E4355 V1 REV

REPUBLIC OF RWANDA

MINISTRY OF AGRICULTURE AND ANIMAL RESOURCES

RWANDA FEEDER ROADS DEVELOPMENT PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (ESMF)

NOVEMBER, 2013

EXECUTIVE SUMMARY

As the preparation of the Feeder Roads Development Project in Rwanda is under way, the World Bank OP 4.01 requires the government of Rwanda to prepare an Environment and Social Management Framework (ESMF), which establishes mechanisms to determine and assess future potential Environmental and social impacts of the planned investments/activities proposed under Rwanda Feeder Roads Development Project (RFRDP). Therefore, in compliance with the Rwanda Environmental Management regulations and the World Bank's Safeguards Policies, the Government of Rwanda represented by the Ministry of Agricultural and Animal Resources, has prepared this Environmental and Social Management Framework (ESMF).

In Rwanda, about 66 per cent (9,300 km) of the 14,000 km of the overall road network are unclassified roads, which are predominantly earth roads and considered as districts roads. According to a road condition survey carried out in 2010, about 23 per cent of the district roads are in good condition while 44 per cent and 32 per cent are in fair and poor condition, respectively. The district and unclassified roads that principally constitute the feeder roads network are in dismal state and are major constraint for the mobility of the rural population. Because of these conditions, the use of large scale services, including motorized vehicle such as trucks and buses remains constrained by the unavailability of maintained roads or poor condition of roads and most farmers carry their produce to market by head loading, bicycles, drawn carts or motorbikes.

As part of the national effort to improve the feeder roads network, the Government of Rwanda has expressed its interest to obtain the support of feeder roads development. In line with this four priority districts, namely: (Karongi and Nyamasheke (Western Province), Rwamagana (Eastern Province), and Gisagara (Southern Province) were selected. Hence, the Rwanda Feeder Roads Development Project (RFRDP) will consist of rehabilitation, upgrading and spot improvement of about 400kms of selected feeder roads, and improving connectivity to agricultural marketing centers in the four participating districts. In addition to that, the project will participate in maintenance of Selected Feeder Roads**.** This component will finance routine and periodic maintenance of about 400 km (about 100 km in each of the participating district) of feeder roads. Institutional Development for Rural Infrastructure Management and Strategy as well as the development for Rural Access and Transport Mobility Improvement, and Project

Management Support are other components of the project. The estimated cost of the proposed project is forty five million US dollars (45,000,000) over four year period.

Although most project impacts are expected to be positive, some of the proposed feeder roads subprojects could create negative environmental and social impacts during their impleme ntation. Potential negative impacts expected during the implementation of RFRDP include loss of biodiversity, increase in soil erosion during the construction phase of minor works, which could cause temporary increases in sediment loads into rivers ; loss of access (temporary or permanent) to natural resources; loss of land due to construction of infrastructure; and temporary noise and air pollution nuisance due to construction works, sediments laden runoff from exposed areas mainly due to vegetation clearing during construction; improper use of waste oils from construction equipment. Furthermore, rehabilitation of roads will need more lands that are private or public land for which compensation may be required. Some trees crops, and other structures that are close to roads to be rehabilitated are also likely to be affected and will need compensation.

Therefore, the ESMF for Feeder Roads Development Project provides a corporate environmental and social safeguard policy framework, institutional arrangements and capacity available to identify and mitigate potential safeguards issues and impacts of each sub-project. With the use of the ESMF, national and local environmental and social requirements for any affected community and entity will be met. This will also be consistent with the World Bank Operational policies OP4.01 and OP4.12 as well as other applicable safeguard provisions of the World Bank. The ESMF also represents a statement of policy, guiding principles and procedures of reference with focus on the road sector projects, agreeable to all key stakeholders

Furthermore, this ESMF will be complemented by three other safeguards instruments. Firstly, Environmental Assessments (EAs) including Environmental and Social Management Plans (ESMPs) which will be prepared for each sub-project/district. Secondly, a Resettlement Policy Framework (RPF) is prepared to provide standards and procedures of compensation for any land acquisition, loss of assets, or restriction of access to resources that may take place as a result of RFRDP investments and finally, Resettlement Action Plans will be prepared for each subproject/district.

INCAMAKE

Mu gihe hategurwa umushinga wo gusana no gufataneza imihanda yo mu cyaro mu Rwanda, politike yo kurengera ibidukikije ya Banki y'Isi na polititike yo kurengera ibidukikije mu Rwanda bisaba ko umushinga wose mbere y'uko utangira, hategurwa gahunda yo gucunga ingaruka umushinga ushobora kugira kubidukikije n'imibereho myiza y'abaturage. Iyi Gahunda igaragaza ingaruka mbi zishobora guterwa n'ibikorwa biteganyijwe mu mushinga ukanerekana uburyo izongaruka za kwirindwa cyangwa zikagabanywa. Ni muri urwo rwego Guverinoma y'u Rwanda ibinyujije muri Ministeri y'Ubuhinzi n'Ubworozi yateguye iyi gahunda yo Gucunga ingaruka z'umushinga wo gusana no gufataneza imihanda yo mu cyaro kubidukijije n'imibereho y'abaturage.

Mu Rwanda, 66% (9,300 km/14000km) by'Uburebure bwo bw'imihanda iri murwanda, n'imihanda itarashyirwa mu byiciro igizwe ahanini n'imihanda y'ibitaka ihuza Uturere n'Imirenge. Inyigo yakozwe muri 2010 ku miterere y'imihanda mu Rwanda, yagaragaje ko hafi ya 23% by'imihanda y'Uturere imeze neza, 44% imeze neza gahoro naho 32% imeze nabi cyane. Imihanda y'Uturere n'indi mihanda yose itarashyirwa mu byiciro, bigize igice kinini cy'imihanda yo mucyaro irebwa n'uyu mushinga. Iyi mihanda imeze nabi cyane bikaba bigira ingaruka ku migenderanire n'ubuhahirane bw'abaturage cyane cyane mu duce tw'icyaro. Kubera imiterere y'iyo mihanda , biragoranye kwifashisha ibikoresho bihambaye mu buhizi nk'imashini zihinga, amakamyo, n'ibindi binyabiziga byifashishwa mu kugeza umusaruro w'abaturage ku masoko. Abaturage bifashisha uburyo bucirirtse nko kwikorera umusaruro ku mutwe, kumagare cyangwa ku ngorofani ibi bikaba bigira ingaruka mbi ku giciro cy'umusaruro ndetse n'ubwiza bwawo.

Mu rwego rwo kugabanya izingaruka no guteza imbere ubuhahirane bw'abaturage, Leta y'Urwanda ifatanyije na Banki y'Isi bari gutegure umushinga wo gutunganya imihanda inyuranye yo mu cyaro. Uyu mushinga uteganya mu Turere 4 aritwo: Karongi na Nyamasheke (Intara y'uburengerazuba), Rwamagana (Intara y'uburasirazuba) na Gisagara (Intara y'amajyepfo. Mubikorwa uyu mushinga uzibandaho harimo gusana ibirometero bigera kuri 400 by'imihanda yangiritse, ni ukuvuga hafi ibirometero 100 muri buri Karere karebwa n'uyu mushinga, Kongera ubugari bw'imihanda isanzwe, gusana ibiraro n'amateme no guhuza imihanda na n'uduce dukorerwamo ubucuruzi. Uyu mushinga kandi uzibanda kubikorwa byo

gufata neza ibirometero bigera kuri 400 by' imihanda yatunganyijwe hakorwa ibikorwa bihoraho byo kuyisana no kuyisukura. Igice cya nyuma cy'uyu mushinga kizibanda mu kongerera ubushobozi inzego z'ibanze n'inzego zo kurweogo rw'igihugu zizashira mubikorwa uyu mushinga. Muri rusange uyu mushinga uzarangira utwaye amafaranga agera kuri miriyoni 45 z'amadorari y'amerika mugihe cy'imyaka ine uyu mushinga uteganyijwe kumara.

N'ubwo bigaragara ko uyu mushinga uzagira ingaruka nziza nyishi ku mibereho y'abaturage nta wakwirengagiza ko bimwe mu bikorwa biteganyijwe muri uyu mushinga bishobora kugira ingaruka mbi kubudukikije n'imibereho y'abaturage mugihe byaba bidakozwe neza. Ingaruka mbi zishobora kugaragara twavuga iyangirika cyangwa igabanuka ry'urusobe rw'ibinyabuzima, kwiyongera kw'isuri, ihungabana ry'igihe gito ry'imigenderanire mu gihe cy'imirimo, kubura ubutaka, kwimurwa, iyangirika ry' imyaka n'inyubako; urusaku , iyangirika ry'umwuka wo mukirere ri bishobora gutera indwara z'imyanya y'ubuhumekero, Iyangirika ry'ubwiza bw'amazi biturutse kubutaka butwarwa n'isuri n'ingaruka zituruka kumicungire mibi y'imyanda. Ku rundi ruhande kongera ubugari bw'imihanda bizakorerwa kubutaka bw'abaturage bityo bikazaba ngombwa ko haba igikorwa cyo kubimura no kwishyura ibikorwa byabo bizangirika.

Kubera izo mpamvu, minisiteri y'Ubuhinzi n'Ubworozi, yateguye gahunda yo kwirinda no kugabanya ingaruka mbi umushinga wo gusana no gufata neza imihando yo mucyaro ushobora kugira kubidukikije n'ubuzima rusange bw'abaturage. Iyi gahunda igaragaza imirongo ngenderwaho mu kugaragaza ingaruka zishobora guterwa n'umushinga n'uburyo zakwirindwa cyangwa zikagabanywa. Iyi gahunda igaragaza amategeko na politike bizifashishwa mu kwirinda cyangwa kugabanya izo ngaruka. Iyi gahunda inagaragaza uruhare rwa buri rwego rufite uruhare mu migendekere myiza y'umushinga n'ishyirwa mu bikorwa rya gahunda yo gucunga ingaruka kubidukikije n'n'imibereho myiza y'abaturage.

