, promotion and valuation of natural resources;
- Rehabilitating and conserving where natural resources are damaged in the country;
- Making a follow up and supervising activities relating to the proper use of natural resources;
- Promoting activities relating to investment and added value in the activities of use and exploitation of natural resources in Rwanda;
- Initiating research and study on natural resources and to publish the results;
- Instituting regulations, guidelines and appropriate mechanisms for management, use and conservation of natural resources and ensuring their implementation;
- Establishing cooperation and collaboration with other regional and international institutions with an aim of harmonising the performance and relations on matters relating to management of natural resources.

RNRA is composed of 4 departments:

Department of Geology and Mines with the following responsibilities:

- To conduct survey in geology and mining basing on the national priorities,
- To promote appropriate technologies aimed at development of geology and mining, to establish value of mining products and quarries,
- To supervise and monitor private and public mining, trade and value added and mining

Department of Lands and Mapping

The overall objective of the department is to put in place and operationalise an efficient system of land administration and land management that secure land ownership, promote investment in land for socio-economic development and poverty reduction.

Department of Forestry and Nature Conservation

This department is in charge of supervision, following up and ensuring that issues relating to forest receive attention in all national development plans.

- In particular, the responsibilities of DFNC are the following:
  Participating in designing the policies and strategies relating to forestry as well as promoting agro forestry and ensuring the implementation of such policies and strategies;
  Advising the Government on policies, strategies and legislation related to the forestry management as well as to the implementation of international conventions relating to the forestry and to the protection of natural resources such as land, water and forest biodiversity in forestry area;
  Supporting organs that are in charge of fighting soil erosion with the aim of safeguarding forestry and environment;
  Preparing national programs in matters of reforestation, forestry management and helping Districts to prepare their own forestry management and processing and supervising the implementation of such programs;
  Advising, assisting and encouraging private sector stakeholders in participating in activities of reforestation, their effective management and to make them productive;
  Making and updating the list of tree species to be planted in the country and their respective suitable areas according to the type of soil and the expected usage of such trees and provide advice and instructions with regard to the species of the trees or related products to be imported or exported;
  Ensuring the management and exploitation of public forest resources;
  Undertaking research, investigations, studies and other relevant activities with regard to the importance of forestry in the national economy and to the exploitation of forestry related products and disseminating the findings;
  Disseminating research findings on technology of planting trees in land for cultivation and in pastures and in specific reforestation, efficient maintenance of the forests and utilization of such resource to income generation, rational utilization of the forests and related products and in collecting all the data on forestry and related products;
- Preparing technical norms for activities related to reforestation, protection and rational utilization of forests as well as adding value to forestry products;

Evaluating and closely monitoring development programs in order to adhere to the standards in the management and rational utilization of forests ; Developing relationship with other institutions, international organizations related to activities of forestry.

Department of Integrated Water Resources Management

The department is in charge of water resources management and allocation. The main responsibilities are:

- To ensure effective framework for water resources governance
- To put in place and operationalize cost-effective water resources assessment and monitoring system
- To ensure that critical watersheds and catchments are rehabilitated and basic ecological functions restored
- To put in place and operationalize an efficient and equitable water allocation and utilisation framework
- To put in place and implement an effective framework for water-related disaster management, climate change mitigation and adaptation
- To ensure that basic capacities are installed and effective framework for sustained WRM capacity knowledge management are developed
- To ensure effective framework for managing shared waters

4.4.2. Other Key Ministries

The responsibility of NRM is shared with a number of line ministries including hydroelectricity and transport, health and hygiene, agriculture and irrigation; planning; finance and other ministerial institutions. These include:

- **MINAGRI:** sets national policies on agriculture, livestock and fisheries and provides guidelines and standards for land use management including terracing and agroforestry. MINAGRI is also charged with development of arable land for agricultural production and animal husbandry. The Ministry works closely with RAB which the technical and regulatory arm of the Ministry.

- **MINALOC:** Under the framework of decentralization, MINALOC oversees the implementation of the decentralization process as well as relevant community and social protection programmes. This Ministry is also responsible for environment governance and therefore for mobilizing the public to participate in the management and protection of natural resources.

The National Decentralization Policy adopted in May 2000 holds local populations responsible for managing resources, including natural resources. Districts are responsible for production and protection of water, tourism, and the environment. Similarly, cities, towns, and municipalities are responsible for land and environmental management, urban planning, road maintenance, maintenance of protected and recreational areas, and providing drinking water, sanitation, and waste treatment and disposal.

MINALOC is over-seeing various community environment management related programmes in the districts. These include: Vision 2020 Umurenge, HIMO (high Labor Intensive public Works), Ubudehe and RLDSF(Rwanda Local Development Support Fund) which involve poor communities to participate in various initiatives aimed at enhancing their income. For instance, under Umurenge, the poorest categories are identified and supported to engage in activities that increase agricultural and livestock productivity. These include terracing schemes, supplying new crop and livestock technologies, improving the post-harvest environment (storage, processing) and providing access to financial services. These activities are identified through the Ubudehe exercise and are being implemented at the village (umudugudu) level under the management and coordination of the Umurenge in collaboration with the District authorities. Under the same arrangement, the poor are employed in public works (HIMO) in order to earn income some of which is saved, so that they can access micro-credit and start income generating activities.

- **MINICOM**: sets policy for trade, industry including tourism and cooperatives (including small scale artisans). The Ministry promotes export and marketing of handcraft and tourism as well development and regulation o cooperatives and rural association. MINICOM is also charged with integrating environment in trade and industrial policies and strategies.

- **MININFRA**: is responsible for setting policies related to energy; urbanization and settlements; road and communication infrastructure; Meteorology, Urban Water supply. MININFRA oversees the resettlement of people who are displaced from within 50-metres of the Lakes and River banks.. Besides organizing human settlement MININFRA has the mandate for town planning, public infrastructure and transport; the management of water supply as well as actions to encourage water harvesting in the settlement and housing sector.

- **MINECOFIN**: is responsible for Macro-economic policy instruments, resource mobilization, and coordination of development partners and allocation of budgets to different Ministries and sectors. MINECOFIN is also charged with overseeing and advising on the formation of various Funds (including the Environment and Forestry Funds). It is also concerned with mainstreaming natural resources concerns in EDPRS and the budgetary processes.

- **MIGEPROFE**: sets policies and guidelines for mainstreaming gender in formulation and implementation of central and local governments' programmes. The Ministry is mandated to guide MININERA and local governments to mainstream gender related issues in natural resource management and mobilize communities (women, men and youth) in the activities of natural resource protection and management.

- **MINEDUC**: is responsible for training human resources in the management and protection of natural resources; It oversees the implementation of environmental education programmes in schools (by supporting Environmental Clubs), as well as initiating the process of mainstreaming environment into schools.

4.4.3. RDB/Tourism and Conservation Department

RDB is responsible for Policies and strategies that promote tourism; It is also responsible for generating and management of information on tourism potentials in/ and around protected areas and other potential sites for tourism within the LVB. This includes generating spatial information on planning, monitoring and management of ecosystems.

RDB is spear-heading the establishment and implementing of collaborative management regimes in protected areas- which encompasses improving access to wildlife resources and revenue sharing between communities, local authorities and central treasury. Collaborative management is geared towards curbing Illegal hunting/ poaching with a view to protect endangered species.

4.4.4. Provincial, District and Lower level Environmental Committees

The Prime Minister's order n°008/16.01 of 26/11/2010 determines the responsibilities, organization and functioning of committees in charge of the environment conservation and protection

5. ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK FOR LAFREC

5.1. Objectives of the EMSF

This ESMF is intended to be used as a practical tool during project implementation. It explicitly describes the environmental steps to be undertaken in the implementation of the planned subprojects under LAFREC investments and activities.

The ESMF is to ensure that the implementation of the LAFREC projects will be carried out in an environmentally and socially sustainable manner. It also provides a framework to enable communities/beneficiaries screen sub-projects and institutional measures to address adverse environmental and social impacts.

5.2. Specific Objectives of ESMF

The specific objectives of the ESMF are:

1) To establish clear procedures and methodologies for taking into consideration environmental and social issues during the planning, review, approval and implementation of subprojects to be financed under the project;
2) To prescribe project arrangements for the preparation and implementation of subprojects in order to adequately address World Bank safeguard issues;
3) To assess the potential environmental and social impacts of envisaged subprojects.

5.3. Description of Project Phases for Environmental and Social Management

Typical project activities to be implemented under this Project are divided into number of stages such as:

- Participatory planning with communities / farmer groups / cooperatives;
- Implementation of activities;
- Maintenance and monitoring.

Each of the project phases listed above has environmental and social consequences on the different environmental and social components such as soil, water and to the society. Table 3 below relates the project activities of the four project stages to their environmental consequences.

Table 3: Outline of typical Project activities and examples of potential impacts (negative and positive of the LAFREC

ENVIRONMENTAL COMPONENTS / PROJECT ACTIVITIES	Geology	Soils	Topography	Surface water resources	Surface water quality	Groundwater resources	Groundwater quality	Archaeology/Paleontology	Flora	Terrestrial Fauna	Aquatic Fauna	Air quality	Noise and vibration	Cultural heritage and sites	Local communities	Livelihoods	Current Land use	Future land use option	Local economy	National economy	Existing Infrastructure and services	Health and safety	Aesthetic and amenity values
Participatory Planning																							
Mobilization of people and other stakeholders															X								
Site identification															X	X	X	X	X		X	X	X
Surveying of the project site	X	X							X								X	X	X		X	X	X
Project design															X			X					
Implementation																							
Mobilization of resources		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Site clearing activities	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
Natural resource development	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X		X	X	X
Acquisition of Construction materials	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
New and old Infrastructure rehabilitation		X	X	X	X	X	X		X	X	X	X	X		X	X	X		X		X	X	X
Maintenance and Monitoring																							
Catchments protection		X		X	X	X	X		X	X					X	X	X	X	X			X	
Provision of employment															X	X			X		X	X	X
Operation of infrastructure				X	X	X	X				X				X	X			X		X	X	X
Infrastructure repair and maintenance					X		X						X		X	X			X		X	X	X

X indicates component of the project activity that may have potential impacts either negative or positive ones.

5.4. Potential Positive LAFREC Environmental and Social Impacts

Overall, the LAFREC is likely to have a positive impact on the local environment, both in the short, medium and long term, for the following reasons:

- ✓ Increased protection of remnant natural forests, and enhanced ecological connectivity of natural forests through increased use of native species in the landscape. This will have a concomitant positive impact on the protection and maintenance of native biodiversity within these forests, which is of global importance as they form part of the Albertine Rift Forest Ecoregion.

- ✓ Enhancement of natural resource dependent livelihoods and diversification of incomes, including significant potentials for nature-based (landscape and wildlife) tourism linked to the development of the Kivu Belt and a Biosphere Reserve. This will increase both local resilience to climate extremes and the incentives for long-term sustainable use of natural resources.

- ✓ More sustainable land management of both crop lands and pasture leading to improvements in productivity, watershed function and climate resilience.

- ✓ Flood attenuation due to reductions in peak flows through the increased forest cover and improved soil conservation, as well as improved flood preparedness through risk-mapping, forecasting and early-warning and response systems.

- ✓ Enhanced carbon sequestration through improved tree cover and soil conservation.

- ✓ Reduced sediment loading into local waterways from improved land and watershed management (including management of mining activities), leading to reduced costs to water treatment and hydropower generation, as well as reduced ecological impacts on Lake Kivu and other freshwater bodies.

5.5. Adverse LAFREC Environmental and Social Concerns

Project activities could potentially generate negative environmental and social impacts during the implementation and operation phases. This is because:

- ✓ Both the engineering works and establishment of enhanced forest reserve buffer zones may require new land,

- ✓ Sustainable land and watershed management activities may involve the introduction of new crops and species, which if poorly planned could result in the introduction of invasive species and/or intensification in the use of agrichemicals
- ✓ Land rehabilitation works could negatively impact drainage, if not well planned.
- ✓ Resource access restrictions may result from increased enforcement of existing environmental regulations in reserves and the surrounding landscape
- ✓ If poorly planned, livelihood activities could increase the unsustainable use of natural resources, as opposed to their sustainable management.
- ✓ Engineering works may have limited and local effects on communities both physically (air and water pollution, nuisance and contamination etc.); and socio-economically (land use, income generation, mobility and community association),

A summary of potential negative impacts and typical mitigation actions is provided in table 4 below.

Table 4: Potential negative impacts and mitigation measures.