Ishyirwa mu bikorwa ry'iyi gahunda yo gucunga ingaruka ku bidukikije n'imibereho myiza y'abaturage rizisunga politike za Banki y'Iyi cyane cyane politike irebana n'inyigo kungaruka ku bidukikije na politike irebana n'ituzwa ry'abimuwe n'ibikorwa by'umushinga. Iyi gahunda kandi izifashisha amategeko, politike n'ibipimo ngenderwaho mu Rwanda mubirebana no kubungabunga ibidukikije, kwimura no gutuza abantu. Ibi bizakorwa binyuze mu mikoranire y'inzego zinyuranye zirebwa n'umushinga arizo Ikigo cy'Igihugu cyo Kurengera

ibidukikije(REMA), Minisiteri y'Umutungo Kamere(MINIRENA), Minisiteri y'Ibikorwa Remezo(MININFRA) Ministriri y'Ubuhinzi n'Ubworozi(MINAGRI), Ikigo Cy'Igihugu Gishinzwe iterambera ryo Gutwara abantu n'ibintu(RTDA), Ikigo cy'igihugu Gishinzwe Iterambere RDB(Agashami gashinzwe inyigo Kungaruka kubidukikije), Ubuyobozi b'umushinga, Inzego z'ibanze na Banki y'Isi.

Ku rundi ruhande, iyi gahunda yo gukunga ingaruka z'umushinga kubidukikije, uzunganirwa n'izindi nyigo eshatu arizo: Politike Ngenderwaho yo gutuza abimuwe n'umushinga(RPF), Inyigo kungaruka kubidukikije(EIAs) na Gahunda yo kwimura no gutuza abimuwe n'umushinga(RAP) bizategurwa kuri buri gice cy'umushinga, muri buri Karere.

Table of Contents

LIST OF TABLES

LIST OF FIGURES

LIST OF ANNEXES

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/Developer:** The entity, person, company/agency proposing to develop/implement/install a new project/sub-project or expand an existing road construction or rehabilitation project.
- **Direct impacts:** An effect on the environment brought about directly by the project.
- **Disclosure:** Information availability to all stakeholders at all stages of the development.
- **Environment:** The totality of the natural (physical and biological components) and societal (cultural, social, economic, political) components and processes that define our surroundings.
- **Environmental Assessment (EA):** Includes environmental reviews, environmental scans, initial environmental examinations, environmental audits, etc.
- **Environmental impact assessment (EIA):** A systematic, comprehensive, logical process of analysis of a project and its effects (positive and negative) on the environment based on prevailing baseline conditions and a description of the mitigation actions that will be carried out in order to avoid or minimize these negative effects.
- **Environmental Impact Statement:** Report submitted to the authority by the developer stating the likely impacts of the proposed project, as well as measures for mitigating or managing the environmental impacts during the project development and operation.
- **Environmental monitoring:** describes follow-up activities and decisions on a regular basis to ensure the development and operational activities of the project comply with the conditions agreed upon in the environmental management plan.
- **Impact:** A positive or negative effect that the project is likely to have on any aspect of the biophysical and/ or socio-economic environment.
- **Indirect impact:** A positive or negative effect that the project indirectly has on an aspect of the environment
- **Involuntary resettlement:** The forceful loss of land / resources that requires individuals, families and / or groups to move and resettle elsewhere.

- **Lead Agency:** The agency with primary responsibility. For instance, the lead agency for environmental matters in Rwanda is REMA.
- **Mitigation measures:** The actions identified or proposed 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 hydroelectric development projects, the terminology can be confusing.
- **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:** This refers to the initial stage in an environmental assessment that determines the major environmental parameters which are likely to be affected and the aspects of the project that may cause these effects.
- **Reviewing:** Is an assessment of the so far submitted project details by an environmental agency to decide as to whether there are gaps to be answered.
- **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 the project into one of three environmental categories (I, II, or III). At this stage, it may be decided that the project does not require a full EIA and therefore can proceed based on the Project Brief recommendations.
- **Stakeholder:** A person, group(s) of persons or institutions who have an interest in the project, and who will be directly or indirectly affected by the project activities.

ABBREVIATIONS AND ACRONYMS

AfDB	African Development Bank
ASSTEP	Public Works Contracts Management Agency
CBD	Convention on Biological Diversity
CDF	Common Development Fund
CMS	Convention on the Conservation of Migratory Species
COMESA	Common Markets for Eastern and Southern Africa
DEOs	District Environment Officers
DFID	UK's Department for International Development and Social Affairs
EA	Environmental Assessment or Analysis
EAC	East African Community
EDPRS	Economic Development and Poverty Reduction Strategy
EIA	Environmental Impact Assessment
EIR	Environmental Impact Review
ElS	Environment Impact Statement
EMP	Environmental Management Plan
ESMF	Environmental and Social Management Framework
FIs	Financial Institutions
GEF	Global Environmental Facility
GoR	Government of Rwanda
GTZ	German Technical Cooperation
HIMO	Labour Intensive Public Works Programme (French Acronym)
IDA	International Development Association
IFC	International Finance Corporation
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on climate change
IPM	Integrated Pest Management
MINAGRI:	Ministry of Agriculture and Animal Resources
MININFRA	Ministry of Infrastructures
MINIRENA:	Ministry of Natural Resources

MINALOC	Ministry of Local Government
MINICOFIN	Ministry of Finance and Economic Planning
NGOs	Non-Government Organisations
PRA	Participatory Rural Appraisal
RAP	Resettlement Action Plan
RDB	Rwanda Development Board
REMA	Rwanda Environment Management Authority
RURA	Rwanda Utilities Regulatory Authority
RPF	Resettlement Policy Framework
SOPs	Standard Operating Procedures
SPIU LWH-RSSP:	Single Project Implementation Unit for Hillside and Marshland Development
TIG	Travaux des Interets Generaux
ToR	Terms of Reference
RBS	Rwanda Bureau of Standards
WB	World Bank

CHAPTER ONE: INTRODUCTION

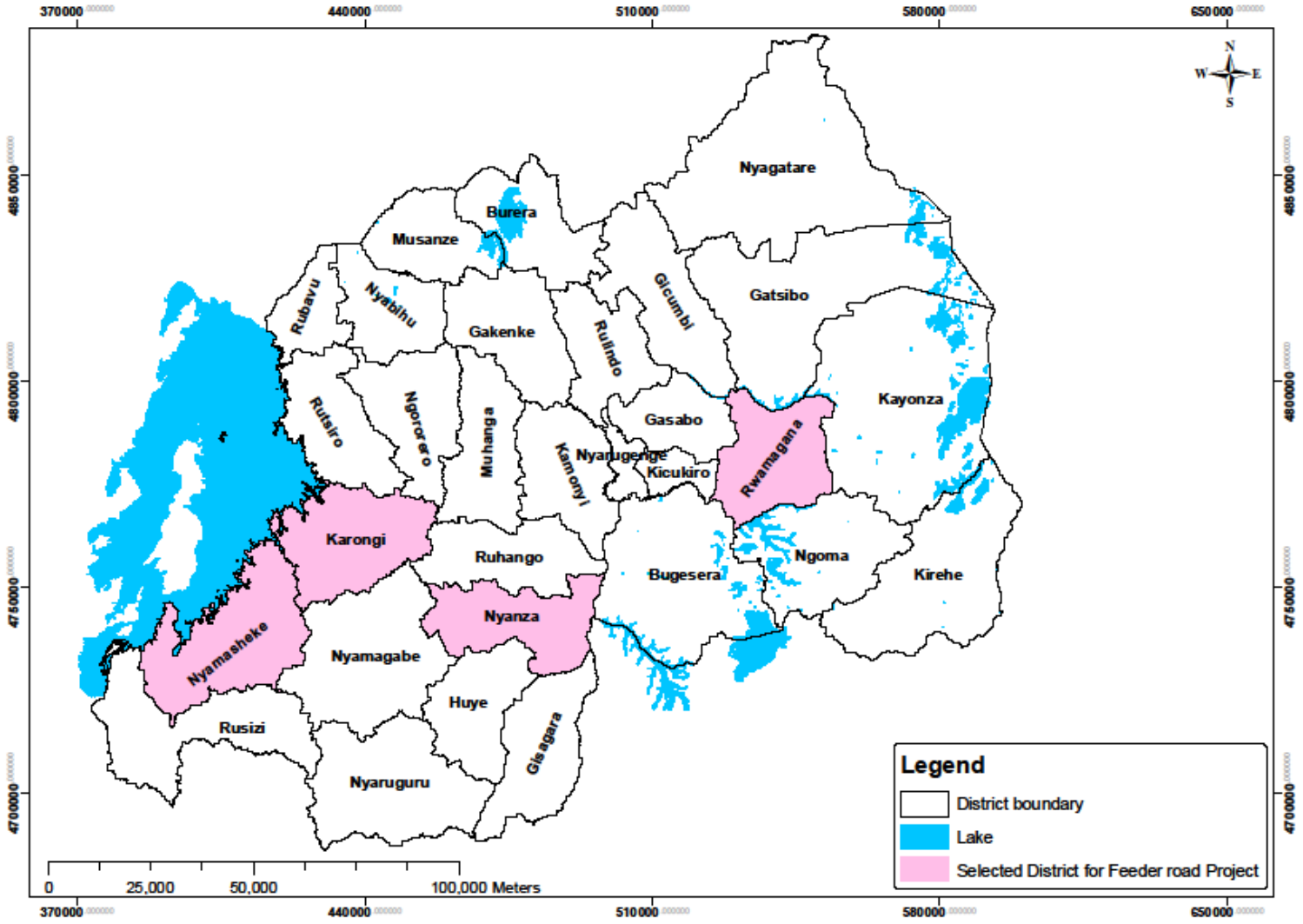
1.1. General context

Roads are one of the most economically important infrastructures in Rwanda, given the fact that more than 95% of the country's international trade is handled by land and there are hardly any land alternatives (such as railway). Internal communication is also almost exclusively by road. Yet the terrain and the economy of Rwanda are such that developing roads is a very costly venture both financially and environmentally. Unfortunately, district and unclassified roads that principally constitute the feeder roads network are in dismal state and are major constraint for the mobility of the rural population. Moreover, the feeder roads in Rwanda traverse hilly terrain with high rainfall and soft soils, and the earth roads, which are not engineered roads, are often washed out during the rainy season. Further, with its mountainous terrain, excessive rain fall, and severe erosion Rwanda's road network is rendered to high maintenance cost, which is twice higher than that of most Sub-Saharan countries.

The identified Feeder Roads Development Project (RFRDP) has been clustered into four components which a(i)rehabilitation, upgrading and spot improvement of about 400km of selected feeder roads, and improving connectivity to agricultural marketing centres in the four participating districts; (ii)routine and periodic maintenance of about 400 km (about 100 km in each of the participating district; This component will finance routine and periodic maintenance of about 400 km (about 100 km in each of the participating district) of district and feeder roads; (iii)Institutional Development for Rural Infrastructure Management and Strategy as well as the development for Rural Access and Transport Mobility Improvement, and (iv)Project Management Support.

The Rwanda Feeder Roads Development Project will be implemented in 4 Districts (Gisagara in Southern Province, Rwamagana in Eastern Province, Karongi and Nyamasheke in Western province. The estimated cost of the proposed project is forty five million US dollars (45,000,000) over four year period.

Figure 1: Districts covered by Rwanda Feeder Roads Development Project



Source: LWH-RSSP GIS Center

Road construction and rehabilitation involve many civil works including expanding or adding new lanes, changing road surface (e.g., from gravel to paved or widening intersections); widening lanes and shoulders; tarmac earth/ murram roads; adding extra lanes in steep inclines; Improving curves; Strengthening bridges. Rehabilitation sometimes includes changes or improvements to previous characteristics/conditions. The work is done on the existing platform/right of way. No additional land is needed. Examples include: Improving drainage, slopes, embankments, and/or other structures; Strengthening pavements; complete resurfacing; Recuperating civil works. Maintenance work consists of routine or periodic works to maintain the road in good working condition. This work is done on the existing platform, for instance: Routine works: patching potholes and clearing drains; Periodic works: resurfacing, lane marking, and bridge maintenance.

All those civil works have tremendous environmental and social impacts if not carefully done. It involves heavy earth excavation, burning of fossil fuels, noise and destruction of vegetation and trampling of the earth. Air pollution is increasing and very much linked to health problems including cancer, bronchitis among others. Hence the importance of preparation and implementation of Environmental and Social Management framework, Environmental impact assessment and Resettlement Actions plans in advance.

1.2. Road Scheme Project Cycle

A road scheme may take any of the following:

1) Opening up a new road, whether asphalt paved or earth;

2) Re-constructing an existing road i.e. excavating and replacing an existing layer;

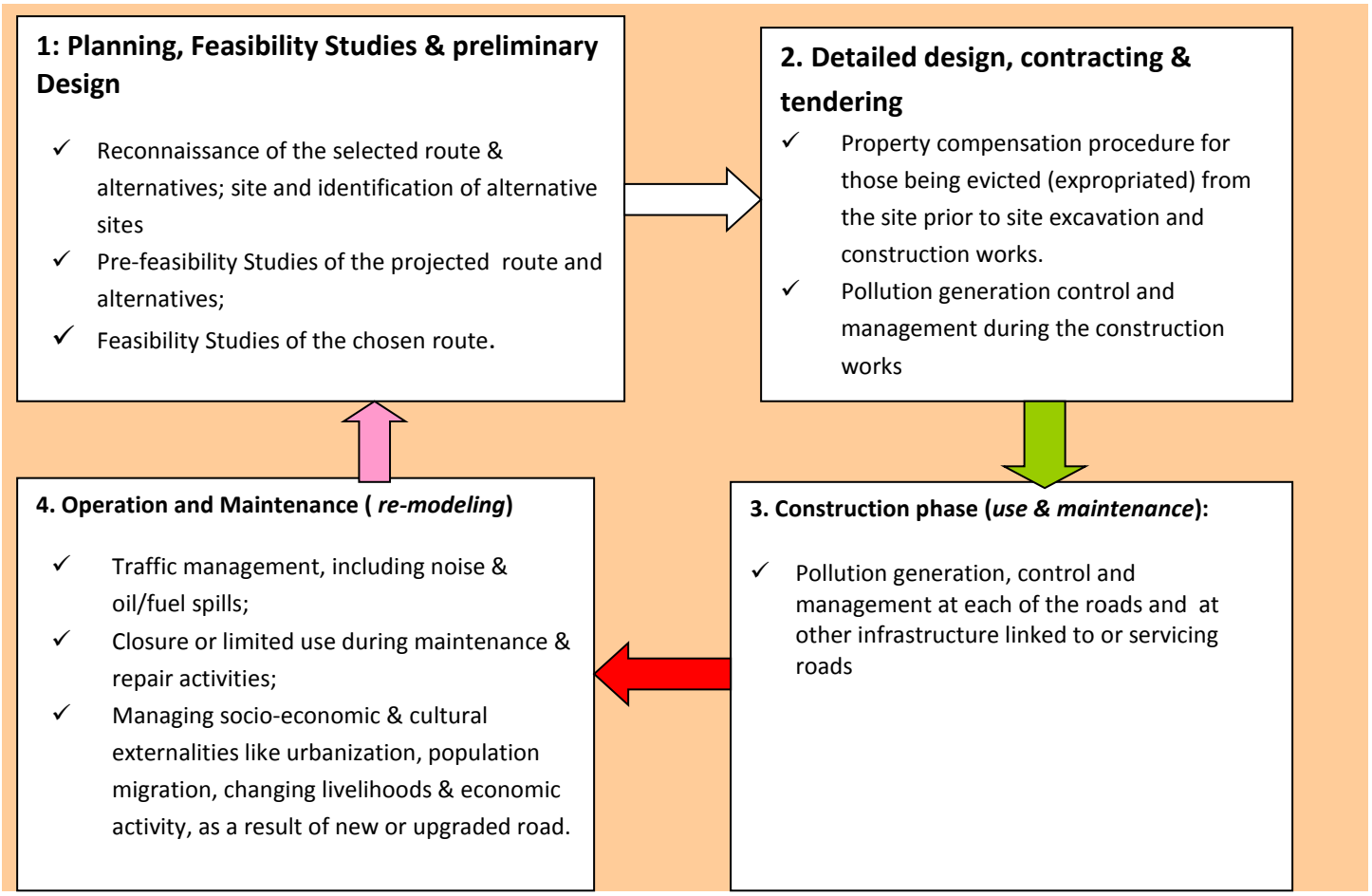
3) Upgrading an existing road – could be expanding an existing road and/ or paving an existing earth road (from earth to tarmac road);

4) Rehabilitating an existing road through maintenance activities such as patching broken parts, reconstructing the drainage systems, constructing turnouts, etc.

In general, road projects follow 4 well-defined phases, starting with planning and feasibility studies, then preliminary design, detailed design, contract preparation and tendering, and construction, and finally, operation and maintenance. For all road projects, an essential first step

is to identify and consult relevant government agencies and the public likely to be affected (whether positively or negatively). It is important to note that Environmental and Social Impact Assessment (ESIA) is project and site specific, and so it can only be undertaken once the project concept is clear including the route, road size, length, and other features. Because of the different activities and seasons in each phase of project development, environmental impacts vary by phase. The project cycle is described so as to identify key areas where and which environmental issues are likely to manifest and figure out how to address them in each project cycle phase. The project cycle is summarized in figure 1.

Figure 2: Phases/ Project Cycle of a Road Scheme and associated environmental impacts.



1.3. The Purpose of Feeder Road development project ESMF

Bank Safeguards Policies and the laws of the Government of Rwanda require that potential environmental and social impacts are established and measures to offset or reduce them to

acceptable levels are set. However, since the exact location and activities of some of the development initiatives are not defined during project preparation, the Bank requires that the Environmental and Social Management Framework is prepared (ESMF). The ESMF is a safeguard tool which outlines a mechanism to determine and assess future potential environmental and social impacts of all activities to be financed by the Bank, and then to set out mitigation, monitoring and institutional measures to be taken during implementation and operation of the activities to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels and to enhance beneficial impacts. The Environmental Assessment (EA) Regulations of Rwanda provide the general framework and procedures for carrying out EIA of development activities of all sectors (including the transport sector). Some Development Partners (DPs) and funding institutions, including the World Bank also have their EIA requirements, which should be followed as a key conditionality to fund projects.

1.4. The Rationale of ESMF for Feeder Road Development Project in Rwanda

The RFRDP is rated as Category A, implying that the project is likely to have significant adverse environmental impacts that are sensitive, diverse, or unprecedented. These impacts may affect an area broader than the sites or facilities subject to physical works. The project area includes hilly and fragile environments such as Karongi and Nyamasheke Districts, which may necessitate cutting of parts of the hills leading to erosion and landslide during construction. An initial assessment revealed that the RFRDP is expected to affect about 2085 households, 140 ha of land and 124 ha of crops and will be implemented in sensitive areas like wetlands and forest including Nyungwe Natural forest. For these reasons, the project is likely to have significant adverse environmental and social impacts. The Environmental Assessment for a Category A project examines the project's potential negative and positive environmental impacts, compares them with those of feasible alternatives (including the "without project" scenario), and recommends any measures needed to prevent, minimize, mitigate, or compensate for adverse impacts and improve environmental performance. World Bank safeguards policies for Category A projects requires the borrower to prepare a safeguards instrument, normally an Environmental and Social Impact Assessment (or a suitably comprehensive regional or sectoral EA. However, sub project investments within the overall RFRDP may be categorised and rated as B or C not necessarily A, depending on the type, location, sensitivity, and scale of the subproject

and the nature of its potential environmental impacts subprojects as determined at screening stage.