Potential Impact	Specific issue for project activities	Mitigation Measures	Significance	Responsible Institution
Disturbance to the ecosystem and loss of natural habitat	Land rehabilitation works and small-scale construction could impact natural habitats	Rehabilitation works will be applied to already degraded agricultural lands Any rehabilitation of wetland and riparian habitats will involve use of native species and the cessation of cropping Basic national park infrastructure will be designed with minimal footprint, and away from any particularly sensitive sites (e.g. fruit trees that are known key resources for primates)	Low – there are few to no natural habitat areas left outside the reserves. Activities within the reserves are designed to have positive net effects on natural habitat conservation.	District teams / RDB, with oversight from Field Environment Officers
Nuisance from civil works	Earthworks and construction activities can create disturbance to local populations from noise and dust	If dust becomes a problem, wetting can be used.	Negligible – works will be relatively small-scale, based on use of local labor rather than heavy equipment, and restricted to daylight working hours. They will be located in agricultural fields and the reserves, not close to particularly sensitive sites, such as school.	District teams / RDB, with oversight from Field Environment Officers
Soil erosion	Exposed land during construction of soil conservation structures may induce erosion	Works shall be conducted primarily in the dry season. Paths in reserves will be designed with appropriate erosion control measures, such as cross drains, if necessary.	Low – land rehabilitation works are specifically intended to reduce erosion and run-off, and newly constructed bunds / ditches will be stabilized with vegetation as soon as feasible.	District teams / RDB, with oversight from Field Environment Officers
Destruction of physical cultural resources	Earthworks could disturb hidden PCR items	Chance finds procedure will be followed to identify and protect cultural property from theft. Any finds will lead to immediate freeze on related activities, and will be reported to the project team in REMA, who will communicate with appropriate national authorities and ensuree national requirements are observed.	Negligible – almost all earthworks will be shallow and occur on agricultural land already subject to frequent disturbance	District teams / RDB, with oversight from Field Environment Officers
Drainage	Construction activities and particularly earthworks could disrupt drainage patterns, threatening the integrity of the works	Land rehabilitation works will be designed to maintain existing drainage lines and protect them with vegetation and simple silt traps.	Low – land rehabilitation works will be designed to increase infiltration and with specific regard to regulating drainage	District teams with oversight from Field Environment Officers
Construction materials	Construction materials could be unsustainably sourced, or include hazardous substances	Construction materials for Park infrastructure will be locally sourced, but will not include timber from natural forests.	Low – only very basic Park infrastructure will be erected under the project	RDB
Waste from construction	Construction waste may contain polluting or even hazardous substances and pose a safety risk	Construction materials will not be stored on bare land. At the end of construction, sites will be cleaned with proper disposal of wastes –any hazardous material (e.g. paint) will be identified and removed, inert materials (e.g. concrete) will be buried, organic materials will be burnt or composted.	Low – only very basic Park infrastructure will be erected under the project, using local construction materials	District teams / RDB, with oversight from Field Environment Officers
Sanitation	Construction of building should take into account and provide adequate sanitation facilities	Appropriately engineered simple sanitation facilities will be incorporated in the designs for any guard posts of	Low– only basic Park infrastructure will be erected under the project,	RDB

Potential Impact	Specific issue for project activities	Mitigation Measures	Significance	Responsible Institution
		visitor centers	with limited occupancy	
Safety	Construction activities can pose safety risks during construction and operation	Maintain clean and orderly worksites. Any high-rise work (e.g. construction of elevated observation platforms) should involve the use of harnesses Installation of any electrical systems should only be done by competent professionals	Low – almost all construction will be small-scale, low structures. Very limited electrification will be needed (may lights for a visitor center).	RDB
Aesthetics	Construction of Park infrastructure should be appropriate to maintain the aesthetic values of the area	Designs will consider aesthetics, including landscaping of any visitor center	Low – only small scale structures will be involved, using mainly local materials	RDB
Agrichemical use	Changes in agricultural practices could result in increased agrichemical use	Assess agrichemical use and provide integrated pest and nutrient management training as necessary. See Integrated Pest Management Framework for more details.	Low – existing agrichemical use is low. The project will not directly promote agrichemical use except rarely, sparingly and as part of enhanced IPNM practices. Participatory land management planning will consider existing agrichemical use and the need to improve	District teams with oversight from Field Environment Officers
Unsustainable resource exploitation	Livelihood development activities could increase the pressure on natural resources	New or enhanced livelihood activities that rely on natural resources will only be supported where there are clear ownership / management structures, and will include capacity-building on sustainable resource management	Moderate – livelihoods will not include extractive uses of resources within the reserves, but the success of Park buffer zone management and maintenance of ecological infrastructure elsewhere (e.g. riparian buffers, protective forest strips) depends on functional NRM.	District teams with oversight from Field Environment Officers
Introduction of invasive species	Change in agricultural practices, such as agroforestry, could result in introduction of new species	In the unlikely event that any non-native species is used that is not already widely available, it will be screened for any potential adverse impacts	Low – the project is explicitly promoting the increased use of native species. Beyond that, only widely used exotics are expected to be involved.	District teams with oversight from Field Environment Officers
Disturbance of wildlife from tourism	Development of eco-tourism based on primate observation could stress remnant populations	Eco-tourism activities will follow practices already developed in Nyungwe National Park. Chimps will be habituated over a considerable length of time before any chimp tours are initiated. The project will support ongoing research and monitoring of the health of the chimps and other primates.	Low – RDB has considerable experience in managing primate-based tourism	RDB
Restricted access to resources	Resource access restrictions may result from increased enforcement of existing environmental regulations in reserves and the surrounding landscape	Impacted households will be identified and included within livelihood development programs. See Process Framework for more details.	Moderate – restrictions are already being enforced in Gishwati core forest area, but less so in Mukura and riparian buffers	District teams / RDB, with oversight from REMA
Land taking	Limited areas of land taking could be involved in the designation of the buffer zones for the upgraded Park, and the building of small structures – e.g. the Park visitor center (if	Any instances will be addressed in accordance with the Resettlement Policy Framework.	Moderate – activities are expected to be voluntary, with the possible exception of small areas of cropland within the designated buffer zone of	District teams / RDB, with oversight from REMA

Potential Impact	Specific issue for project activities	Mitigation Measures	Significance	Responsible Institution
	outside the Park) or any structures related to livelihood activities such as storage facilities for agricultural produce		the new Park.	

5.5.1. Localized Impacts

Most of the developments or subprojects planned under the LAFREC Project will vary from medium to small in scale. Consequently the significance of the direct negative environmental and social impacts is likely to be significant and small. All the activities planned under the project will have significant positive environmental impacts especially when considering the integrated ecosystem management of catchments.

5.5.2. Ecological Impacts and Land Degradation

Land degradation may arise due to subprojects that involve intensification of agriculture. The environmental and social screening tools will be used to identify and mitigate the potential impacts as they relate to certain types of community investments.

5.5.3. Potential Sources of Pollution

The use of agro-chemicals such as inorganic fertilizers and pesticides, and organic manure can lead to pollution, especially due to surface runoff into adjacent watercourses, including infiltration into groundwater. This will be carefully monitored through annual reporting tools described in section 7.4. Training will be provided to communities in proper handling and application of these materials as part of local capacity building component. The project will ensure that any activities that change patterns of agrichemical use are accompanied by training to ensure their use is appropriate and sustainable. Successful Integrated Pest Management/Integrated Crop Management (IPM/ICM) is based on sound farmer knowledge of the on-going ago-ecological processes of the farming environment. Such farmers are, therefore, technically empowered to make informed decisions on the most appropriate management strategies to apply a specific period of crop development and production cycle. Furthermore, integrated crop/pest management is a farmer-centered management approach that addresses issues beyond pest management. It offers the entry point to improvement of the entire agricultural production system. It can be successfully adopted in the presence of a national Integrated Pest Management (IPM) policy framework and institutional support.

5.6. Environmental and Social Screening Process

The section below illustrates the steps involved during environmental and social screening process leading to the review and approval of Rwanda sub-projects under the LAFREC. The screening process intends to:

- Determine repercussions of selected projects as to whether they likely to cause potential negative environmental and social impacts;
- Determine appropriate mitigation measures for activities with adverse impacts;
- Incorporate mitigation measures into project design;
- Review and approve project proposals,
- Monitor environmental parameters during project implementation.

The assignment of the appropriate environmental category will be based on the provisions of the World Bank Operational Policy (OP 4.01). The environmental and social screening of each proposed sub-project will be classified into categories A, B and C, depending on the type, location, sensitivity and scale of the project and the nature and the magnitude of its potential environmental and social impact. The categories are:

- **Category A**: Any project which is likely to have significant adverse environmental and social impacts that are sensitive, diverse or unprecedented. The impacts under this category affect broader area than the sites or facilities subjected to physical works. This category is equivalent to **Impact Level 3** (**IL3**) in Rwanda's General Guidelines for EIA (2006)

- **Category B**: Any project which is likely to have significant adverse on human populations or environmentally important areas including wetlands, forests, grasslands and any other natural habitat. Generally, they are less adverse than those of category A projects, the impacts are sites specific and few or any of them are irreversible and most of them are mitigated rapidly than category A. This category is equivalent to **Impact Level 2** (**IL2**) in Rwanda's General Guidelines for EIA (2006).

- **Category C**: Any project which is likely to have minimal or-any adverse environmental and social impact. Beyond screening no

further EA action is required. This category is equivalent to **Impact Level 1** (**IL1**) in Rwanda's General Guidelines for EIA (2006).

The extent of environmental work that might be required for sub-projects prior to implementation will depend on the outcome of the screening process described below:

5.6.1. Step 1: Screening of Project Activities and Sites

The initial environmental and social screening will be carried out through the use of the Project Screening Criteria Form (PSCF) used by REMA (Annexe-1) This form will be completed by the Field Environmentalist (EMO) from LAFREC team for the purposes of identifying the potential environmental and social impacts, determining their significance, assigning the appropriate environmental category, proposing appropriate environmental and social impact mitigation measures, and carrying out Environmental Impact Assessments (EIAs) if necessary.

The environmental screening procedure can lead to one of the following decisions:

- ✓ Category A (IL3) activities will not be implemented. Alternatives will be sought.

- ✓ Environmental and Social Impact Assessment (EIA) is required where the project is known to have significant adverse environmental and social impacts typical for higher-risk Category B (IL2) sub-projects.

- ✓ Preliminary environmental and social impact assessment is required where the project may have environmental and social impacts. Environmental Impact Assessment (EIA) is not necessary where the project is unlikely to cause environmental impacts.

- ✓ In case the project may result in resettlement, then the resettlement procedures shall be instituted as provided for in the RPF.

5.6.2. Step 2: Re-categorize activities according to expected Environmental and Social impact

The assignment of the appropriate environmental category will be based on the provisions of the World Bank Operational Policy (OP 4.01) on Environmental Assessment. Rwanda's EIA guidelines are consistent with the Environmental and

Social Impact screening categories contained in the safeguard policy of WB (OP 4.01) on Environmental Assessment mentioned above.

With regard to the LAFREC, it is likely that most projects will be categorised as low-risk or category B (IL1), meaning that the activities will have no significant environmental and social impacts and therefore do not require additional specific environmental assessment, only the application of standard mitigation measures identified by local project staff. If the screening form has only "**No**" entries, the project will not require further environmental work, and the EM0 will recommend approval of the activity to REMA and implementation can proceed.

Some activities may be characterized as higher-risk category B (IL2) with potential adverse environmental impacts on human populations or environmentally important areas including wetlands, forests, grasslands, and other natural habitats, few if any of which will be irreversible, and which can be mitigated. For these activities, the Project will provide funds as required by REMA to hire consultants to carry out environmental work as required.

Some projects might be categorised as **C (IL1)** if the environmental and social screening results indicate that

In these cases, the final determination regarding the extent of environmental and social work required will be made by REMA. Should any EIAs have to be carried out; these will be reviewed and approved by RDB for REMA and the World Bank and any other interested Development Partner or Financing Agency.

5.6.3. Step 3: Environmental and Social Field work

The analysis of the Project Screening Criteria Form (PSCF) will have categorised the sub-project and therefore identified the scope of the environmental work required. At this point the Field Environmentalist will make one of the following recommendations to REMA: (a) no environmental work will be required; (b) the implementation of simple mitigation measures will be enough, or (c) a separate EIA should be carried out.

Based on the recommendation arising from the screening process, the following environmental work can be carried out:

(a) Use of Environmental and Social Check List (ESCL) (Annex-2): Here the Field Environmentalist or the District Environmental Officer (DEO) would fill out the ESCL. This document will then be scrutinized and

amended by qualified personnel based on the requirements of the subproject being assessed. Activities categorised as Category B (IL2) - i.e. those that could benefit from the application of simple mitigation measures outlined in the checklists. Where the screening process identifies the need for land acquisition, qualified consultants would prepare a Resettlement Action Plan (RAP) in accordance with WB OP 4.12 and the Resettlement Policy Framework (RPF).

(b) Carrying out Environmental lmpact Assessment (EIA): Cases where the screening process indicated that the scheduled activities are more complex, and would require that a separate EIA be carried out. The terms of reference for these activities would be prepared by REMA and conducted by qualified consultants authorised by LAFREC Project Steering Committee and REMA.

5.6.4. Step 4: Review and Approval of the Screening Activity

REMA will review the environmental and social screening results as well as the environmental checklists that were completed in the course of project preparation to ensure that all environmental and social impacts have been identified and successfully addressed.

That is, if the screening form has any "Yes" entries, or unjustified "No" entries, the application would need to adequately explain and demonstrate that the issues raised have been addressed appropriately. The project designs should include adequate monitoring and institutional measures to be taken during implementation and operation.

If REMA finds that the submitted design is not consistent with the requirements of the environmental screening form and the environmental checklist, then the project implementer would be requested to re-design (e.g. make additional modifications and/or choose other sites). Any proposed projects that do not comply with the requirements of Rwanda and the World Bank Safeguards policies will not be cleared for implementation.

If the application is seen to satisfactorily address all environmental and social issues, then the project will be recommended for the District Council approval.

(*See Environmental Guidelines for Contractors in Annex-3*).

5.6.5. Step 5 - Public Consultation and Disclosure

In line with transparency principles, the environmental and social screening process will be conducted as a part of participatory planning exercises, allowing for the identification of the main issues and how the concerns of all parties should be taken into account in deciding whether or not to issue a permit for the sub-project.

As project proposals are finalised, the complete proposal shall include the environmental category of the project. For category B (IL2) projects requiring an EIA, the proposal shall include the EIA report and proof of its approval by REMA and World Bank and any interested Development Partner or Financing Agency. For category C (IL1) projects that did not require the preparation of a separate EIA, the completed environmental and social checklist will be attached to the project proposal.