The ESMF is used in the case of operations with multiple sub-projects, under which most of specific activities, scope and locations are not determined during project approval. The ESMF spells out corporate environmental and social safeguard policy frameworks, institutional arrangements and capacity available to identify and mitigate potential safeguard concerns and impacts of each sub-project. This ensures that the sub-projects meet the national and World Bank environmental and social safeguards policies. The project triggers the following World Bank Operational safeguards policies: (i) Environmental Assessment (OP 4.01); (ii) Involuntary Resettlement (OP/BP 4.12); (iii) Natural Habitats (OP/BP 4.O4); and (Physical Cultural Resources (OP/BP 4.11).

The decision by the MINAGRI to prepare an ESMF in the implementation of the Feeder Roads Project is to adapt for the ministry and the implementing agencies a framework that will facilitate compliance with relevant national and the World Bank safeguards policies requirements for project in a coherent manner. The ESMF provides the guiding principles and institutional arrangements as well as environmental and social safeguards instrument to be prepared as part of the implementation of road sector activities. The framework gives a platform of standard principles and processes for the road activities agreeable to all parties – MININFRA, MINAGRI and the implementing Agency, Single Project Implementation Unit for Hillsides and marshlands development (SPIU LWH-RSSP), the World Bank and others, as appropriate.

This ESMF builds on the road infrastructure sector EIA guidelines already developed by REMA. Roads are one of the most important infrastructure developments in Rwanda, and by their nature, they have potentially disastrous environmental impacts. Hence there is need for ESIA guidelines to ensure that such infrastructure developments are pursued in environmentally friendly and sustainable way.

Since around 2001 when the emergency post-genocide rehabilitation ended, the Government of Rwanda embarked on long-term development, often including large scale infrastructure

developments. Accordingly, the number and scale of national and district road projects has increased in considerably, leading to a significant increase in the number of Environmental Impact Studies to be undertaken for roads. With the enactment of the Organic law on environment (No. 04/2005 of 08/04/2005), these projects are increasingly being required to address complex environmental issues.

The Rwanda Environment Management Authority (REMA) along with MININFRA (RTDA) and local authorities have recently made considerable efforts in strengthening ESIA capacity, through strict enforcement of laws; awareness raising and technical training in partnership with major infrastructure donors.

This ESMF will help in ensuring that the lessons learned from these experiences are integrated into future best practice in relation to EIA for road projects. Feeder road projects, by their nature, tend to be narrow, low profile projects extending over a substantial geographical area. The planning of feeder road schemes differs fundamentally from other types of development in three principle ways:

- Road projects occur over long distances that typically cross through a number of different environmental and administrative settings.
- Identification of significant environmental resources and avoidance of environmental impacts is achieved during the constraints and route selection stages.
- An EIS for a road project needs to allow sufficient scope to cater for procurement methods that sometimes provide scope for design input by the contractor after development consent has been obtained. This may often involve the use of innovative methods by the contractor to mitigate significant environmental impacts.

The ESMF widens the scope of the road sector EIA guidelines by enhancing both environmental and social considerations in the project cycle. Therefore the ESMF is expected to assist road developers, contractors, ESIA practitioners and planners in the road sector, to:

a) Ensure that road infrastructure development meets the statutory provisions of article 67 of the organic law No. 04/2005 on environment, and associated subsidiary legislations;

b) Provide a tool (e.g. a simple, clear document) that guides the ESIA process so that ESIA in the road sector is satisfactory and cost-effective. To ensure this, the ESMF presents a framework for screening, monitoring and mitigating potential impacts, and specifically:

- provides basic information to be collected on biophysical, social, cultural and economic parameters relevant for roads development, in each phase of the road development project cycle;
- advises on the methodology for collecting and analyzing data;
- provides a generic framework for logically documenting and presenting the ESIA results (general report outline);
- provides basic guide on how to execute ESIA activities including conducting public hearings for multi-stakeholder projects like roads development.

Furthermore, the Government is also required to prepare a Resettlement Policy Framework (RPF) to address the needs of those who might be affected when an operator's operations causes the involuntary taking of land and other assets resulting in: (a) relocation or loss of shelter, (b) loss of assets or access to assets (c) loss of income sources or means of livelihoods, whether or not the affected person must move to another location. The RPF will be prepared as a stand-alone and separate document.

Table 1: Requirements for World Bank safeguard policies triggered by activities of the road development

Bank Safeguard Policy Triggered	Action required by Triggered Policy	By Whom	Date Action required
OP 4.01 Environmental Assessment, OP/BP 4.04 Natural Habitats OP 4.11 Physical Cultural Resources (PCRs)	1. Preparation of the ESMF 2. Preparation of subproject, screening froms, ESIA and ESMP including an action plan for chance finds for PCRs when applicable	MINAGRI 2. Implementing entity/district	1. ESMF to be approved GoR and Bank and disclosed in Rwanda and Bank InfoShop before project appraisal date and 120 days before Bank Board Date. 2. Category A subprojects ESIAs to be approved by REMA and disclosed in Rwanda. Category B and C by RDB Before funds are released to respective Districts?
OP 4.12	1. Preparation of	Ministry of	RPF to be approved by GoR and the

Involuntary Resettlement	Resettlement Policy Framework (RPF). 2. Preparation of subproject Resettlement Action Plan (RAPs)	Agriculture and Animal Resources 2. RAPs by implementing entity/district	Bank and disclosed in Rwanda and Info-shop before appraisal date and 120 days before Board Date. 2. Subproject RAPs to be approved by the Bank and disclosed in Rwanda before subproject approval for funding by WB

1.5. Methodology for the preparation of ESMF

The present study ESMF report was conducted by the Project Environmental and safeguards team using the following approaches and methodology.

1.5.1. Literature review

Review on the existing baseline information and literature material was undertaken to gain a further and deeper understanding of the project. Among the documents that were reviewed included: the project design document, the national transport policy, District development plan of Rwamagana, Gisagara, Nyamasheke and Karongi, RSSP and LWH project documents and National Land use master Plan. The project team of the project also undertook detailed review and analysis of the current national relevant legislations, policies and guidelines including the World Bank Safeguards Policies, international conventions related to this project and other relevant documents.

1.5.2. Field Visits

The project team carried out visits to four (4) district namely Gisagara in southern province, Karongi and Nyamasheke in Western province and Rwamagana in Eastern Province in order to be familiar with the issues on the ground and appreciate the possible environmental issues of concern.

1.5.3. Public consultation

Various discussions and consultation were held with Project Affected persons, the district, sector officials, other relevant staff of the key implementing partners of the Feeder Road Development Project including among others Rwanda Environment Management Authority, Rwanda Transport Development Agency, Rwanda Development Board, and MINAGRI projects. After the

preparation of ESMF report a national validation workshop was organized by MINAGRI and attended by district representatives, representative from various institutions dealing with roads and environment matters. Outcomes of consultation are given in 4.4(Public consultation) and list of participants are attached as Annexes 12 and 13.

1.5.4. Preparation of ESMF Report

The preparation of ESMF for Feeder Roads development project in Rwanda consisted of:

- Collection of baseline data on the environmental conditions of the project area;
- Identification of positive and negative environmental and social impacts;
- Identification of environmental and social mitigation measures;
- Preparation of screening procedures to be used while screening subproject activities
- And formulation of environmental and social monitoring plans.

CHAPTER 2: DESCRIPTION OF BASELINE CONDITIONS

2.1. Biophysical Environmental

2.1.1. Relief and Climate:

Rwanda has a hilly and mountainous relief with an altitude ranging between 900 m and 4.507 m, and has a tropical temperate climate due to its high altitude. The average annual temperature ranges between 16°C and 20°C, without significant variation. Rainfall is abundant although it presents some irregularities. The mean Annual rainfall range between 1100pmm in Gisagara and Rwamagana and reach 1600 pmm in Karongi and Nyamasheke.

2.1.2. Arable land:

The average arable surface area available is about 0.60 ha per household use. This causes overexploitation of available land which is often accompanied by agricultural malpractices with disastrous consequences on land resources and on environment in general.

2.1.3. Soil degradation:

Rwandan soils are naturally fragile. They are generated by physico-chemical alteration of basic schistose, quartzite, gneissic, granite and volcanic rocks that make up the superficial geology of the country. The degradation of the natural environment is particularly linked with soil erosion that affects the important portion of agricultural land. This is caused by the fact that many regions, particularly Karongi and Nyamasheke, are mountainous and the agricultural activity occupy even the high slope. Generic impacts of erosion are numerous: i) loss of soil fertility by leaching arable lands; ii) increasing sedimentation on land cultivated downhill from eroded plots; iii) Risk of destruction of crops and sand banks which are particularly high in marshlands and valleys. iv) Risks of landslides, flooding and mudslides and v) risk of irreversible leaching of soils.

2.1.4. Water resources:

Rwanda possesses a relatively big quantity of water (surface and underground water): rivers, lakes and marshlands occupy a surface area of 211,000 ha, that is about 8% of the national territory (lakes: 128,000 ha, rivers: 7,260 ha and marshlands: 77,000 ha). The outflow of the renewable underground resource is estimated at 66 m^3/s, out of which 9 m^3/s are produced by 22,000 known sources. In general, too little information is available especially on underground water aquifers.

2.1.5. Wetlands:

Wetlands of Rwanda are composed of marshlands, lakes, rivers and streams and represent about 14,9% of the national territory of which 6,3% are marshlands and 8,6% are lakes, streams that are permanent or seasonal.

2.2. Biodiversity and forests

The Rwandan territory is covered with diverse ecosystems which include; natural ecosystems (consisting of mountain rainforests, gallery forests, savannah woodland, wetlands and aquatic forests), Forested area and agro-ecosystems. All these ecosystems are very rich with flora and fauna.

2.2.1. Protected Species and areas:

Protected areas are mainly the three national parks: i) Volcanoes National Park which is famous worldwide due to the presence of mountain gorillas-Gorilla gorilla beringei and variety of plants and animal species, ii) Nyungwe National Park has more than 1,200 species of flora, 275 species of birds, iii) Akagera National Park covers a surface area of about 108,500 ha and inhabits more than 900 species of plants and 90 mammals. However, it should be realised that the protected areas of Rwanda have lost around 50% of their original surface area during the last 40 years.

Relict and gallery forests comprise: i) Gishwati forest covering 600 ha; ii) Mukura natural forest covering 800 ha; iii) relict forests and savannahs of the Eastern Province situated around Akagera National Park have a variety of endemic and rare species of plants most of which are used in traditional medicine and iv) gallery forests with endemic and rare species.

The Volcanoes National Park is home to about 30 per cent of the global population of Mountain Gorilla (Gorilla gorilla beringei). It has other 115 mammals' species, including the golden monkey (Cercopithecus mitis kandti), elephants, buffaloes, 187 bird species, 27 species of reptiles and amphibians and 33 arthropod species. CITES consider Rana anolensis, Chameleo rudi and Leptosiaphos grauer endangered (MINAGRI 1998, Chemonics International Inc. 2003). It has also 245 plants, 17 of which are threatened; and 13 species of orchids including Disa starsii, Polystachya kermessia, Calanthes sylvatica, Chamaengis sarcophylla, Cyrtorchis arcuata, Habenaria praestans, Stolzia cupuligera, Eulophia horsfallii, among others (Chemonics International Inc. 2003).

Nyungwe National Park has 75 species of mammals, including 13 species of primates with some on the IUCN Red list such as the Eastern Chimpanzee (Pan troglodytes schweinfurthii), owl-faced guenons, (Cercopithecus hamlyni) and the Angolan Colobus monkey (Colobus angolensis ruwenzorii). The national park is also considered an African Important Bird Area (IBA) with 285 bird species comprising 25 endemic to the Albertine Rift (Plumptre et. al. 2002, Fischer and Killmann 2008). Of the 1,200 plant species inventoried in the Nyungwe National Park - 265 species were trees and shrubs and of these 24 are endemic to the Albertine Rift. Among the plant species in the park, 5 species of trees and 6 species of grass are endemic to the park. These include Oricia renieri, Pentadesma reyndersii, Pavetta troupinii, Psychotria palustris and Tarenna rwandensis. The flora of the park also comprises 148 species of orchids, of which 19 are endemic (MINITERE 2005). The following species of orchids found on the CITES list are also found in the park: Diaphananthe biloba, Disa eminii, Disperis kilimanjarica, Euggelingia ligulifolia, Eulophia horsfallii, Polystachya fabriana, Polystachya hastate and Tridactyle anthomaniaca (MINITERE 2005).

The wildlife in the Akagera National Park comprises 90 species of mammals, 530 bird species and 35 fish species. The most threatened species are rhinoceros, large carnivores, particularly lions. Many species in the Akagera National Park are protected by the CITES convention such as Loxodonta africana (African elephant), Sincerus caffer (buffalo), Panthera leo (leopard) and Tragelaphus spekii (sitatunga). (MINITERE 2003a, MINITERE 2005). The flora of the Akagera National Park is diverse and 6 species of orchids are recorded. The grass savanna is dominated by Themeda triandra and Hyparrhenia sp. accompanied with normal species like Sporobolus pyramidalis and Botriochloa insculpta. Acacias are the most trees found in the forest savannah, and the following species are recorded: Acacia senegal, A. Sieberiana, A. polyacantha campylacantha, A.gerardii and A. brevispica. Species of Combretum are also found in the park (MINITERE 2005).

Natural forests are rich in fauna species. Gishwati forest includes species such as Pan troglodytes schewinfurthii, Colobus angolensis ruwenzorii, Potamochoerus porcus, Cephalophus nigrifons, Dendrohyrax arboreus, Felis serval and Felis aurata (MINAGRI 2002 in Munanura et. al, 2006). The Tree squirrel (Funisciurus pyrrhopus), Rwenzori sun squirrel (Heliosciurus ruwenzori), Ground hog (Thryonomys swinderianus) and the jackal species (Canus spp.) are found in

Mukura forest. Makura is also rich in birds with 59 species recorded, among them 7 Albertine Rift endemic species: Tauraco johnstoni, Apalis personata, Apalis Ruwenzori, Cynnyris regia, Zoothera tanganjicae, Bradypterus graueri and Parus fasciiventer (Munanura et. al. 2006).

Rugezi wetland is habitat to an endangered bird and hosts 60 per cent of the global population of Grauer's swap-warbler (Bradypterus graueri). It is also habitat to 19 bird species, including two species of Threskiornithidae, protected by CITES. Apart from Clarias liocephalus and Haplochromis sp., the wetland is not rich in fish species. A low number of mammals are also identified: several species of Muridae, Tragelaphus spekei and Aonyx capensis. (MINITERE 2003a). The orchid Disa stairsii, a specie protected by CITES is also found in Rugezi wetland (MINITERE 2003b). It worth to note that none of these protected areas will be affected by the proposed projected. Environment Management plans will ensure the protection and preservation of endemic and rare species are met.

It is worth to note that the Nyungwe National Park is the only protected area that is likely to be affected by the Feeder Roads development project in Nyamasheke and Karongi District. Therefore, mitigation measures need to be identified and implemented in order to protect and preserve species found in that forest.

2.2.2. Biodiversity of wetlands:

The ecosystems of wetlands of Rwanda inhabit a biological diversity that is rich in plant and animal species except for the lakes of Kivu, Bulera and Ruhondo that have some limnologic problems. Most lakes of the Akagera Park are rich in biodiversity. The Water hyacinth is present and started covering big areas of lakes, posing a threat to their biological diversity. The lakes of the Akagera National Park are among the richest in fish species in the whole country. The most dominant species is the haplochromis and other fluvial species. Other lakes like Muhazi, Nasho, Rwampanga, lakes of Gisaka and Mugesera are also very rich in fauna and flora.

2.2.3. Biodiversity in agricultural systems:

In Rwanda, human settlements, diversified agro-pastoral practices, consumption of forest products and urbanization have caused the disappearance of the natural climatic conditions to more than 90%. Those changes have caused secondary vegetation consisting essentially of graminaceous plants, numerous seasonal or perennial species alternating with crops. The

importance of each crop varies according to regions. Cash crops are very few. They are limited to coffee, tea and pyrethrum. The agricultural production systems also host numerous wild related species.

2.3. Socio-economic environment

2.3.1. Population and economy:

Rwanda is classified among the poorest and densely populated countries of the world. In August 2002, Rwanda counted 8,128,553 inhabitants with a surface area of 26,338 km2, i.e. a physical density of 321 inhabitants /km2. The 2012 National Population census provision results place Rwanda's population at 11,055,976 with a density 408 inhabitants/km2. The Gross Domestic Product (GDP) per inhabitant in 2011 is estimated to 1,284 $ US compared with 1,100 $ US in 2010. Historically, from 2000 until 2010, Rwanda's average quarterly GDP growth was 8.48 % reaching an historical high of 13.80 % in June of 2008 and a record low of 2.20 % in December of 2003.

The Rwandan economy is based mostly on subsistence farming. An estimated 80 % of the population occupied in agriculture. Agriculture comprised an estimated 42.1 % of GDP in 2010 while industrial sector contributed 14.3 % of GDP in 2010. The service sector rebounded in 2010, becoming the country's largest sector by economic output and contributing 43.6 % of the country's GDP. Key contributors include banking and finance, wholesale and retail trade, hotels and restaurants, transport, storage, communication, insurance, real estate, business services and public administration including education and health.

2.3.2. Human settlements:

The rural settlement of Rwanda has been scattered and characterized by unplanned settlements which has lead to land degradation and soil erosion. In some urban areas, Rwanda has developed a master town plan. Towns have earlier on been developed spontaneously without taking into consideration the environmental aspect. The present policy of the Government of Rwanda encourages a system of grouped settlement which is commonly known as imidugudu.

2.3.3. Energy and transport

In Rwanda, the biomass serves as the main source of energy as it covers 94% of national needs, against only 5% for the contribution of petrol products and 1% for electric power. Woody fuels and biomass wastes are the sources of energy used in households, industries and handicrafts. However, the country has alternative sources of energy, which have not been developed, such as peat, methane gas of Lake Kivu representing 57 billion m3, solar energy and biogas.

Combined with anthropic factors (agriculture, drainage of marshes, deforestation and overexploitation of river basins), the hydrous deficit is considered to be the main factor of vulnerability of the hydropower sector. It is evident that the pluviometric deficit leads to the reduction of offer in water resource and, consequently, in hydroelectricity. That was the case for the power plants of Ntaruka and Mukungwa on lakes Bulera and Ruhondo, two main interior sources of electric energy of Rwanda.

Moreover, the hydropower-related infrastructure is still weak with present production not exceeding 27 MW, while the demand is estimated to be more than 40MW. Diesel-powered plants are producing electricity at Jabana and Gatsata, and the mobilization of funds and investors is underway for other hydro-electric projects including:

- 28 MW on Nyabarongo River in Bulinga;
- 60 MW (three countries) on Akagera at Rusumo;
- Rusizi II, Mukungwa III, Rukarara and various other micro hydropower plants.

The transport sector is generally dominated by road transport that includes 14,000 Kms of roads and tracks. In air transportation, the country has two international airports (Kigali and Kamembe) and aerodromes (Huye, Rubavu and Musanze) used for internal air transport. Water transport is used mainly on Lake Kivu for connecting districts of the Western Province. As of 2011, the country has no railways, although funding has been secured for a feasibility study into extending the Tanzanian Central Line into Rwanda.