The EIA reports of projects will be disclosed as provided for in the Ministerial order n° 003/2008 of 15/08/2008 relating to the requirements and procedure for environmental impact assessment

Beneficiaries under LAFREC sub projects or any affected interested party, have the right to appeal. If dissatisfied with the decision reached at any stage in the EIA process, the affected party has the right of appeal to the Minister responsible for Environment.

5.6.6. Step 6 - Environmental Monitoring and Follow-up

The purpose of environmental monitoring is to check the effectiveness and relevance of the implementation of the proposed mitigation measures. Monitoring will be done by District Environmental Officers. It shall be carried out in accordance with the procedures and at the intervals prescribed in the Project Implementation Plan including Maintenance Schedules where appropriate.

The District Environmental Officer working with communities will monitor the implementation of environmental mitigations measures based on contractors' plans for investments. Oversight monitoring by the PSC will be carried out at quarterly intervals and by REMA on an annual basis.

Monitoring will be carried in accordance with the Environmental Management Plan (EMP) prepared for each sub-project, which shall include the monitoring indicators for the project. Environmental Indicators may include but need not be limited to the following:

- Loss of Vegetation
- Land Degradation
- Legislative Compliance;

Social Indications may include but need not be limited to the following:

- Population Incomes
- Environmental and Social Awareness
- Effect of Programme/Sub-project implementation on local household economies.

5.7. Monitoring Plan

5.7.1. Objective of Monitoring Plan

The objective of monitoring is:

1) to alert project authorities by providing timely information about the success or otherwise of the environmental management process outlined in this ESMF in such a manner that changes can be made as required to ensure continuous improvement to LAFREC environmental management process (even beyond the project's life).
2) to make a final evaluation in order to determine whether the mitigation measures incorporated in the technical designs and the EMP have been successful in such a way that the pre-project environmental and social condition has been restored, improved upon or is worse than before and to determine what further mitigation measures may be required.

This section sets out requirements for the monitoring of the environmental and social impacts of the LAFREC projects. Monitoring of environmental and social indicators will be mainstreamed into the overall monitoring and evaluation system for both sub projects. In addition, monitoring of the implementation of this ESMF will be carried out by REMA and the key implementing institutions of LAFREC.

5.7.2. Monitoring of Environmental and Social indicators

A number of relevant indicators in the project M&E system will enable the tracking of environmental and social issues. The final design of the M&E system will take account of the following

5.7.2.1. Initial proposals

The key issues to be considered in the LAFREC projects include monitoring of water quality, water flow patterns, biodiversity indicators, forest cover, agricultural

production, income generation, health and population influx. The goals of monitoring are to measure the success rate of the project, determine whether interventions have resulted in dealing with negative impacts, whether further interventions are needed or monitoring is to be extended in some areas.

Monitoring indicators will be very much dependent on specific project contexts. Monitoring and surveillance of micro-projects will take place on a "spot check" basis at it would be impossible to monitor all the micro-projects to be financed under the LAFREC. The spot checks consist of controlling the establishment of mitigation measures. It is not recommended to collect large amounts of data, but rather to base monitoring on observations by project technicians and stakeholders to determine the trends in indicators.

5.7.2.2. Monitoring of participation process

The following are indicators for monitoring of the participation process involved in the project activities.

- Number and percentage of affected households consulted during the planning stage:
- Frequency and quality of public meetings;
- Degree of involvement of women or disadvantaged groups in discussions.

Monitoring of implementation of mitigation plans lists the recommended indicators for monitoring the implementation of mitigation plans.

5.7.2.3. Evaluation of Results

The evaluation of results of environmental and social mitigation can be carried out by comparing baseline data collected in the planning phases with targets and post-project situations.

5.7.2.5. Monitoring Roles and Responsibilities

Rwanda Environment Management Authority (REMA): REMA will play the leading oversight role of monitoring the activities of this project. REMA will carry out this role by ensuring that the environmental management plans (EMPs) contained in the cleared design package is being implemented as specified therein. REMA will monitor the reports on a regular basis. They will rely on a bottom up feedback system to them from the ground by going through the monitoring reports and making regular site visits to inspect and verify for themselves the nature and extent of the impacts and the success or lack of the mitigation measures.

Through the project team REMA will prepare brief consolidated periodic monitoring reports for submission to the World Bank.

Project Steering Committee PSC: The Monitoring and Evaluation Officer will be primarily responsible for ensuring compliance to the monitoring framework. The PSC will also provide overall coordination in monitoring.

LAFREC implementing partner institutions: All the LAFREC implementing agencies identified under this project will monitor the specific components of the LAFREC project that they are targeted to execute. They will be required to prepare periodic monitoring reports for submission to the LAFREC PSC and specifically to the M&E Officer.

Local Communities: Local communities will be useful agents in collection of data that will be vital in monitoring and as such they will play a role in the monitoring framework. Local communities in the project intervention areas will receive training and capacity building skills in data collection to be done by the implementing agencies so as to equip them with the ability to collect data.

6. PROJECT COORDINATION AND IMPLEMENTATION ARRANGEMENTS

Overall Project Administration

1. The project will be implemented by the Ministry of Natural Resources (MINIRENA), through its Rwanda Environment Management Authority (REMA). In accordance with current national arrangements for project management, REMA maintains a Single Project Implementation Unit (SPIU) for the administration of donor projects to ensure that activities undertaken by multiple projects are streamlined and therefore managed in a way that leads to enhanced complementarities, avoids duplication of activities, and allows leverage of resources for improved efficiencies and effectiveness. The REMA SPIU already administers the Bank-financed Lake Victoria Environment Management Program (LVEMP). More broadly, the SPIU in REMA runs three programs within REMA: Climate Change; Ecosystem Rehabilitation and Pollution Control; and Mainstreaming Environment & Climate Change in Development Programmes. The staff is composed of:

    a. Core staff including the SPIU coordinator, DAF, Chief accountant, Procurement specialist and HR serving all the programs.

    b. Technical Staff depending on the nature and scope of the project.

2. LAFREC will be administered through the SPIU, with an overall Project Coordinator hired to oversee the project as a whole and ensure that administrative functions including planning, coordination, procurement, contract management, financial management, M&E and reporting are carried out in a timely and effective manner. An senior additional accountant will be hired under the project, and a senior procurement officer, planning and M&E specialist, and community development specialist will be shared between the LAFREC and LVEMP projects. Services provided by the existing SPIU staff to the project will include oversight, GIS and communications.

3. Through Memoranda of Understanding (MoUs), the implementation of some of the technical activities of the project will be the responsibility of partner agencies and institutions working in collaboration with REMA:

a. The Rwanda Development Board (RDB) will be responsible for management of the Gishwati-Mukura National Park, once formally gazetted.

b. Flood-forecasting and preparedness activities will be implemented through cooperation of a number of agencies according to their mandate. Improvements in rainfall forecasting will be implemented by the Rwanda Meteorological Agency (Meteo Rwanda), within the Ministry of Infrastructure. Hydrological models for flood forecasting will be developed between Meteo Rwanda and the Integrated Water Resources Management Department of RNRA. Local disaster preparedness planning will be carried out by Ministry of Disaster Management and Refugee Affairs (MIDIMAR).

c. Research activities will be carried out through partnerships with key research institutions, which are expected to include the University of Rwanda, and the Tree Seed Center of RAB.

d. Depending on the scope of activities, to be determined under initial landscape planning, the Departments of Forestry & Nature Conservation and Geology & Mines of RNRA may also directly implement activities under MoUs related to enrichment of plantation forests with native species and environmental management of mining activities. Otherwise, these will be implemented through district-level joint project teams, involving RNRA staff. In the case of the Forestry Department, the coordinator for the National Forest Landscape Restoration Program is expected to help support technical coordination.

4. The Project Implementation Manual will provide guidance on the formats for planning, reporting, monitoring and evaluation, and fiduciary management procedures. As far as possible, it will use existing government procedures as far as possible, and also harmonize with procedures and formats already used under the SPIU, particularly for LVEMP.

Local Level Implementation Arrangements

5. Project activities on the ground in the Gishwati landscape will be implemented through the District level under MoUs, in accordance with

national decentralization policies. A District Project Coordination Team (DPCT), including district agriculture, environment, forestry, mines, lands, and cooperatives (i.e. under the Rwanda Cooperatives Authority), will be established in each participating District to coordinate participatory planning for land management and livelihoods activities. These processes will be supported and guided by the project team and two project field environmental officers , based in the project area.

6. Capacity-building and joint micro-watershed / silvo-pastoral and livelihoods planning activities with communities and cooperatives will be overseen by DPCTs and project field staff, but due to the significant time required for these interactions, they will be supported by local service providers / NGOs. In the immediate vicinity of the Gishwati-Mukura National Park, conservation NGOs will be engaged to support alternative livelihoods planning and conservation education, and will also be expected to help build collaboration with external expert partners.

7. The output of participatory planning processes will be contracts signed between the project and communities / cooperatives committing support for specified livelihood and landscape restoration activities in return for the beneficiaries active involvement in implementing and maintaining landscape restoration investments. This support will be provided through DPCTs, bolstered where necessary with additional specific technical government experts, and consultants. Implementation on the ground will also be supported by peer learning structures involving demonstration plots, local knowledge exchanges, and a network of para-extensionists identified according to enthusiasm and aptitude, who will be supported with per diems to assist in training and technical support to their neighbors.

Oversight and coordination

8. **Project Steering Committee (PSC):** The PSC will be chaired by the PS/MINIRENA or DG of REMA and comprise the DGs for Planning from MINAGRI, RDB, RNRA and MIDIMAR, Mayors of each of the project districts, and representatives of the local and Intl NGOs – ARCOS, ACNR, WCS, IUCN. Additional representatives from the private sector and from the civil society may also be included.

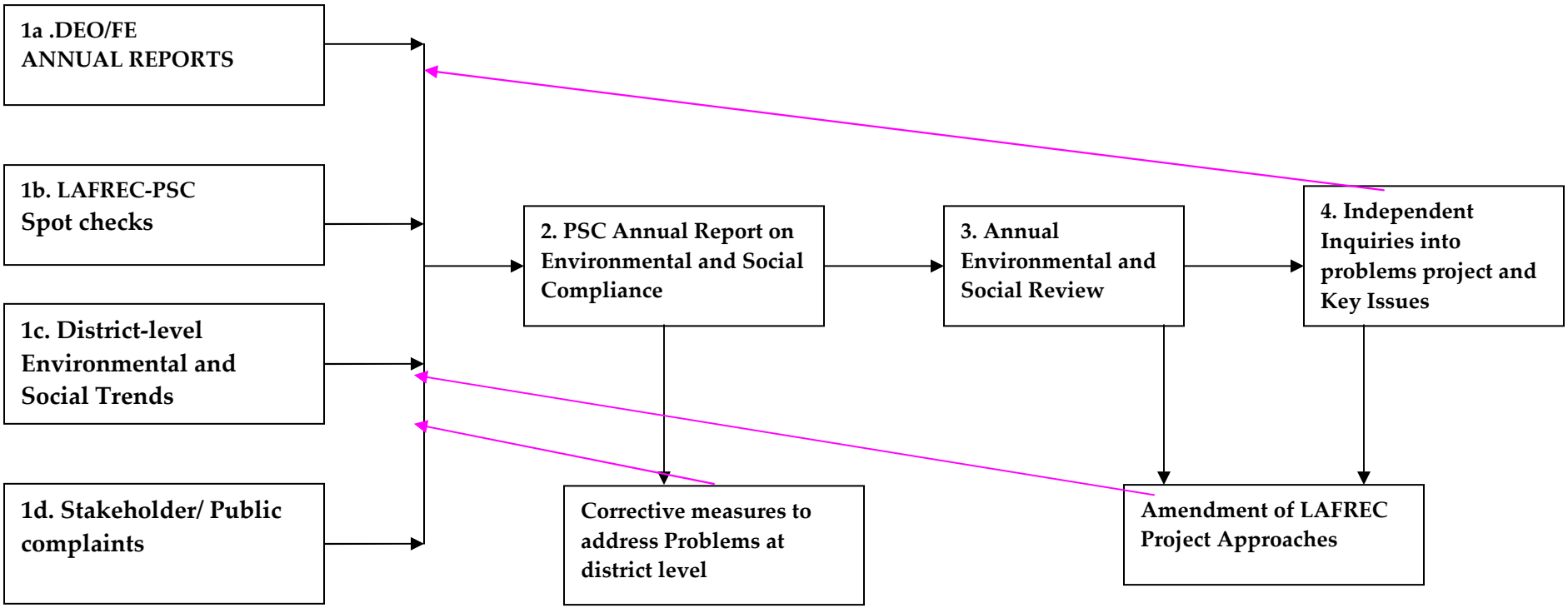
9. The Project Coordinator will serve as the Secretary to the PSC. The PSC will

be convened by the Chair on a semi-annual basis. Any Permanent Secretary may be invited to attend the PSC meetings as and when required to provide orientation to the meeting. The PSC will be mainly responsible for the following aspects, on a national basis: (i) policy guidance on all issues relating to the project; (ii) approval of project investments; (iii) approval and monitoring of project annual work plans and budgets; and (iv) resolving implementation bottlenecks and providing positive impetus to facilitate achievement of the project's development objectives (results/outcomes).

10. **National Technical Advisory Committee (NTAC):** The NTAC will be comprised of not more than 15 members, all technically competent in the key sectors relevant to the project, and will provide technical advice and guidance on the implementation approach for the project. This will include representatives from the key government projects, districts, research institutions, the private sector, and NGOs operating locally. The NTAC will aim to build working level cooperation, at a relatively informal technical level, through joint activities including technical planning and review sessions, and stakeholder workshops. The NTAC will meet as needed basis, but no more than quarterly.