Rwanda has a road network of 14,000 km of which about 4700 km is classified[1], spread over barely 27,000 square km of national territory. 60 percent of the classified road network is designated as national roads consisting of about 1,100 km of paved roads and 1, 800 km of gravel roads while the remaining 40 percent of the classified network (about 1, 800 km) is designated

[1] The country's road reclassification was carried out in 2005 by Ministry of Infrastructure.

as district road. Out of the 14,000 km of the overall road network about 66 percent (9,300 km) are unclassified roads, which are predominantly earth roads and considered as communal roads. According to a road condition survey carried out in 2010, about 23 percent of the district roads are in good condition while 44 percent and 32 percent are in fair and poor condition, respectively. The unclassified roads are not surveyed, but generally in poor state and impassable during the rainy season.

Moreover, the feeder roads in Rwanda traverse hilly terrain with high rainfall and soft soils, and the earth roads, which are not engineered roads, are often washed out during the rainy season. Further, with its mountainous terrain, excessive rain fall, and severe erosion Rwanda's road network is rendered to high maintenance cost, which is twice higher than that of most Sub-Saharan countries.

2.3.4. Land use

Agriculture is the most important sector of the Rwandan economy with a contribution of 42.1% to the GDP (12 % for livestock) and contributes 71% of export revenue. Coffee and tea are the main export crops, with about 62 million US$ of export revenue in 2005, of which 38 million US$ were from coffee and 24 million US$ from tea. The agriculture production system is based on small family subsistence farms whose production is consumed by the owners at more than 80 %. The systems of crops are complex, based on the product diversification and the association of crops. Seven main crops, namely banana, bean, sweet potato, cassava, sorghum and potatoes, of which the first five are present in 90% of production units and constitute the common basis for all the regions of Rwanda.

The little use of chemical fertilizers and pesticides, the low level of equipment and the very limited use of research based technologies result in small yields which are also very vulnerable to climatic changes. Research and popularization are expected to contribute to growth by the promotion of modern inputs and new technologies. The agricultural intensification at the projects level was often realized without taking into account environmental drawbacks accrued from excessive inputs like mineral fertilizers, pesticides and herbicides.

In addition to agricultural activities, most farmers in Rwanda raise livestock. The national average milk production is 1litre / cow/ day for 180 days of lactation (MINAGRI, 2001). The pastures consist mainly of family fallows and marginal lands considered as inappropriate to agriculture, such as the undergrowth. The demographic pressure progressively leads to the semi-intensification and intensification of fodder resources used to feed animals.

MINAGRI (2006) showed that the number of cows nationally increased by 60 % between 2000 and 2005. The number of goats increased by 67 %, sheeps by 195 %, pigs by 93 %, poultry by 44 % and rabbits by 67 %. The limited subsisting pastoral areas are used inefficiently, because farmers do not master the rotative management of pastures, resulting in overgrazing and overexploitation caused by trampling, degradation and reduction of vegetation cover. The permanent stabulation, the semi-stabulation and extensive farming constitute the three main types of animal husbandry. It should be noted that there is a program managed by MINAGRI called «One Cow per Every Poor Family in Rwanda (Girinka Program) » that will cover all the districts of the country in order to contribute to poverty reduction and food security.

Table 2: Land cover in Rwanda (MINIRENA 2010)

Land cover types	**% of the total**
Potential Arable Land (land actually under agriculture	61
Wetlands	10
Forest	10
Water body (lakes and rivers)	6
Protected areas (parks)	8
Settlement and other infrastructures	5

The Rwanda land tenure is regulated by the Organic Land Law of 2013. There is no difference in the Law between Rwanda Nationals and Foreigners. All land in Rwanda belongs to the State, the Districts and the Cities and the government lease out the land to individuals or companies for a period of 99 years.

CHAPTER THREE: INSTITUTIONAL AND LEGAL FRAMEWORK FOR ESMF

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 Feeder Roads Development project. Rwanda being a signatory to various international conventions and laws, it is important that national projects are in line with these laws and as such some of the relevant international conventions are reviewed in this chapter.

3.1. National environmental and social management requirements

This part describes National institutional, legal and policy framework for environmental and social requirements in Rwanda, applicable to the project as well as the international laws and conventions that bear relevance to the implementation of this project.

3.1.1. Policy framework

Since the end of the post-genocide emergency resettlement and rehabilitation metamorphosed into a clearer, more coherent long-term development programme around 2000, the Government of Rwanda (GoR) has made substantial investments in roads rehabilitation; reconstruction and opening up of new roads, at the national level as well as within districts. The country has a road network of more than 14,000 Km, of which 4.698 km are classified as national roads. More than 3,500 Km are gravel (MININFRA, 2008: Transport Sector Policy). Most national roads serve as cross-border highways: Rusumo – Kigali serves as the main entrance to and through the country from Tanzania; Gatuna-Kigali is the most popular and busy route from Uganda and Kenya, and generally part of the northern corridor that serves the Eastern Democratic Republic of Congo (DRC) and Burundi; Gisenyi-Ruhengeri-Kigali is the main entry into the country from the North Kivu province of DRC, and major outlet of local, regional and international traffic into the DRC.

Roads are perhaps the most important post-conflict reconstruction and development intervention that GoR has undertaken. Since 2000, more than 1000 Km of paved road has been rehabilitated, reconstructed or constructed, linking Kigali city to all provincial towns and most

major secondary urban areas in Rwanda. This large scale investment in road construction, rehabilitation and maintenance, has already yielded dividends – facilitating movement of people and goods within and through Rwanda, which has contributed significantly to the more than 6% annual economic growth.

But Road construction and maintenance in Rwanda is one of the most costly and difficult work, considering the fact that roads constitute the main source of transport; and the steep and rugged terrain in most parts of Rwanda. For this reason, Environmental impact assessment (EIA) is an important aspect of sustainable road sector investments in Rwanda. The policy framework guiding roads development in Rwanda currently entails the following:

1. **The National transport policy** highlights the main objective of the road sub-sector in Rwanda as to Maintain, Rehabilitate and Develop the National Road Network, which is responsible for more than 80% of human and goods traffic in the country. The policy's strategies to meet these objectives are:

a) expanding and improving Rwanda's road infrastructure, protecting existing capital investments, and improving road safety;
b) establishing an appropriate institutional framework for the accelerated development of the road sub sector;
c) financing road maintenance works through multi-year maintenance contracts,
d) renewable under performance evaluation;
e) encouraging community participation in road maintenance through the district
f) development committees;
g) improving the ability and quality of local road infrastructure, thereby enabling the rural community to market its crops;
h) Creating an environment conducive to the encouragement of Private Sector Participation in rehabilitating, maintaining, and developing road infrastructure. Accordingly, a Road Maintenance Fund was established to provide adequate, reliable financing for road maintenance activities; and a Road Maintenance Strategy was formulated to guide the process.

2. **The Road Maintenance Strategy** (RMS) of May 2008 emphasises routine maintenance as a more cost-effective of establishing and managing road infrastructure;

The strategy aims to: a) provide a policy framework to guide RTB/Districts/ or Roads Agency staff in maintenance programming, planning and execution; b) ensure that investments that are made in the development of roads; c) ensure that infrastructures are safeguarded and allowed to deliver their maximum benefit; and to allow all stakeholders to understand the investment decisions taken by MININFRA.

The RMS lays emphasis on building capacity, fostering public-private partnerships and a long-term project cycle involving multi-year contracts management. Environmental management is a key aspect of the RMS, as this is critical for cost-effective road maintenance and rehabilitation.

4. **Decentralisation Policy** has, since 2001, effectively transferred power and service delivery responsibilities from the central Government to districts. As a result of this policy, a lot of financing for district roads and other infrastructure establishment are managed by districts, through the Common Development Fund (CDF) and the Road Maintenance Fund. Under decentralization, the District Departments of Infrastructure have the responsibility of executing road maintenance procedures, with technical guidance from MININFRA. Districts are required to undertake and report regularly, on road maintenance activities.

5. **Land Policy 2004** emphasises productive use of land based on suitability of specific land units. It also advocates for and entrenches land rights and tenure security by promoting land registration and titling. For road scheme development, the implications of this policy relate to resettlement and compensation; assessing the suitability of particular areas for road infrastructure; and the influence of infrastructure development on the changing value and use of land.

6. **The Environmental Protection, conservation and management policy 2004**, seeks to integrate environmental sustainability principles into all development processes, programmes and projects. For roads, the nature of the terrain in Rwanda makes environmental issues (e.g. water runoff and landslides), the main threats to sustainable road maintenance. The terrain and the settlement patterns also indicate that roads – which are the most common mode of transport –could be a potentially dangerous development, unless environmental and social considerations of human safety, risk of losses, are prior anticipated, identified, analysed and integrated into the project design and implementation. This underscores the importance of EIA in road projects.

3.1.2. Legal and regulatory framework

The main national legislations that provide for and guide Environmental Impact Assessment (EIA) for road infrastructure, and the provisions, thereof, include the following: National Constitution of June 2003 obliges the Government of Rwanda - current and future – together with the population, to carefully harness environmental resources in order to ensure sustainability and inter-generational equity. The degree of relevance of these legislative instruments varies with the activity and area, because environmental consequences of development tend to be area and theme specific.

3.1.2.1. Constitution of 2003

As the supreme law of the country, the constitution of the Republic of Rwanda stipulates that the state shall protect important natural resources including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Rwanda. This constitution entrusts the Government with the duty of ensuring that Rwandese enjoy a clean and healthy environment. Article 49 states that every citizen is entitled to a healthy and satisfying environment. Every person has the duty to protect, safeguard and promote the environment. The state shall protect the environment. The law determines the modalities for protecting, safeguarding and promoting the environment.

3.1.2.2. Law on Environment Protection and Management

The most relevant legislation for this study is the Organic Law on Environmental Protection, Conservation and Management. The legislation sets out the general legal framework for Environment protection and management in Rwanda. The law centers on avoiding and reducing disastrous consequences on Environment. The Ministry of Natural Resources, the ministry responsible for the Environment, puts in place the organic law regarding environment conservation. Initially until very recently, REMA was responsible for the approval of EIA reports; a responsibility that has now been transferred to Rwanda Development Board (RDB) where there is a department for EIA headed by a Director and responsible for review and approval of all EIA reports.

3.1.2.3. Law on the Use and Management of Land in Rwanda

The law on the land use and management determines how land should be used in Rwanda. It also institutes the principles that are respected on land legal rights accepted on any land in the country as well as all other appendages whether natural or artificial. The Chapter II of the law categorizes land according to its uses. Article 12 of the law gives the state ownership over land

which makes up the public domain including lakes and rivers as listed by an order of the Minister having water in his or her attributions, shores of lakes and rivers up to the length determined land occupied by springs and wells determined in accordance with an order of the Minister having water in land reserved for Environmental conservation composed of natural forests, national parks, reserved swamps, public gardens and touristic sites among others.

Article 29 gives the state control over swamps. The state is the only authority over their use. The law calls for inventory of the all swamps and their boundaries, the structure of the swamps, their use, how they can be organized. According to article 29 of the Land Organic Law, swampy land belongs to the state and no person can use. In order for the swampy land to be efficiently managed and exploited, a Ministerial order by the Minister having Environment in his or her attributions shall determine a list of swamps and their boundaries. The law further requires that such a list shall clearly indicate the structure of the swamps, their use, how they can be organized so that they can be beneficial to Rwandan nationals on a sustainable basis. The ministerial order must also certify the modalities of how swamp land shall be managed, organized and exploited. RSSP 3 will follow the recommendation stipulated in articles of this law.

3.1.2.4. Law No. 18/2007 of 19/04/2007 Relating to Expropriation for Public interest

This law determines the procedures relating to expropriation of land in the interest of the public. Article 3 of the law stipulates that's its only the government that has authority to carry out expropriation. However the project, at any level, which intends to carry out acts of expropriation in public interest, shall provide funds for inventory of assets of the person to be expropriated and for just compensation on its budget.

According to the organic law, no person shall hinder the implementation of the program of expropriation on pretext of self centered justifications and no land owner shall oppose any underground or surface activity carried out on his or her land with an aim of public interest. In case it causes any loss to him or her, he or she shall receive just compensation for it.

3.1.2.5. Other relevant legal instruments.

Other relevant regulations applicable to this project include: Ministerial Instruction No. 02/UPPR/09 with respect to Excavations and restoration of public infrastructure by communications and Infrastructure Service Providers (CISPs) operating in Rwanda, April 21, 2009.; General Guidelines and Procedures for Environmental Impact Assessment of November 2006, prepared by REMA; and Law N°55/2011 OF 14/12/2011 Governing Roads in Rwanda. This law regulates the road network in Rwanda and determines its reserves, classification and management.

3.1.3. Institutional framework for environmental management *in* Rwanda

The institutional framework for environmental management is currently enshrined in the Organic Law determining the modalities of protection, conservation and promotion of the environment in Rwanda, published in the Official Gazette RWA Nº 9 of the 1st May 2005, particularly in its chapter III relating to the establishment of the institutions.

3.1.3.1. Ministry of Natural Resources (MINIRENA)

MINIRENA is a multispectral ministry covering five sectors: Lands, Water Resources, Forest, Mining and Environment. Environment is a cross cutting sector because it covers the four other sectors. MINIRENA is responsible for the development of policies, laws and regulations as well as coordination of all activities in the management of land, water resources, forest, mining activities and environment, as well as their follow up and evaluation.

3.1.3.2. Ministry of Infrastructure (MININFRA)

The Ministry of Infrastructure is responsible for developing policies in infrastructure sectors namely roads, housing, transport, communication, energy, water and sanitation. MININFRA is also responsible for monitoring the implementation of those policies.

3.1.3.3. Rwanda Transport Development Agency (RTDA)

RTDA is a newly established institution under MININFRA and is in charge of the implementation of the national policy on public infrastructure in particular roads, bridges, etc. RTDA will be responsible for the follow up and monitoring of the implementation of the Rusumo international bridge and OSBP facilities project.

3.1.3.4. Rwanda Environment Management Authority (REMA)

Rwanda Environment Management Authority (REMA) was established in 2004 to act as the implementation organ of environment-related policies and laws in Rwanda. 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; etc.

3.1.3.5. Rwanda Development Board (RDB)

RDB was created by Organic Law N° 53/2008 of 02/09/2008. It has a mission of improving the well-being of all Rwandans by fast-tracking development, catalyzing sustainable economic growth, and creating prosperity for all. According to the recent restructuring of government institutions the following were merged to form RDB: RIEPA, ORTPN and CAPMER. The responsibility for follow-up of environmental impact assessment studies is now under RDB, the department in charge of investment.

3.2. World Bank environmental and social safeguard policies

The World Bank's has developed 10 environmental and social safeguard policies, which are a cornerstone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. These policies provide guidelines for Bank and borrower in the identification, preparation, and implementation of programs and projects. This ESMF has been designed so that all investments in the transport sector funded under the World Bank support will comply with all the Environmental laws of the Government of Rwanda and the Environmental and Social Safeguard Policies of the World Bank. In this chapter, the Bank's safeguards policies and their applicability

to the transport sector are discussed and in the subsequent chapter those of the Government of Rwanda are presented.

The World Bank Safeguard Operational Policies (OP) and Bank Procedures (BP) are;

1. Environmental Assessment (OP4.01)
2. Natural Habitats (OP/BP 4.04)
3. Forestry (OP/BP 4.36)
4. Pest Management (OP 4.09)
5. Physical Cultural Resources (OP 4.11)
6. Indigenous Peoples (OP 4.20)
7. Involuntary Resettlement (OP/BP 4.12)
8. Safety of Dams (OP/BP 4.37)
9. Projects on International Waters (OP/BP 7.50).
10. Projects in Disputed Areas (OP/BP 7.60)

These policies apply differently depending on the activities to be supported by the World Bank. In preparing this ESMF, a consideration of the type of investment/activity in the transport sector vis-a-vis the baseline data presented in Chapter 2 against the requirements of the Bank Safeguard policies, has led to the determination that the following Bank policies are likely to apply.

3.2.1. Environmental Assessment (OP4.01):

This policy requires environmental assessment (EA) of projects/programs proposed for Bank financing to help ensure that they are environmentally sound and sustainable, and thus improve decision making. The core requirement of this policy is to screen early for potential impacts and select appropriate instrument to assess, minimize and mitigate the potentially adverse impacts. Relevant safeguard instrument for the policy include Environmental and Social Impact Assessment (ESIA), which is prepared for specific projects already identified before project appraisal; Environmental and Social Management Framework (ESMF), which is prepared to establish a mechanism to determine and assess future potential environmental and social impacts during implementation of the project activities and investments, which are not specified before project appraisal; and Environmental and Social Management Plan (ESMP).

The policy calls for the proposed project as a whole, and for activities/investments to be identified at a later stage during project implementation to be environmentally screened to determine the extent and type of the EA process. At screening stage, the proposed project of sub-projects will be classified as Category A, B or C, depending on the type, location sensitivity, and the full scale of the project and the nature and magnitude of its potential environmental impacts. For Category A: full Environmental and Social Impact Assessment (ESIA) will be required, since project activities may have adverse, irreversible and significant environmental impacts. For Category B: a limited ESIA will be adequate, since projects may have site-specific environmental impacts, and their mitigation measure can be designed more readily. Under Category C: subprojects are likely to have minimal or no adverse environmental impacts, hence beyond screening; no further environmental assessment action may be required.

OP 4.01 further requires that the ESIA and ESMF report must be disclosed as separate and stand-alone documents by the Government of Rwanda and the World Bank as a condition for Bank Appraisal of the proposed project. 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.

3.2.2. Involuntary Resettlement (OP/BP 4.12):

Interventions in the road sector could lead to displacement, loss of assets and restriction of access to sources of livelihood. All candidate roads would be screened for impacts and a Resettlement Action Plan (RAP) will be prepared, if required. Resettlement Policy Framework (RPF) sets the guidelines for the Resettlement and Compensation Plans (RAPs) that would have to be prepared when any project investment (activity) triggers this policy. The Resettlement Policy Framework (RPF) has to be prepared by the government and approved by the Bank in compliance with OP 4.12. The RAPs would be prepared by the sub project implementers (e.g. districts) and would have to be submitted to the REMA? for approval. In some cases the World Bank reserves the right to also approve any RAP as a condition for that particular sub project investment to be financed under by IDA Credit.

This policy is triggered when a project activity causes the involuntary taking of land and other assets resulting in: (a) relocation or loss of shelter, (b) loss of assets or access to assets (c) loss of

income sources or means of livelihood, whether or not the affected persons must move to another location. Therefore, people are in most cases compensated for their loss (of land, property or access) either in kind or in cash of which the former is preferred. The resettlement policy applies to all displaced persons regardless of the total number affected, the severity of the impact and whether or not they have legal title to the land. Particular attention should be paid to the needs of vulnerable groups among those displaced.

The policy also requires that the implementation of the resettlement plans are a pre-requisite for the implementation/start of the construction to ensure that displacement or restriction of access does not occur before necessary measures for resettlement and compensation are in place. For chosen sites involving land acquisition, it is further required that these measures include provision of compensation and of other assistance required for relocation, prior to displacement, and preparation and provision of resettlement sites with adequate facilities, where required. In particular, the taking of land and related assets may take place only after compensation has been paid, and where applicable, resettlement sites, new homes, related infrastructure and moving allowances have been provided to displaced persons. For project activities requiring relocation or loss of shelter, the policy further requires that measures to assist the displaced persons are implemented in accordance with the project resettlement plans of action. The policy aims to have the displaced persons perceive the process to be fair and transparent. Where there is a conflict between the Laws of Rwanda and the Bank OP4.12, the latter must take precedence if the Bank is to fund the project/activity.