11. As described above in annex 2, a **Gishwati Integrated Landscape Planning Working Group** will be established with participation from MINAGRI, NAEB, RNRA (forests, mines, and lands departments), REMA, RDB, MIDIMAR, the four districts and the private sector. Initially, this will be convened on a temporary basis, specifically for the purpose of integrating existing land use and development plans from various sectors, and of agreeing on coordination structures going forward. But if considered valuable, it would be developed into a more permanent landscape coordination structure, perhaps linked formally to the management of a future Gishwati-Mukura Biosphere Reserve.

Figure 6: Compliance Monitoring and Reporting Process



7. CAPACITY BUILDING, TRAINING AND TECHNICAL ASSISTANCE FOR LAFREC

7.1. Introduction

Effective implementation of this Environment and Social Management Framework will require technical capacity in the human resource base of implementing institutions as well as logistical facilitation. Implementers need to understand inherent social and environmental issues and values and be able to clearly identify indicators of these.

Even with existence of policies and laws such as the Organic Law on Environment Protection (2005), evidence on the ground still indicates that there is significant shortcoming in the abilities of local and district level stakeholders to correctly monitor, mitigate and manage environmental performance of development projects.

MINIRENA will have an overall delegated key responsibility of ensuring that the project complies with Rwandese environmental and social laws, and that the project adheres to this ESMF. MINIRENA will also be responsible for validating resettlement claims and ensuring that fairness in compensation is achieved where this arises, and will be responsible for providing evidence of this.

Sufficient understanding of the mechanisms for implementing the ESMF will need to be provided to the various stakeholders implementing LAFREC sub-projects.
This will be important to support the teams appreciate their role in providing supervision, monitoring and evaluation including environmental reporting on the projects activities.

7.2. Human Resource Capacity Requirements

Human capacity requirements for stakeholders of the ESMF were of two types:

- Low technical capacity,
- Inadequate staffing.

While adequacy in staffing requirements was varied between the various stakeholders, there was very limited presence of directly trained and dedicated staff for environmental management purposes within these institutions. Staffs from other departments are usually assigned duties related to environmental management. As a result, sufficient knowledge on environmental management principles, project screening, impact mitigation, monitoring and follow-up action was limited within most institutions.

In many institutions, staffs have been retained for core activities leaving little if any human resources to directly oversee environmental management activities. As a result, this portfolio which in many cases is given little attention is handled by staff members not adequately conversant with it.

In some cases, environment personnel are present but level of training and technical capacity on environmental principles and tools of management is not sufficient.
Training and awareness creation will be undertaken at different levels of implementation.
These levels will entail the central Government, local authorities, private sector, NGOs, and grassroots stakeholders. The exercise will be customized according to each level's needs to ensure adequacy in implementation of the ESMF.

7.2.1. Technical Capacity Enhancement

Awareness creation, training and sensitization will be required for personnel of the following institutions.

- ✓ Local governments authorities
- ✓ Ministry of Natural Resources,
- ✓ Ministry of Agriculture and Animal Resources,
- ✓ The LAFREC Project Steering Committee;
- ✓ District Environment Officers,
- ✓ LAFREC Staff
- ✓ Cooperatives and Associations
- ✓ NGOs
- ✓ CBOs and Cooperatives members

Training will concern:

- ✓ Integrated Water Resource Management and institutional partnership for water governance;
- ✓ Integrated Pest Management and Organic Agricultural Practices,
- ✓ Sustainable Forestry and Catchment Management,
- ✓ Community Engagement and Awareness
- ✓ Environment Conservation;
- ✓ Stakeholder engagement, consultation and partnerships;
- ✓ EIA law, relevant environmental policies;
- ✓ Waste minimization and management including wastewater from industrial sources, especially mining
- ✓ Soil and Water management strategies,
- ✓ Development of River Basin and micro-catchment strategies,
- ✓ ESMF, etc…

Actions to be taken under the ESMF and the training for them will be mainstreamed into LAFREC activities. Screening procedures will be an integral part of the participatory planning processes for each type of activity. Training on awareness of environmental issues and community engagement will be part of the preparation for participatory planning activities, and their implementation will be overseen by the project Field Environmentalists and District Environment Officers. Training on specific approaches to mitigate potential environmental or social impacts, such as IPM in relation to activities promoting agricultural intensification, will be conducted as part of the capacity for those activities.

Table 5: Training influencing success of ESMF

Training Aspect	Target group
Integrated Pest Management and Organic Agricultural Practices,	MINAGRI, RAB, Districts Agriculture Officers, RSSP, Extension staff, OCIR-CAFE,
Sustainable Forestry and Catchment Management	MINAGRI, RAB, RDB, Local government, Extension staff
Community Awareness	PSC, Local authorities, Extension staff
Stakeholder engagement, consultation and partnerships;	PSC, MINALOC, Extension staff
EIA law, relevant environmental policies;	PSC, Government agency representatives including district-level officials, NGOs, CBOs, Extension staff, community

Training Aspect	Target group
	members
Waste minimization and management including wastewater from industrial sources, especially mining	Local Government, Private Sector (mining, agroindustries, etc
Soil and Water management strategies,	MINIRENA, , MINAGRI, RAB, RNRA /Land & Mapping, IWRM
Development of River Basin and micro-catchment strategies,	MINIRENA/RNRA, MINAGRI, RAB

8. ESMF IMPLEMENTATION BUDGET

The total investment for LAFREC - Rwanda is estimated at **US$ 9,532,000** over a period of 5 years.

Actions to be taken under the ESMF will be mainstreamed into LAFREC activities. Screening procedures will be an integral part of the participatory planning processes for each type of activity. Training on awareness of environmental issues and community engagement will be part of the preparation for participatory planning activities, and their implementation will be overseen by the project Field Environmentalists and District Environment Officers. Training on specific approaches to mitigate potential environmental or social impacts, such as IPM in relation to activities promoting agricultural intensification, will be conducted as part of the capacity for those activities. In the (unlikely) event that screening reveal needs to conduct specific additional EIA studies, the costs of conducting them will have to be found from the contingency within the budget for the concerned subcomponent. Otherwise ESMF activities and costs are fully integrated into the existing activities and budget lines, and therefore there is no separate budget prepared.

9. CONCLUSIONS AND RECOMMENDATIONS

This Environmental and Social Management Framework (ESMF) has been prepared in order to guide project planners, implementers and other stakeholders to identify and mitigate environmental and social impacts in Rwanda under the LAFREC. This framework will apply to any project activity within the LAFREC.

It is also to be appreciated that the project sites proposed for the LAFREC are dynamic and prone to environmental and social impacts that may be generated from activities of other future development projects. These impacts may affect the project locations for the LAFREC.

In accordance with the National Organic law on Environment and the EIA guidelines in Rwanda, new project activities outside the LAFREC will have their own environmental and social management frameworks and plans.

Successful implementation of this ESMF will depend to a large extent on the involvement and participation of local communities.
Specifically it is recommended that:

- Environmental and Social awareness and education for the key stakeholders and affected communities must be an integral part of the ESMF implementation.

- District and local community structures should be adequately trained to implement the screening process, and where required to develop and to implement appropriate Environmental and Social Management and Monitoring Plans.

This ESMF should be regularly updated to respond to changing local conditions. It should also go through the national approval processes, reviewed and approved. It should also incorporate lessons learned from implementing various Components of the project activities.

The districts should be assisted to develop appropriate information management systems to support the environmental and social management process.

The Field Environmentalist and the districts environmental officers should be empowered to adequately administer the ESMF and should be given the necessary support and resources to ensure effective implementation.

This ESMF will provide Rwanda-LAFREC implementers with the screening, planning and EIA processes that will enable them to identify, assess and mitigate potential negative environmental and social impacts and to ensure proper mitigation measures are taken.

REFERENCES

1) East African Community (EAC)/ Lake Victoria Basin Commission (LVBC). December 2006. Trans-boundary Diagnostic Analysis of the Lake Victoria Basin. Final Report.
2) East African Community (EAC)/ Lake Victoria Basin Commission (LVBC). December 2006. Strategic Action Programme (SAP) for the Lake Victoria Basin. Final Report.
3) Government of Rwanda, REMA, 2006, General guidelines and Procedure for Environmental Impact Assessment.
4) Government of Rwanda, 2002, vision 2020, MINECOFIN.
5) Government of Rwanda, 2004, National Land Policy, MINITERE.
6) Journal Officiel de la République du Rwanda, mai 2005,
7) MINECOFIN, June 2007. The Economic Development and Poverty Reduction Strategy (EDPRS). Final Draft. Kigali.
8) NBI, 2001: Analyse environnementale transfrontières
9) NBI, 2005. Nile Transboundary Environmental Action Project (NTEAP): National Nile Basin Water Quality Monitoring Baseline report. Kigali- Rwanda.
10) World Bank, (1998). Pollution Prevention and Abatement Handbook: Towards Cleaner Production. Washington, D.C
11) World Bank, (1999). Manual of Environmental Assessment: Policies, Procedures and Questions Sectoral
12) World Bank, (2005), Environmental and Social Framework for World Bank Projects with Multiple Small-scale subprojects. Africa Region.
13) http://www.worldbank.org

Lake Victoria Environment Management Project Documents and technical studies

1) Lake Victoria Environmental Management Project Phase II Country Document, Draft Report, 2008
2) Transboundary Diagnostic Analysis (TDA)
3) Strategic Action Plan (SAP)
4) Applied research programme
5) National framework: Institutional component,
6) Raising Public Awareness through education and communication,
7) Socio-economic development: Private sector development,
8) Socio-economic development: Natural resources interventions/investment,
9) Assessment of potential of land suitability mapping with environmental overlays and potential usefulness of spatial planning for managing the Lake Victoria Basin,

ANNEX-1: Summary of consultations

Consultations on the project were conducted via a series of interviews with officials and focal group discussions with local residents over the period 16/3/2014 to 25/4/2014. These discussions involved an explanation of the project objectives and design, including anticipated environmental and social impacts and their mitigation.

Feedback received noted the environmental, and particularly forest degradation that had occurred in the area, and the increasing vulnerability that this and climate change are bringing to people's lives. However, participants did not focus on potential environmental impacts from the project as it was expected to be beneficial to the environment.

Of greater interest was the interface between the project and the local population. In particular, many participants noted the need for the project to put in place viable, long-term alternatives to harmful uses of natural resources, and to ensure that any land-taking processes involve the affected people in determining appropriate compensation and payment of compensation before resettlement (which has reportedly not always been the case in resettlement activities that had been previously conducted in the area. Participants were assured that these were included within the project design, and that the design of livelihoods support would be a ground-up process. An additional, frequent request to which the response was more equivocal was investments in local infrastructure. It was explained that whilst some specific, limited facilities related to livelihoods activities might be supported (e.g. community storage facilities for agricultural products), the project would not be providing general infrastructure support – e.g. roads, schools, health posts, etc. The project team would be prepared to work with local government and communities, however, to determine how investments in rural infrastructure expected to be made available through other programs (e.g. construction of feeder roads) could be synergized with project investments.

A full summary of comments is provided below, and following that, a list of the consultation meeting participants and dates.

Date	Consulted person	Number	Consultation type	Points raised	Suggestions
28/03/2014	Head, Conservation Division, RDB	1	Personal interview	• Law and policies on buffer zones will soon be out • Rwanda has initiated and is very supportive of initiatives geared towards forest conservation and restoration • LAFREC is a timely project	• LAFREC needs to take into account existing initiatives
18/03/2014 28/03/2014	Rutsiro District Vice Mayor (economic affairs)	1	Personal interview	• LAFREC components and activities are generally compatible with the needs of vulnerable social groups in the target locations • People need long lasting projects of that benefit local people	• People are willing to take up environmental friendly activities. However, there is a need to find for them alternative sources of income • Investment in infrastructure development like roads, electricity, schools and other supports of lasting interest make people cooperate and get a diversity of non-agricultural income generating activities
28/03/2014	Ngororero District Vice Mayor (economic affairs)	1	Discussion on phone Personal interview	• LAFREC components and activities are generally compatible with the needs of vulnerable social groups in the target locations • Part of Gishwati was given to people who returned from DRC. Some of them still live there • There is lack of enough income-generating activities that are not based on natural reserves	• There is a need to address the issue of people who are still living in high risk zones of the former Gishwati reserve due to limited capacity, the Government did not relocate all the people that were allowed to live in the former Gishwati reserve • Efforts need to be put in income generating activities that are not based on natural reserves • LAFREC should think of activities of lasting impact, not the ones that will stop at the end of the project. This can only be reached through regular consultation of concerned local people
28/03/2014	Nyabihu District Vice Mayor (economic affairs)	1	Personal interview	• LAFREC components and activities are generally compatible with the needs of vulnerable social groups in the target locations • People live on agriculture and other activities that stress forest reserves	• Though people have heard of buffer zones and corridor, there is a need to properly demarcate the buffer zones and corridor for the boundaries have not been clear enough for local people • People in the area basically live on agriculture and livestock. They spoil the reserves while looking for firewood, logging, mining, quarrying, etc. It would therefore be helpful if LAFREC encouraged energy and construction alternatives as well as other income generating activities that do not require people to spoil the reserves
28/03/2014	Rubavu District Vice Mayor (economic affairs)	1	Discussion on phone Personal	• LAFREC components and activities are generally compatible with the needs of vulnerable social groups in the target	• There is a serious need to associate local leaders and local people for activities to run smoothly • LAFREC can quickly realise its objectives by building from already

			interview	locations • There are however other initiatives that LAFREC can build from • People earn a living by spoiling the resources	initiated endeavours and working with existing structures • Efforts should be put in finding income-generating activities that might occupy people and help them earn a living without using and spoiling natural reserves
18/03/2014	MUKURA Sector Agronomist	1	Personal interview	• LAFREC is a timely project • Many projects have been focussing on things which are not long lasting. We have had well-spelt out projects that are only felt during their timeframe but which are quickly forgotten about after their timeframe • There has been little assistance in infrastructure development • There has been a remarkable weakness in the way people communicate development initiatives. • When relocating people, they are not consulted in determining compensation. Some people who got relocated have been complaining that they were imposed to get a certain amount of money whereas some of them wished to have other forms of compensation like another piece of land elsewhere	•Projects should think of activities with long lasting impact at least in their area of operation. •Any assistance in infrastructure, roads, schools, electricity in LAFREC area would be more memorable and would facilitate the creation of other non-agricultural activities. For example milk processing initiatives are hindered by poor transport (bicycles or walking for long distances as roads are scarce) and lack of refrigeration possibility. •When people have to be relocated, they need to be consulted and be allowed to discuss compensation. Some people are not comfortable with money and need other forms of compensation
17/04/2014	MUHANDA Sector Agronomist	1	Personal interview	• People exhibit practices that spoil the reserves mostly because they do not have other alternatives • Lack of roads and electricity make it difficult to have non-agricultural income generating activities	• It is not enough to tell people to stop spoiling natural resources. There has to be a thorough analysis of why people spoil the resources. When alternative source of income are not found, initiatives might be futile.
20/03/2014	Bigogwe Sector Agronomist	1	Personal interview	• People are aware of the importance of the reserves but continue to stress them • Some people owe their living to the forests. Some say they can prefer dying instead of moving far from the forest	• Communication and advocacy need to be given a priority while approaching the people. Some people are so tied to their ancestors' practices that they cannot easily change or stop their practices. They need to be educated and provided with harmless and environmentally friendly alternatives
18/04/2014	Village leader (Bikingi, Ngondo)	2	Personal interview	• Projects in the domain of forest conservation and restoration are highly welcomed in the area	• We need to be given alternatives. We need lasting occupations. If people have no alternative energy, if they cannot afford food or other basic needs, they will spoil reserves, not because they are not aware of

				• People easily forget about projects because they do not leave long-lasting impacts • Non-agricultural income generating activities are not possible without infrastructure	their importance but because they do not have any other way to survive. • Lack of infrastructure like roads and electricity also limit the possibility of non-agricultural, environmentally friendly activities. Investment in this area would be a great help
19/03/2014	Local people (teachers)	15	Focus Group Discussion	• People neighbouring Gishwati and Mukura are characterised by lack of enterprising culture, wastefulness and extravagant behaviours associated to customary practices, low saving habit, and absence of properly tailored Business Development Services. • People are aware of the importance of Gishwati and Mukura reserves, corridor and buffer zones • Practices spoiling Gishwati and Mukura reserves include logging, firewood and charcoal, mining, etc. • In cases of relocation, there have been cases of people who are moved before preparing them and having where to relocate them • Many people have not been getting sufficient compensation	• Project operators should effectively work with existing structures. • In case of resettlement, places where people are supposed to be resettled need to be prepared in advance and have all needed infrastructure • Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over • People should participate in determining the value of their properties. They should also participate in determining the needed compensation. Here they gave examples of houses built for resettled people but which are almost empty because they are not the types of houses beneficiaries needed • People should not be told to move before they are compensated. On this issue people say that the law is clear, as they were told, that nobody can be told to move before he/she is compensated. However, there are cases of people who were told to move before compensation • There has been a tendency to think that everything can be expressed in monetary language. People should be allowed to state what they want as compensation. For example one might need a similar plot of land elsewhere instead of money • When projects move people they only concentrate on those that are moved and forget that there could be some people who are not moved but who were depending on the ones moved • There should be agreement, collaboration and consultation among institutions dealing with environment and natural resources. Participants reported cases of officers in charge of mining who allowed mining activities without consulting REMA officials • District officers pertaining to environment need to be empowered and facilitated to meet people. People said they rarely see them. • Projects should think of long lasting impact.
25/04/2014	Local people still living in part of GISHWATI	4	Focus Group Discussion	• Land is fertile • Enough grazing land • Lack of non-agricultural activities	• People need to be associated in establishing the needs and how they can be met. They are supposed to be sensitised, educated, and facilitated to accommodate change.

				• People experience problems linked with land degradation and climate change: deadly floods, severe landslides, etc.	• They should be approached using various means and channels to ensure their cooperation. • Local leaders, opinion leaders, clubs, traders, churches, schools, health centres, farmers need to be mobilized
17/03/2014	People relocated from Gishwati (Grouped in Bikindi Village)	14	Focus Group Discussion	• Resettled people are not happy with the way they got relocated • People were not sufficiently involved in the resettlement process • Compensation was not fair • Not enough non-agricultural activities • Some people feel that their land can never be replaced • Some people are not comfortable with the monetary value imposed to them as compensation	• Participants believe that much as people think they are compensated when relocated, relevant projects should think of other accompanying advantages that can help people's full resettlement. • The following examples were given: ✓ Setting up sustainable businesses that can employ some of them ✓ Putting up infrastructure (like road, water and electricity) that can help develop other types of employment ✓ Paying school fees for a certain period of time ✓ Scholastic equipment and materials (e.g., note books bearing scripts and pictures about natural resources and Mukura-Gishwati conservation; T-shirts and pullovers bearing the same, etc.) ✓ Motivating children, e.g. rewarding best performers ✓ Paying health insurance for a certain period of time ✓ Supporting initiatives of vulnerable people (people with disability, orphans, widow (er)s, elders, etc.) ✓ Giving them agricultural seeds for a certain period ✓ Etc.
31/03/2014	Batwa Community members	2	Focus Group Discussion	• Aware of the importance of forest reserves • Reserves are disappearing • People are spoiling the forests • There are not enough non-agricultural income generating activities	• Vulnerable groups should be identified first and their interests should be considered. When people are taken holistically, vulnerable people suffer most • People should be heard first instead of being imposed to get little money and forced to move • People should be put in places where they can at least get the same basic needs
02/04/2014	Farmers (Ngororero)	32	Focus Group Discussion	• So far, the place that might serve as the corridor is a normal inhabited place scattered with hills and valleys. It has people's plantations of different crops and their houses • People are aware that there will be buffer zones but have no idea about the corridor	• Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over •People should participate in determining the value of their properties. They should also participate in determining the needed compensation. Here they gave examples of houses built for resettled people but which are almost empty because they are not the types of houses

				• People are aware of the importance of natural reserves.	beneficiaries needed •Projects should think of long lasting impact. They said that for some projects, there is not even a road leading to their actions. They said that projects utilise a lot of money but operate with Sectors with leaking roofs, very bad roads, shaky schools, etc. For them, this is why people easily forget about projects.
21/04/2014	Farmers (Rubavu)	25	Focus Group Discussion	• People neighbouring Gishwati forest live on agriculture. They cultivate tea, potatoes (mainly Irish), maize, beans, etc. Many of them are also cattle keepers. The activities that spoil the forest also include firewood, charcoal, mining, logging, sand and calcareous soil quarrying. The forest is also used for medicinal plants. • Vulnerable groups include people with disability, women, female headed households; unemployed and landless youth, orphaned children, child family heads, elderly people. They also include single parents, Farmers who depend on communal land that might be gazetted or restricted for certain uses, any other person (miner, logger, quarrier, etc.) who directly depends on the gazetted place/resource, people who are solely cattle keepers who might find themselves in cultivation – devoted areas as well as cultivators who might find themselves in livestock-prone areas	• Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over • Vulnerable groups should be properly identified and given special consideration •People should participate in determining the value of their properties. They should also participate in determining the needed compensation. •Projects should think of long lasting impact. They said that for some projects, there is not even a road leading to their actions. They said that projects utilise a lot of money but operate with Sectors with leaking roofs, very bad roads, shaky schools, etc. For them, this is why people easily forget about projects
18/03/2014	Farmers (Rutsiro)	10	Focus Group Discussion	• People around Mukura forest reserve mainly live on agriculture. Their livelihood is directly linked to cultivation and cattle rearing. However, in addition to these main activities, people on Mukura live on mining, logging, bee keeping. Their crops include tea, potatoes (mainly Irish), maize, beans, etc. The mining, now more than artisanal, is mainly practised by young	• Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over • Vulnerable groups should be properly identified and given special consideration •People should participate in determining the value of their properties. They should also participate in determining the needed compensation. •Projects should think of long lasting impact •They should think of investing in infrastructure

				men and focuses on coltan, cassiterite, wolfram (minerals people prevail in that region). • Activities that spoil the environment are related to firewood, charcoal, mining, logging, water sources, sand and calcareous soil quarrying, fires, etc. The fires were caused by people who wanted to expand the grazing land but the practice stopped.	
16/04/2014	Farmers (Nyabihu)	15	Focus Group Discussion	• The land near Gishwati is very fertile • The area is also rich in minerals • Some people cannot leave the place • People who got relocated from Gishwati are not happy with their new place. They have very small land which is not as fertile as the one they had in Gishwati • People near Gishwati also experience problems linked with land degradation and climate change: deadly floods, severe landslides, etc.	• Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over • There is a need to find more non-agricultural activities • Vulnerable groups should be properly identified and given special consideration • People should participate in determining the value of their properties. They should also participate in determining the needed compensation. • Projects should think of long lasting impact. • For some projects, there is not even a road leading to their actions. • Projects utilise a lot of money but operate with Sectors with leaking roofs, very bad roads, shaky schools, etc. For them, this is why people easily forget about projects

List of participants in consultations:

Participants in Rutsiro District

	Full Name	Sector	Responsibility
1.	Jean Pierre NDAYAMBAJE	MUKURA Sector	Sector Agronomist Of
2.	Lambert MUHIRE	MUKURA Sector	Teacher, Rwingogo Secondary School
3.	Pierre Claver NDAYAMBAJE	MUKURA Sector	Teacher, Rwingogo Secondary School
4.	Furaha MUKAMUDENGE	MUKURA Sector	Teacher, Rwingogo Secondary School
5.	Vianney USABYIMANA	MUKURA Sector	Teacher, Rwingogo Secondary School
6.	Immaculée DUSABIMANA	MUKURA Sector	Teacher, Rwingogo Secondary School
7.	Marie Jeanne YANDEREYE	MUKURA Sector	Teacher, Rwingogo Secondary School
8.	Espérance MUKANTWARI	MUKURA Sector	Teacher, Rwingogo Secondary School
9.	Laurent NIYOMUGABO	MUKURA Sector	Teacher, Rwingogo Secondary School
10.	Perpetue DUSHIMIRUMUCUNGUZI	MUKURA Sector	Teacher, Rwingogo Secondary School
11.	Clément NDAHAYO	MUKURA Sector	Deputy Director in ch of studies
12.	Emmanuel KANANI	MUKURA Sector	Teacher, Rwingogo Secondary School
13.	Claudette MUKUNDENTE	MUKURA Sector	Teacher, Rwingogo Secondary School
14.	Jacqueline MUSHIMIYIMANA	MUKURA Sector	Teacher, Rwingogo Secondary School
15.	Anne Marie	MUKURA Sector	Teacher, Rwingogo

	NYIRABAGIRIMPUHWE		Secondary School
16.	Séraphine URIMUBENSHI	MUKURA Sector	Teacher, Rwingogo Secondary School

Participants in Nyabihu District

	Full Name	Sector	Responsibility
1.	Innocent HABUMUREMYI	BIGOGWE	BIKINGI Village Leader
2.	Innocent HAKIZIMANA	BIGOGWE	BIGOGWE Sector Agronomist Officer
3.	Innocent KAJONJORI	BIGOGWE	Farmer, member of Batwa Community
4.	Jacqueline NYIRAKAMANZA	BIGOGWE	Farmer, one of the people relocated from Gishwati forest
5.	Josephine MUHAWENIMANA	BIGOGWE	Farmer, member of Batwa Community
6.	Gashabuka HITIMANA	BIGOGWE	Farmer, relocated from Gishwati forest

Participants living in part of the former Gishwati forest

	Full Name	District	Responsibility
1.	Pacifique NSENGIMANA	NYABIHU	Still living in part of Gishwati forest (legally)
2.	Paul SIBOMANA	NYABIHU	Still living in part of Gishwati forest (legally)
3.	Hassan NSABIMANA	NYABIHU	Still living in part of Gishwati forest (legally)
4.	Salima NIYONKURU	NYABIHU	Still living in part of Gishwati forest (legally)

Participants relocated from Gishwati forest (Grouped in Bikindi Village, Kijote Cell, Bigogwe Sector, and Nyabihu District

	Full Name	Cell	Responsibility
1.	Ephreim SETAKO	Kijote	Farmer
2.	Pascal KABASHA	Kijote	Farmer
3.	Thomas RUZINDANA	Kijote	Farmer
4.	Gapira MUNYANGORORE	Kijote	Farmer
5.	Soteri RUBANZAMBUGA	Kijote	Farmer
6.	Jonas BARINDA	Kijote	Farmer
7.	Karekezi NGARUJE	Kijote	Farmer
8.	Kabera NDINDAGIHE	Kijote	Farmer
9.	Marie NYIRANTIBIBUKA	Kijote	Farmer
10.	Jeannette NYIRAHABIMANA	Kijote	Farmer
11.	Consolée NYIRAMATABARO	Kijote	Farmer
12.	Justin Gashegu KARIWABO	Kijote	Farmer

Participants in Ngororero Disrict

	Full Name	Sector	Responsibility
1.	Emmanuel MAZIMPAKA		Vice-Mayor Economic Affairs
2.	Felix HAKIZURIMWIJURU	MUHANDA	Sector Agronomist
3.	Solange	MUHANDA	Executive Secretary, Bugarura Cell
4.	Elisaphane NTAKIRUTINKA	MUHANDA	Village leader, Ngondo Village
5.	Edouard MAGERA	MUHANDA	Farmer
6.	Rabani RUKERA	MUHANDA	Farmer
7.	Eustache MBAYIHA	MUHANDA	Farmer
8.	Alphonse NDADIJIMANA	MUHANDA	Farmer
9.	Innocent HITIYAREMYE	MUHANDA	Farmer
10.	Jean Damascene NKINAMUBANZI	MUHANDA	Farmer
11.	Francois HAKIZIMANA	MUHANDA	Farmer
12.	Gilbert HATEGEKIMANA	MUHANDA	Farmer
13.	Etienne MUNYENSANGA	MUHANDA	Farmer
14.	Theogene HAKUZIMANA	MUHANDA	Farmer

15.	Vincent CYIZA	MUHANDA	Farmer
16.	Aloys ZIGIRANYIRAZO	MUHANDA	Farmer
17.	Evariste KARONKANO	MUHANDA	Farmer
18.	Silver SEGATASHYA	MUHANDA	Farmer
19.	Christine AYINGENEYE	MUHANDA	Farmer
20.	Jean Damascene MANIRIHO	MUHANDA	Farmer
21.	Jeannette MUHAWENIMANA	MUHANDA	Farmer
22.	Pierre MBONABARYI	MUHANDA	Farmer
23.	Vestine TUYIZERE	MUHANDA	Farmer
24.	Francois NSENGUMUKIZA	MUHANDA	Farmer
25.	Amiel HAKIZIMANA	MUHANDA	Farmer
26.	Pierre NTABANGANYIMANA	MUHANDA	Farmer
27.	Augustin HABUMUREMYI	MUHANDA	Farmer
28.	Emmanuel BARANYERETSE	MUHANDA	Farmer
29.	André HAKIZIMANA	MUHANDA	Farmer
30.	Jean Claude BIZIMUNGU	MUHANDA	Farmer
31.	Claude NIYITEGEKA	MUHANDA	Farmer
32.	Léonidas NGENDAHAYO	MUHANDA	Farmer
33.	Callixte UWIRINGIYIMANA	MUHANDA	Farmer
34.	Paul BITEGA	MUHANDA	Farmer
35.	Jean UWIRINGIYIMANA	MUHANDA	Farmer

NOTE: 25 participants in RUBAVU Districts; 10 participants in RUTSIRO Districts and 15 participants in NYABIHU Districts preferred their comments to remain anonymous for individual reasons.

ANNEX-2: Project Screening Criteria Form (PSCF)

Once a Project Brief has been received and reviewed by the Authority, a proposed project is exempted from further compliance with EIA requirements if all of the following conditions are satisfied:

1. The project will not substantially use natural resources in a way that pre-empts use, or potential use of that resource for any other purpose.

2. Potential residual impacts on the environment are likely to be minor, of little significance and easily mitigated.

3. The type of project, its environmental impacts and mitigation measures are evident and well understood.

4. Reliable means exist for ensuring that impact management measures can and will be adequately planned and implemented.

5. The project will not displace significant number of people, families or communities.

6. The project is not located in, and will not affect, environmentally-sensitive areas such as:
   (a) National parks
   (b) Wetlands
   (c) Productive agricultural land
   (d) Important archaeological, historical and cultural sites
   (e) Areas protected under legislation
   (f) Areas containing rare or endangered flora or fauna
   (g) Areas containing unique or outstanding scenery
   (h) Mountains or developments on or near steep hillslopes
   (i) Forests
   (j) Lakes or their shores
   (k) Areas important for vulnerable groups such as fishing communities

(l) Areas near high population concentrations or industrial activities where further development could create significant cumulative environmental problems
(m) Groundwater recharge areas or drainage basins

7. The project will not result in and/or:

(a) Policy initiatives which may affect the environment
(b) Major changes in land tenure
(c) Changes in water use through irrigation, drainage promotion or dams, changes in fishing practices.

8. The project will not cause:
   (a) Adverse socioeconomic impact
   (b) Land degradation
   (c) Water pollution
   (d) Air pollution
   (e) Damage to wildlife and habitats
   (f) Adverse impact on climate and hydrological cycle
   (g) Creation of by-products, residual or waste materials which require handling and disposal in a manner that is not regulated by existing authorities.
9. The project will not cause significant public concern because of potential environmental changes. The following are guiding principles:
   (a) Is the impact positive, or harmful?
   (b) What is the scale of the impact in terms of area, numbers of people or wildlife affected?
   (c) What is the intensity of the impact?
   (d) What will be the duration of the impact?
   (e) Will there be cumulative effects from the impact?
   (f) Are the effects politically controversial?
   (g) Have the main economic, ecological and social costs been quantified?
   (h) Will the impact vary by social group or gender?
   (i) Is there any international impact due to the proposed projects?

10. The project will not necessitate further development activity, which is likely to have a significant impact on the environment.

ANNEX-3: Environmental and Social Checklist (ESCL) Form

Project Name:
Name of District/Sector: **Date:**

		Yes	No
A Type of Activity - Will the LAFREC subproject:			
1	Support animal husbandry or processing?		
2	Support irrigation schemes?		
3	Support rural water supply and sanitation schemes?		
4	Involve community forestry?		
5	Involve small-scale aquaculture?		
6	Involve leather processing?		
7	Involve food processing?		
8	Involve community healthcare facilities and the management of healthcare waste?		
9	Build or rehabilitate any structures or buildings?		
10	Support agricultural activities?		
11	Be located in or near an area where there is an important historical, archaeological or cultural heritage site?		
12	Be located within or adjacent to any areas that are or may be protected by government (e.g. national park, national reserve, world heritage site) or local tradition, or that might be a natural habitat?		
13	Depend on water supply from an existing dam, weir, or other water diversion structure?		
If the answer to any of questions 1-13 is "Yes", please use the indicated Resource Sheets or sections(s) of the ESMF for guidance on how to avoid or minimize typical impacts and risks			
B- Environment-will the LAFREC Subproject:			
14	Risk causing the contamination of drinking water?		
15	Cause poor water drainage and increase the risk of water-related diseases such as malaria or bilharzia?		
16	Harvest or exploit a significant amount of natural resources such as trees, fuel wood or water?		
17	Be located within or nearby environmentally sensitive areas (e.g. intact natural forests, mangroves, wetlands) or threatened species?		
18	Create a risk of increased soil degradation or erosion?		
19	Create a risk of increasing soil salinity?		
20	Affect the quantity or quality of surface waters (e.g. rivers, streams,		

		Yes	No
	wetlands), or groundwater (e.g. wells)?		
21	Result in the production of solid or liquid waste, or result in an increase in waste production, during construction or operation?		
If the answer to any of questions 15-21 is "Yes", please include an Environmental Management Plan (EMP) with the subproject application.			
C - Land acquisition and access to resources – Will the subproject:			
22	Require that land (public or private) be acquired (temporarily or permanently) for its development?		
23	Use land that is currently occupied or regularly used for productive purposes (e.g. gardening, farming, pasture, fishing locations, forests)		
24	Displace individuals, families or businesses?		
25	Result in the temporary or permanent loss of crops, fruit trees or household infrastructure such as granaries, outside toilets and kitchens?		
It the answer to any of the questions 22-25 is "Yes", please consult the ESMF and, if needed, prepare a Resettlement Action Plan (RAP)			
D – Indigenous people – Are there:			
26	Any indigenous groups living within the boundaries of, or nearby, the project?		
27	Members of these indigenous groups in the area who could benefit from the project?		
If the answer to questions 26 or 27 is "Yes", please consult the ESMF and, if needed, prepare an Indigenous Peoples Plan (IPP).			

CERTIFICATION

We certify that we have thoroughly examined all the potential adverse effects of this subproject. To the best of our knowledge, the subproject plan as described in the application and associated planning reports (e.g. EMP, RAP, IPP, PMP), if any, will be adequate to avoid or minimize all adverse environmental and social impacts.

Community representative (signature): …….

Field Environmentalist or the District Environmental Officer (DEO) (signature): ……

ANNEX-4: Environmental Guidelines for Contractors Undertaking Construction Work under LAFREC

General Environmental Management Conditions

1. In addition to these general conditions, the Contractor shall comply with any specific Environmental Management Plan (EMP) for the works he is responsible for. The Contractor shall inform himself about such an EMP, and prepare his work strategy and plan to fully take into account relevant provisions of that EMP. If the Contractor fails to implement the approved EMP after written instruction by the Supervising Energy expert to fulfill his obligation within the requested time, the Owner reserves the right to arrange through the SE for execution of the missing action by a third party on account of the Contractor.

2. Notwithstanding the Contractor's obligation under the above clause, the Contractor shall implement all measures necessary to avoid undesirable adverse environmental and social impacts wherever possible, restore work sites to acceptable standards, and abide by any environmental performance Requirements specified in an EMP. In general these measures shall include but not be limited to:

(a) Minimize the effect of dust on the surrounding environment resulting from earth mixing sites, vibrating equipment, temporary access roads, etc. to ensure safety, health and the protection of workers and communities living in the vicinity dust producing activities.

(b) Ensure that noise levels emanating from machinery, vehicles and noisy construction activities (e.g. excavation, blasting) are kept at a minimum for the safety, health and protection of workers within the vicinity of high noise levels and nearby communities.

(c) Ensure that existing water flow regimes in rivers, streams and other natural or irrigation channels is maintained and/or re-established where they are disrupted due to works being carried out.

(d) Prevent bitumen, oils, lubricants and waste water used or produced during the execution of works from entering into rivers, streams, irrigation

channels and other natural water bodies/reservoirs, and also ensure that stagnant water in uncovered borrow pits is treated in the best way to avoid creating possible breeding grounds for mosquitoes.

(e) Prevent and minimize the impacts of quarrying, earth borrowing, piling and building of temporary construction camps and access roads on the biophysical environment including protected areas and arable lands; local communities and their settlements. In as much as possible restore/rehabilitate all sites to acceptable standards.

(f) Upon discovery of ancient heritage, relics or anything that might or believed to be of archeological or historical importance during the execution of works, immediately report such findings to the Supervising Energy expert so that the appropriate authorities may be expeditiously contacted for fulfillment of the measures aimed at protecting such historical or archaeological resources.

(g) Discourage construction workers from engaging in the exploitation of natural resources such as hunting, fishing, and collection of forest products or any other activity that might have a negative impact on the social and economic welfare of the local communities.

(h) Implement soil erosion control measures in order to avoid surface run off and prevents siltation, etc.

(i) Ensure that garbage, sanitation and drinking water facilities are provided in construction workers camps.

(j) Ensure that, in as much as possible, local materials are used to avoid importation of foreign material and long distance transportation.

(k) Ensure public safety, and meet traffic safety requirements for the operation of work to avoid accidents.

3. The Contractor shall indicate the period within which he/she shall maintain status on site after completion of civil works to ensure that significant adverse impacts arising from such works have been appropriately addressed.

4. The Contractor shall adhere to the proposed activity implementation schedule and the monitoring plan/strategy to ensure effective feedback of monitoring information to project management so that Impact management can be implemented properly, and if necessary, adapt to changing and unforeseen conditions.

5. Besides the regular inspection of the sites by the Supervising Energy expert for adherence to the Contract conditions and specifications, the Owner may appoint an Inspector to oversee the compliance with these environmental conditions and any proposed mitigation measures. State environmental authorities may carry out similar inspection duties. In all cases, as directed by the Supervising Energy Expert, the Contractor shall comply with directives from such inspectors to implement measures required to ensure the adequacy rehabilitation measures carried out on the bio-physical environment and compensation for socio-economic disruption resulting from implementation of any works.

Work site/Campsite Waste Management

6. All vessels (drums, containers, bags, etc.) containing oil/fuel/surfacing materials and other hazardous chemicals shall be bonded in order to contain spillage. All waste containers, litter and any other waste generated during the construction shall be collected and disposed off at designated disposal sites in line with applicable government waste management regulations.

7. All drainage and effluent from storage areas, workshops and camp sites shall be captured and treated before being discharged into the drainage system in line with applicable government water pollution control regulations.

8. Used oil from maintenance shall be collected and disposed off appropriately at designated sites or be re-used or sold for re-use locally.

9. Entry of runoff to the site shall be restricted by constructing diversion channels or holding structures such as banks, drains, dams, etc. to reduce the potential of soil erosion and water pollution.

10. Construction waste shall not be left in stockpiles along the road, but removed and reused or disposed of on a daily basis.

11. If disposal sites for clean spoil are necessary, they shall be located in areas, approved by the Supervising Energy Expert, of low land use value and where they will not result in material being easily washed into drainage channels. Whenever possible, spoil materials should be placed in low-lying areas and should be compacted and planted with species indigenous to the locality.

Material Excavation and Deposit

12. The Contractor shall obtain appropriate licenses/permits from relevant authorities to operate quarries or borrow areas.

13. The location of quarries and borrow areas shall be subject to approval by relevant local and national authorities, including traditional authorities if the land on which the quarry or borrow areas fall in traditional land.

14. New extraction sites:

a) Shall not be located in the vicinity of settlement areas, cultural sites, wetlands or any other valued ecosystem component, or on high or steep ground or in areas of high scenic value, and shall not be located less than 1km from such areas.

b) Shall not be located adjacent to stream channels wherever possible to avoid siltation of river channels. Where they are located near water sources, borrow pits and perimeter drains shall surround quarry sites.

c) Shall not be located in archaeological areas. Excavations in the vicinity of such areas shall proceed with great care and shall be done in the presence of government authorities having a mandate for their protection.

d) Shall not be located in forest reserves. However, where there are no other alternatives, permission shall be obtained from the appropriate authorities and an environmental impact study shall be conducted.

e) Shall be easily rehabilitated. Areas with minimal vegetation cover such as flat and bare ground, or areas covered with grass only or covered with shrubs less than 1.5m in height, are preferred.

f) Shall have clearly demarcated and marked boundaries to minimize vegetation clearing.

15. Vegetation clearing shall be restricted to the area required for safe operation of construction work. Vegetation clearing shall not be done more than two months in advance of operations.

16. Stockpile areas shall be located in areas where trees can act as buffers to prevent dust pollution. Perimeter drains shall be built around stockpile areas. Sediment and other pollutant traps shall be located at drainage exits from workings.

17. The Contractor shall deposit any excess material in accordance with the principles of these general conditions, and any applicable EMP, in areas approved by local authorities and/or the Supervising Energy expert.

18. Areas for depositing hazardous materials such as contaminated liquid and solid materials shall be approved by the Supervising Energy expert and appropriate local and/or national authorities before the commencement of work. Use of existing, approved sites shall be preferred over the establishment of new sites.

Rehabilitation and Soil Erosion Prevention

19. To the extent practicable, the Contractor shall rehabilitate the site progressively so that the rate of rehabilitation is similar to the rate of construction.

20. Always remove and retain topsoil for subsequent rehabilitation. Soils shall not be stripped when they are wet as this can lead to soil compaction and loss of structure.
21. Topsoil shall not be stored in large heaps. Low mounds of no more than 1 to 2m high are recommended.

22. Revegetate stockpiles to protect the soil from erosion, discourage weeds and maintain an active population of beneficial soil microbes.

23. Locate stockpiles where they will not be disturbed by future construction activities.

24. To the extent practicable, reinstate natural drainage patterns where they have been altered or impaired.

25. Remove toxic materials and dispose of them in designated sites. Backfill excavated areas with soils or overburden that is free of foreign material that could pollute groundwater and soil.

26. Identify potentially toxic overburden and screen with suitable material to prevent mobilization of toxins.

27. Ensure reshaped land is formed so as to be inherently stable, adequately drained and suitable for the desired long-term land use, and allow natural regeneration of vegetation.

28. Minimize the long-term visual impact by creating landforms that are compatible with the adjacent landscape.

29. Minimize erosion by wind and water both during and after the process of reinstatement.
30. Compacted surfaces shall be deep ripped to relieve compaction unless subsurface conditions dictate otherwise.

31. Revegetate with plant species that will control erosion, provide vegetative diversity and, through succession, contribute to a resilient ecosystem. The choice of plant species for rehabilitation shall be done in consultation with local research institutions, forest department and the local people.

Water Resources Management

32. The Contractor shall at all costs avoid conflicting with water demands of local communities.
33. Abstraction of both surface and underground water shall only be done with the consultation of the local community and after obtaining a permit from the relevant Water Authority.
34. Abstraction of water from wetlands shall be avoided. Where necessary, authority has to be obtained from relevant authorities.

35. Temporary damming of streams and rivers shall be done in such a way avoids disrupting water supplies to communities down stream, and maintains the ecological balance of the river system.

36. No construction water containing spoils or site effluent, especially cement and oil, shall be allowed to flow into natural water drainage courses.

37. Wash water from washing out of equipment shall not be discharged into water courses or road drains.

38. Site spoils and temporary stockpiles shall be located away from the drainage system, and surface run off shall be directed away from stockpiles to prevent erosion.

Traffic Management

39. Location of access roads/detours shall be done in consultation with the local community especially in important or sensitive environments. Access roads shall not traverse wetland areas.

40. Upon the completion of civil works, all access roads shall be ripped and rehabilitated.
41. Access roads shall be sprinkled with water at least five times a day in settled areas, and three times in unsettled areas, to suppress dust emissions.

Disposal of Unusable Elements

45. Unusable materials and construction elements such as electro-mechanical equipment, cables accessories and demolished structures will be disposed of in a manner approved by the Supervising Energy Expert (SE). The Contractor has to agree with the SE which elements are to be surrendered to the Client's premises, which will be recycled or reused, and which will be disposed of at approved landfill sites.

46. As far as possible, abandoned pipelines shall remain in place. Where for any reason no alternative alignment for the new pipeline is possible, the old pipes shall be safely removed and stored at a safe place to be agreed upon with the Supervising Energy expert and the local authorities concerned.

47. AC-pipes as well as broken parts thereof have to be treated as hazardous material and disposed of as specified above.

48. Unsuitable and demolished elements shall be dismantled to a size fitting on ordinary trucks for transport.

Health and Safety

49. In advance of the construction work, the Contractor shall mount an awareness and hygiene campaign. Workers and local residents shall be sensitized on health risks particularly of AIDS.

50. Adequate road signs to warn pedestrians and motorists of construction activities, diversions, etc. shall be provided at appropriate points.

51. Construction vehicles shall not exceed maximum speed limit of 40km per hour.

Repair of Private Property

52. Should the Contractor, deliberately or accidentally, damage private property, he shall repair the property to the owner's satisfaction and at his own cost. For each repair, the Contractor shall obtain from the owner a certificate that the damage has been made good satisfactorily in order to indemnify the Client from subsequent claims.

53. In cases where compensation for inconveniences, damage of crops etc. are claimed by the owner, the Client has to be informed by the Contractor through the Supervising Energy expert. This compensation is in general settled under the responsibility of the Client before signing the Contract. In unforeseeable cases, the respective administrative entities of the Client will take care of compensation.

Contractor's Environment, Health and Safety Management Plan (EHS-MP)

54. Within 6 weeks of signing the Contract, the Contractor shall prepare an EHS-MP to ensure the adequate management of the health, safety, environmental and social aspects of the works, including implementation of the requirements of these general conditions and any specific requirements of an EMP for the works. The Contractor's EHS-MP will serve two main purposes:

- For the Contractor, for internal purposes, to ensure that all measures are in place for adequate EHS management, and as an operational manual for his staff.
- For the Client, supported where necessary by a Supervising Energy expert, to ensure that the Contractor is fully prepared for the adequate management of the EHS aspects of the project, and as a basis for monitoring of the Contractor's EHS performance.

55. The Contractor's EHS-MP shall provide at least:

- a description of procedures and methods for complying with these general environmental management conditions, and any specific conditions specified in an EMP;
- a description of specific mitigation measures that will be implemented in order to minimize adverse impacts;
- a description of all planned monitoring activities (e.g. sediment discharges from borrow areas) and the reporting thereof; and
- the internal organizational, management and reporting mechanisms put in place for such.

56. The Contractor's EHS-MP will be reviewed and approved by the Client before start of the works. This review should demonstrate if the Contractor's EHS-MP covers all of the identified impacts, and has defined appropriate measures to counteract any potential impacts.

EHS Reporting

57. The Contractor shall prepare bi-weekly progress reports to the Supervising Energy expert on compliance with these general conditions, the project EMP if any, and his own EHS-MP. An example format for a Contractor EHS report is given below. It is expected that the Contractor's reports will include information on:

- EHS management actions/measures taken, including approvals sought from local or national authorities;
- Problems encountered in relation to EHS aspects (incidents, including delays, cost consequences, etc. as a result thereof);
- Lack of compliance with contract requirements on the part of the Contractor;

- Changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects; and
- Observations, concerns raised and/or decisions taken with regard to EHS management during site meetings.

58. It is advisable that reporting of significant EHS incidents be done "as soon as practicable". Such incident reporting shall therefore be done individually. Also, it is advisable that the Contractor keep his own records on health, safety and welfare of persons, and damage to property. It is advisable to include such records, as well as copies of incident reports, as appendixes to the bi-weekly reports. Example formats for an incident notification and detailed report are given below.

Details of EHS performance will be reported to the Client through the Supervising Energy expert reports to the Client.

Training of Contractor's Personnel

59. The Contractor shall provide sufficient training to his own personnel to ensure that they are all aware of the relevant aspects of these general conditions, any project EMP, and his own EHS-MP, and are able to fulfill their expected roles and functions. Specific training should be provided to those employees that have particular responsibilities associated with the implementation of the EHS-MP.

General topics should be:

- EHS in general (working procedures);
- Emergency procedures; and
- social and cultural aspects (awareness rising on social issues).

Cost of Compliance

60. It is expected that compliance with these conditions is already part of standard good workmanship and state of art as generally required under this Contract. The item "Compliance with Environmental Management Conditions" in the Bill of Quantities covers these costs. No other payments will be made to the Contractor for compliance with any request to avoid and/or mitigate an avoidable EHS impact.

Example Format: EHS Report

Contract: **Period of reporting:**

EHS management actions/measures:
Summarize EHS management actions/measures taken during period of reporting, including planning and management activities (e.g. risk and impact assessments), EHS training, specific design and work measures taken, etc.

EHS incidents:
Report on any problems encountered in relation to EHS aspects, including its consequences (delays, costs) and corrective measures taken. Include relevant incident reports.

EHS compliance:
Report on compliance with Contract EHS conditions, including any cases of non-compliance.
Changes:
Report on any changes of assumptions, conditions, measures, designs and actual works in relation to EHS aspects.

Concerns and observations:
Report on any observations, concerns raised and/or decisions taken with regard to EHS management during site meetings and visits.

Signature (Name, Title Date):
Contractor Representative

Example Format: EHS Incident Notification

Provide within 24 hrs to the Supervising Engineer

Originators Reference No: **Date of Incident:** **Time:**

Location of incident:

Name of Person(s) involved:

Employing Company:

Type of Incident:
Description of Incident:
Where, when, what, how, who, operation in progress at the time (only factual)

Immediate Action:
Immediate remedial action and actions taken to prevent reoccurrence or escalation

Signature (Name, Title, Date):
Contractor Representative

Example Format: Detailed EHS Incident Report
The Incident Notification should be follow-up by a Detailed EHS Incident Report containing the following information where applicable

1. **Incident Summary**
2. **Specific Details**
   - Date
   - Time
   - Place
   - Weather/Visibility
   - Road conditions
3. **Persons Involved**
   - Name/s
   - Age/s
   - Experience
   - Date joined Company
   - Last Medical Check
   - Current Medical Treatment
   - Evidence of Drugs/Alcohol
   - Last Safety Meeting attended
   - Infringements/Incidents record
4. **Equipment Involved**
5. **Description of Incident**
6. **Findings of Investigation Team Interim/Final**

- Investigation Team Members
- Persons Interviewed
- Recommendations & Remedial Actions
- Investigation Methodology

7. Signature (Name, Title, Date):

8. Attachments

- Photographs
- Witness Statements and Incident Notification Report

ANNEX-5: Content of an EIA Report

An EIA report has the following objectives:

a) To enable the developer to plan, design and implement mitigation measures for significant adverse environmental impacts and to maximise social benefits from a proposed project.
b) For the decision-makers to objectively evaluate the proposed project.
c) To provide information on environmental impacts and mitigation measures for local communities and any other stakeholders to be able to contribute their opinions.

The EIA report should entail;

i) **Executive summary** of the EIA report which should be brief and focus on following matters:

- Name and location of the project;
- Name of the developer
- Name of the agency preparing EIA report;
- Main impacts identified;
- Mitigation recommendations;
- Environmental monitoring plan.

ii) **Objectives of the project**, including ideas, intentions and particular objectives.

iii) **Description of the proposal and its alternatives**. In this part, it is necessary to describe in detail the proposed project and its alternatives including those not subjected to pre-feasibility study or feasibility study. Attention should be concentrated to the comparison of different alternatives. Following are the required contents of the section "*Description of the proposal and its alternatives*":

- The stage of the project cycle where the project is being implemented (pre-feasibility study, feasibility study or design);

- Outlines of the plan for impact prediction and mitigation measures;
- Raw materials, supplies, energy, water and equipment to be used for implementing the project and its alternatives;
- Operational parameters such as capacity and product output;
- Tables, photographs, diagrams and maps;
- Comparison of characteristics of alternatives (extent, location, technology, products, energy and raw materials demands) in the present socio-economic, technical and environmental situation;
- A summary of project technical, economic and environmental characteristics.

iv) **Discussion on the proposal and its relation to relevant policies, laws and programmes** (sectoral and regional). In this section, the proposal must be shown to be in line with policies, laws, institutional framework and development strategy of Rwanda.

v) **Description of present (baseline) environmental state (analysis of initial state)**. In this section, the environment in the project area should be appropriately described. The following aspects should be presented:

- Environmental baseline conditions (natural and socio-economic);
- Sensitivity and values (cultural, aesthetic) of environment in the project area.

v) **Impact assessment**. In this section, the spatial and temporal scope of the impacts and characteristics of different impacts (whether positive or negative, direct or indirect, their intensity, extent and significance) should be presented for the project and also for all alternatives considered. The following aspects should be presented:

- Assessment of all impacts to the local population;
- Environmental data base, study methods and assumptions;
- Limitations and reliability of the data and study results;
- Compliance with the environmental standards and license issuing procedures;
- Significance of impacts, criteria and standards used for assessment of impact significance;
- Measures to avoid and mitigate impacts.

In this section, methods of data collection, methods and criteria used for assessing degree of danger and significance of impacts must be indicated. Cumulative impacts must be emphasised. A summary table of impacts for each alternative should be provided.

vi) **Evaluation and comparison of alternatives** and selection of one that is environmentally suitable. The main content of this section is the comparison of the main positive and negative impacts, impact mitigation and monitoring measures of alternatives. The environmentally suitable alternative is determined based on the following aspects:

- Impacts with largest effects, measures for avoiding, mitigating and managing them;
- Impacts for which the developer has committed to take prevention measures and unavoidable impacts;
- Allocation of cost and benefit between the levels, partners and population of the project area;
- Information on protection measures or resettlement, acquiring opinions of the public;
- Environmental improvement opportunities.

vii) **Impact management and environmental monitoring plan (EMP)**. In this section, tasks to ensure the implementation of mitigation measures and monitoring of impacts should be presented. This is a plan for monitoring and management of impacts during the implementation and operation of the project, where the responsibilities between the state and investor are differentiated. This plan includes the following contents:

- Description of mitigation measures;
- Implementation schedule including indicators, costs, etc;
- Assignment of responsibility for implementation;
- Monitoring of implementation;
- Report on evaluation of implementing such the plan.

viii) **Annex** where tables, drawings, maps, documents and information used as reference should be presented.

ANNEX-6: Sample Terms-of-Reference for EIA Studies

Following is a guide for REMA to develop ToRs for an EIA study.

1. INTRODUCTION

(Name of developer) has applied to Rwanda Environment Management Authority (REMA) to carry out an environment impact assessment (EIA) for the proposed *(name of project)* in accordance with requirements of EIA Regulations of the Republic of Rwanda. *(Name of developer)* intends that the proposed project will incorporate all practical and cost-effective measures for avoiding or minimizing negative environmental impacts, for capturing environmental benefits and for ensuring sound environmental management. Thus, the purpose of the EIA study is two fold:

- To provide *(developer's name)* with advice on how project design can avoid or mitigate negative impacts and to enhance anticipated environmental benefits,
- To prepare for review by REMA, an EIA report and Environment Environmental Management Plan (EMP) according to national EIA Guidelines and Regulations, 2006.

The following are specific issues to address in the EIA study;

2. PROJECT DESCRIPTION

The EIA Expert should provide a description of proposed project and any alternatives being considered in sufficient detail to benefit stakeholders and decision-makers. Policies, legislation, regulations directly relevant to the proposed project should be discussed in the EIA report.

3. ENVIRONMENTAL CONCERNS TO BE ADDRESSED IN THE EIA

The following are the key biophysical, resource use and socioeconomic issues to be addressed by the EIA study;

(List the issues here.)

While the impact study is to be focused on the above issues, the EIA Experts may, in the course of the impact study, identify further concerns which should be investigated. Any such other issues should be brought to the attention of REMA and *(developer's name)*.

4. ENVIRONMENTAL MANAGEMENT

The expert should pay particular attention to identifying and recommending measures or practices for avoiding, mitigating or managing negative impacts of the project and for enhancing potential environmental and socio-economic benefits. Any potential measures or practices identified by the EIA Expert should be brought to the attention of *(developer's name)* for possible inclusion in project design and planning.

In particular, the expert should prepare an Environmental Management Plan (EMP) for *construction*, *operation* and *decommissioning* of the project. The EIA Expert should estimate the costs of implementing this plan, including all capital, operating and training costs.

5. RELATIONSHIP OF EIA TO PROJECT PLANNING AND DESIGN

To maximize opportunity for good environmental planning and design of the project, EIA Experts should work closely with *(developer's name)* to offer feasible options to enhance the project's environmental performance.

6. PUBLIC CONSULTATION

(Developer's name) is obliged to ensure that all concerned public and private stakeholders in the project have adequate input during the EIA study. The EIA Expert should therefore undertake comprehensive consultation with the local community, relevant lead agencies such as (*provide examples of agencies REMA identified or that took part in formulating ToR)* in addition to any relevant stakeholders identified when conducting the impact study.

7. CONTENT OF THE EIA REPORT

At minimum, the EIA report produced by EIA Experts should contain information outlined in the Appendix 3 of Environmental Impact Assessment Guidelines (2006).

8. REPORTING REQUIREMENTS

The expert should submit a final EIA report including Environmental Management Plan (EMP) to *(developer's name).* Who after reviewing appending an EIA Report Addendum to it, if necessary, will submit *(number)* copies of the final draft report to REMA.

The EIA Expert and developer should be available for discussions about the EIA report with REMA and participate in any public hearings organised by the Authority.

9. EIA TEAM MEMBERS

EIA experts recognised and authorised by REMA to undertake this study are listed below;

(List EIA Experts here).

ANNEX 7: SUGGESTED FORMAT FOR A SIMPLE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

The ESMF emphasizes that an Environmental and Social Management Plan (ESMP) should fit the needs of a subproject and be easy to use. The basic elements of an ESMP are:

- A description of the subproject activity;
- A description of potential Environmental and social impacts;
- A description of planned mitigation measures;
- An indication of institutional/individual responsibility for implementing mitigation measures (including enforcement and coordination);
- A program for monitoring the Environmental and Social effects of the subproject both positive and negative (including supervision);
- A time frame or schedule; and
- A cost estimate and source of funds.

Subproject Activity	**Potential Environmental or Social Impacts**	**Proposed Mitigation Measures**	**Responsibility (including enforcement and coordination)**	**Monitoring Requirements (including supervision)**	**Time Frame or Schedule**	**Cost Estimate**
[type here]	[type here]	[type here]	[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]	[type here]	[type here]	[type here]
[type here]	[type here]	[type here]	[type here]	[type here]	[type here]	[type here]

The above matrix should be filled out for each subproject that will have the need for a separate EMP (the screening process using the screening checklist should determine this).

ANNEX 8: ANNUAL REPORT FORM FOR THE DISTRICT LEVEL

LAFREC sub-project: [select relevant project]
District:……
Reporting year:……
Date of report: ……

PROJECT SUMMARY

Please enter numbers of sub-projects in the following table:

	Approved this year	Application included a screening checklist	Community carried out mitigation	Met provided advice on mitigation	Field Appraisal	ESMP	RAP	IMP
CATEGORY B (IL2)								
Farm forestry or agro forestry, small-scale woodlots and tree nurseries								
Small-scale irrigation scheme								
Construction of small structures – e.g. office, store-room, guardpost								
Spring capping or rural water supply scheme								
Aquaculture								
Participatory forest management or reforestation								
Riverbank stabilization								
Terracing of farmland								
Agricultural interventions								
Support to income generating initiative								
Other								
Total								

Results of ESMPs, RAPs etc

Type of projects that have been subjected to ESMP, RAPs etc	Impacts identified included:	Are mitigation or monitoring measures being carried out adequately? If not, why not?
[type here]	[type here]	[type here]
[type here]	[type here]	[type here]

CATEGORY B

Please describe the key Environmental and social issues that have been identified from screening of community micro-projects

[type here]

Were there any unforeseen Environmental and / or social problems associated with any Sub-project?

Problem	Actions taken	Actions to be taken
[type here]	[type here]	[type here]

MANAGEMENT ISSUES

Have you or your predecessor been involved in the targeting or identification of subprojects?

□ Yes □ No If `Yes`, please describe: [type here]

Have communities been involved in the targeting or identification of sub-projects?

Have communities been involved in the targeting or identification of sub-projects? □ Yes □ No If `Yes`, please describe : [type here] Please explain any participatory issues that have impacted ability of communities to identify sub-projects : [type here]

Please describe the activity of the following actors on Environmental and social issues in your district this year

	Activity
Government line agencies working with LAFREC on Environmental and/ or social issues	[type here]
NGOs in partnership with LAFREC to examine Environmental and / or social issues	[type here]
District Environmental Committee (DEC)	[type here]

Summaries any gaps /non –compliance in Environmental and /or social activities:

Key gaps /areas of non – compliance	**Summary of key conclusions**	**Follow up activities Recommended**
[type here]	[type here]	[type here]

Strategic Impact

Is the project contributing to improved watershed sustainability in this district?

- Yes, is contributing to an overall improvement.
- No, its worsening watershed degradation / it's having a negative impact on the Environment.
- Too early to say.

Please explain:

[type here]

Is the project contributing to increased welfare in this district?

- Yes, it's contributing to an overall improvement.
- No, its reducing income generating opportunities / having a negative impact on socio development.
- Too early to say.

Please explain

[type here]

Has there been any analysis of cumulative Environmental impacts in your district? If `yes` please describe. If No tick here □

Activity ,review or study	**Summary of key conclusions**	**Was the work successful? e.g. were its recommendations carried out? If not, why?**
[type here]	[type here]	[type here]

Have there been any other Environmental or social analyses that have been carried out in the district?

Examples of activities reviews or studies	**Summary of key conclusions**	**Levels of success in achieving objectives. If not successful, why not?**
[type here]	[type here]	[type here]

Has there been any analysis of catchment management plans in your district? If `Yes, please describe. If No tick here □

Activity , review or study	**Summary of key conclusions (e.g. does the catchment management plan `fit` with the River Basins Management plan?)**	**Was the work successful e.g. were its recommendations carried out? If not, why?**
[type here]	[type here]	[type here]

POLICY AND INSTITUTIONAL

Please describe the activity of the projects in addressing policy constraints that affect Environmental and social sustainability.

Policy issue	**Reforms required**
[type here]	[type here]

Are there any policy issues that limit Environmental and /or social sustainability that require addressing at a national level?

Policy issue	**Reforms required**
[type here]	[type here]

TRAINING

Please list the training you have received under the LAFREC projects or otherwise	List two key areas of training you need in order to carry out your role in managing Environmental and social issues in the LAFREC Projects
[type here]	1) [type here] 2) [type here]
Please list the training others have received under the LAFREC projects or otherwise	List two key areas of training that you suggest other agencies require, in order to improve Environmental and social management :
[type here]	1) [type here] 2) [type here]

Completed by: [type here the names of all those who have contributed to completion of the form e.g. DEO and DDO]

Position: [type here position of all contributors to the report]

Date: [type here]

ANNEX 10: ANNUAL REPORT FORM TO BE COMPLETED BY FIELD ENVIRONMENTALIST

Project reference year: ……
Reporting year: ……
Date of report: ……..

PROJECT SUMMARY

Please enter numbers of micro-project in the following table (i.e. insert totals from district reports): Please enter numbers of sub-projects in the following table

	Approved this year	Application included a screening checklist	Community carried out mitigation	Met provided advice on mitigation	Field Appraisal	ESMP	RAP	IMP
CATEGORY B (IL2)								
Farm forestry or agro forestry, small-scale woodlots and tree nurseries								
Small-scale irrigation scheme								
Construction of small structures – e.g. office, store-room, guardpost								
Spring capping or rural water supply scheme								
Aquaculture								
Participatory forest management or reforestation								
Riverbank stabilization								
Terracing of farmland								
Agricultural interventions								
Support to income generating								

initiative								
Other								
Total								

Results of ESMPs, RAPs etc

Type of projects that have been subjected to ESMP, RAPs, etc	**Impacts identified included:**	**Are mitigation or monitoring measures being carried out adequately? If not, why not?**
[type here]	[type here]	[type here]

Please Summaries the key Environmental and social issues that have been identified from screening processes carried out at District level:

[type here]

Describe key unforeseen Environmental and /or social problems associated with any subprojects:

Problem	**Actions taken**	**Actions to be taken**
[type here]	[type here]	[type here]

MANAGEMENT ISSUES

Summaries, from the district reports, the ways in which District Environment and Development Officers have to be involved in the targeting or identification of any subprojects.

[type here]

Summaries the extent to which communities have been involved in the targeting or identification of sub-projects.

[type here]

Please summaries any key participatory issues that have impacted communities' ability to target or identify projects:

[type here]

Please summaries key points concerning the activities of the following actors on Environmental and social issues in the districts

	Activity
Government line agencies working with LAFREC on Environmental and/ or social issues	[type here]
NGOs in partnership with LAFREC to examine Environmental and / or social issues	[type here]
District Environmental Committee (DEC)	[type here]

Summaries any gaps /non –compliance in Environmental and /or social activities:

Key gaps /areas of non – compliance	Summary of key conclusions	Follow up activities Recommended
[type here]	[type here]	[type here]

STRATEGIC IMPACT

Is the project contributing to improved watershed sustainability in project area?

- Yes, it's contributing to an overall improvement.
- No, it's worsening watershed degradation / it's having a negative impact on the Environment.
- It's contributing to improvements in some micro-catchment areas, and deterioration in others
- Too early to say.

Please explain:

[type here]

Is the project contributing to increased social benefits (both financial and non-financial) in the project area?

- Yes, it's contributing to an overall improvement.
- No, it's reducing income generating opportunities / having a negative impact on socio development.
- It's contributing to improvements in social benefits in some areas, and deterioration in others
- Too early to say.

Please explain

[type here]

Summaries key activities to analyze cumulative Environmental impacts:

Examples of activities reviews or studies	Summary of key conclusions	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summaries any other Environmental or social analyses that have been carried out in the districts

Examples of activities reviews or studies	Summary of key conclusions	Levels of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summaries any assessments that have been undertaken with respect to the catchment management plans.

Examples of activities, reviews or studies	Summary of key conclusions	Level of success in achieving objectives. If not successful, why not?
[type here]	[type here]	[type here]

Summaries your overall conclusions on the strategic fit and effectiveness of the catchment management plans in relation to the River Basins Management Plan including any revision that should be made to the River Basins Management Plan.

POLICY AND INSTITUTIONAL

Please describe the activity of the projects in addressing policy constraints that affect Environmental and social sustainability.

Policy issue	**Reforms required**
[type here]	[type here]

Are there any policy issues that limit Environmental and /or social sustainability that require addressing at a national level (Please describe, citing any relevant experiences from the districts)?

Policy issue	**Reforms required**
[type here]	[type here]

TRAINING

Based on feedback from the districts, what are the 3 priority training requirements identified under the LAFREC projects

Training requirement	**Who for**
1) [type here] 2) [type here] 3) [type here]	1) [type here] 2) [type here] 3) [type here]

Completed by: [type here the names of all those who have contributed to completion of the form e.g. Natural Resource Management Specialist/Officer, Community, Development Officer, Monitoring and Evaluation Officer]

Position: [type here position of all contributors to the report]

Date: [type here]