3.2.3. Natural Habitats (OP/BP 4.04):

The core requirement of the policy is to avoid financing projects that degrade or convert critical habitats. In cases where there are no alternatives and if acceptable, mitigation measures should be put in place**.** Natural Habitat Policy is triggered because some swampy or marshlands may be crossed by the roads. These wetlands may have ecological value, such as habitat to some important fauna (birds, insects, and aquatic animal species) or flora. Therefore, is important to confirm during Environmental and Social Impact Assessment and mitigation measures should be included in the ESMPs and contract documents, if required.

3.2.4. 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. Road reconstruction 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.

3.3. *Comparison between Rwandan legislation and OP* 4.12

This section compares the similarities and differences between the National requirements and the World Bank safeguards policies. Basically there is no big difference in regards to environment and Social management framework between national requirements and World Bank safeguards. However some differences are observed in Rwandan laws related to expropriation and the World Bank's safeguards on Involuntary Resettlement. The promulgation of the new Expropriation Law introduces a legal framework within which expropriation activities must be conducted, and above all, attempts to bring Rwandan legislation more in line with international best practice requirements.

Despite these provisions, there are still some gaps between the national Rwandan legislation and the World Bank Policy OP4.12 and in the implementation of feeder roads project, where the local law differs with the Banks' the latter will apply or take precedence. These relate to the general principles for resettlement, eligibility criteria, the notification period for expropriation and resettlement, and the procedures required throughout the resettlement process. Therefore, Rwanda being the signatory to international laws and conventions the implementation of this ESMF will refer to both national and World Bank safeguards policies.

Table 3: differences between Rwanda regulations and World Bank Policies

Area	Rwandan Law	World Bank OP 4.12
Avoid Resettlement	Rwandan national legislation regards expropriation of land for public interest as inevitable	resettlement should be avoided whenever possible
Notification period required	Property must be handed over in a period not exceeding 90 days after compensation has been paid	OP4.12 requires that displacement must not occur before necessary measures for resettlement are in place
Meaningful and participative consultation	The Rwandan Expropriation Law simply stipulates that affected peoples be fully informed of expropriation issues and goes further to prohibit any opposition to the expropriation program	OP 4.12 requires that persons to be displaced should be meaningfully consulted and should have opportunity to participate in planning and design of resettlement programs
Eligibility determination	Rwandan legislation only stipulates that compensation be due to land owners, rather than to ALL land users as stipulated by OP4.12	The World Bank OP4.12 allows a broader range of eligibility than the national policy, as described in Section 8. Thus OP4.12 will provide the framework for Resettlement for feeder road project.
Fair and just compensation	The Expropriation and Valuation Laws Provide for fair and just compensation to expropriated peoples eligible for compensation.	OP4.12 stipulates a clear preference for non-cash compensation for land based livelihoods to be provided. Thus OP4.12 will provide the framework for resettlement for the feeder Roads project
Monitoring:	Monitoring measures are provided for in Rwandan legislation but the focus is to ensure that contracted compensation has been provided in full.	OP4.12: Requires assessment as to whether the compensation provided was appropriate, and whether the PAPs livelihoods have been restored or improved.

CHAPTER FOUR: POTENTIAL ENVIRONMENT AND SOCIAL IMPACTS AND GUIDELINES FOR MITIGATION

This Feeder Roads Development Project in Rwanda and its activities will have potential impacts (both positive and negative) on the surrounding environment, both directly and indirectly as there will be direct and indirect interactions between project activities and the environment. This section details out the potential environmental impacts of Feeder Roads Development project in Rwanda funded by World Bank. The environmental and social impacts identified at this stage are preliminary in nature and will need to be further elaborated and potential for occurrence has to be ascertained during further stages of project design and implementation. Having categorized the potential impacts by the stage of the project, which are mostly generic to various projects of feeder roads, impacts that are specific to a project type are further elaborated in the appropriate stage of their occurrence.

This chapter identifies potential impact that could arise from the activities of the project, either during the construction phase or the operation phase. The identified impacts apply to the socioeconomic environment (health, security, economic activities, employment, finances, etc) and on the biophysical environment (fauna, flora, water, air, soil, landscape). All these impacts affect the environment at different degrees, and their duration differs. That is why the impacts are classified differently according to their range in space and time. It is necessary to note that it is not only the project that will have impacts on the environment, but also the environment will have some impacts on the project. These impacts, as said earlier, can be positive or negative, direct or indirect and are also described as such in this study.

4.1. Positive Impacts

Throughout the construction period, local inhabitants of this area stand to benefit in the following ways: **Employment** to the locals with the bulk of the staff recruited from within the area. The developer will commit to a policy that gives priority to the locals in the neighbourhood at the time of employing casual or skilled labour.

Government revenues: revenues shall be collected by Government from the procurement of construction materials and finishes, employees' salaries, such as; VAT from sold products among others.

Project as an income earner to truck and machine owners : Truck and machine owners will earn from renting out their vehicles for transportation of construction material and machines that do various construction maneuvers (excavations, clearing, loading, leveling, using graders, excavators, among others).

Affordability of medical insurance for workers: Employees shall from their pay afford medical insurance (mutuelle de santé) and even pay school fees for their children).

Food Security, poverty alleviation, raise of rural income are other positive impact because the rehabilitation and maintenance of feeder roads will reduce of the overall transportation cost and allow exchange of food and goods between regions. Furthermore farmers will get market for their production and earn a lot of money.

4.2. Negative impacts

As the construction goes on, there will be a number of excavations, soil disturbance and increased traffic around the site as a result of heavy trucks delivering various construction materials and taking away the generated waste including construction debris. All these are likely to pollute and degrade the environment, through mud slides, noise, and dust and air pollution. Impacts resulting from pre-construction and construction activities including site clearance, earthworks, civil works, etc are identified in this section. Pre-construction and construction impacts arise due to dismantling of existing facilities, use of heavy construction machinery, spillage / disposal of construction debris, runoff from construction site, inadequate or inappropriate drainage of the construction site, inadequate safety measures etc. These are some of the direct impacts of construction in the project area.

In addition to the above, there are few indirect impacts or impacts that result from construction activities though not causing the impacts, support to cause the impacts. Some of these impacts include, generation of vectors and vector borne diseases, spread of STD / HIV amongst the construction workers and within the community in the vicinity of construction activities etc. The above environmental impacts are generic in nature occurring along all the project activities where civil works are involved. Impacts that are specific to the construction activities in a project intervention are presented below.

- Construction activities in case of reconstruction of footpaths or construction of new foot paths would cause temporary interruption to traffic and increase of emissions from vehicles due to higher idling times apart from temporary increase of noise levels due to idling and traffic snarls.
- Alternate traffic diversion routes in case of construction of exclusive bus lanes, cycle tracks would cause increase in route lengths and consequently emissions.
- Providing alternate traffic diversion routes also expose previously low traffic routes to higher urban traffic increasing air and noise pollution on these routes.
- Loss of adequate frontage in few cases of foot path construction or provision of additional cycle lanes and bus lanes.
- Relocation of utilities in the pre-construction stage causing temporary disruption to services. These impacts would be more severe in case of construction of exclusive bus lanes and foot paths.
- Safety of pedestrians and traffic in the area is likely to be affected due to the progress of construction activities;
- Safety of labour working in the construction sites as well as working with construction equipments as hot mix plants, batching plants, cranes etc;
- Contamination of runoff from road with construction material as sand / cement / silt from stacked excavated earth;
- Construction activities elevate the air pollution and noise pollution in the project area temporarily. Air pollution is due to generation of noxious gases emanating from asphalt plants, construction equipment, crushers etc., while noise pollution is due to operation of various types of construction equipment;
- Stacking of construction waste causing interruption to traffic and pedestrian movements
- Runoff from staked construction waste entering the water bodies and existing drainage systems causing clogging of drain outlets as well as the drains themselves;

  Tables below summarize the potential environmental and social impact associated with Feeder Roads Development Project in Rwanda.

Table 4: Potential Environmental impacts from proposed feeder roads project

	Potential Impact/ Issue	Environmental Significance
Construction phase		
Air quality	Dust emission from movement of construction trucks and equipment and construction activities like digging etc	Moderate
Solid waste	Health Risks due to Waste Disposal	Moderate
Disruption In Drainage Pattern	The feeder road will traverse about 163 km through hills and wetlands. The roads that intersect drainage basins generally modify the natural flow of surface water by concentrating the flow to certain points and increasing the velocity of flow	Major
Water pollution	Sediment laden runoff from exposed areas mainly due to vegetation clearing during construction; Improper use of waste oils from construction equipment; Improper disposal of sanitary waste from work camps	Moderate; Minor Major
Noise pollution	Movement of heavy vehicles	Minor
Soil erosion	Exposed land surfaces from cleared vegetation may induce erosion from rain events	Moderate
Land slides	Cutting of spoil in hilly areas for road expansion	Major
Loss of biodiversity	The feeder roads alignment from Gisovu-Umisumo-Muzimu- Rangiro passes through the Nyungwe National Park. The first 19.5 km is in a forest of over 60% (.60) density. During field visit the different species of monkey and birds have also been observed. This sub-section of the feeder road may have impact on National Reserve and its flora and fauna. It is estimated that 7.0 ha will be lost on expansion of feeder road by 3.5 m. in addition to that vegetation will be cut due to upgrading and extension of roads	Major
Public safety	Badly managed work activity/ site within community Poor housekeeping leading to stagnant water as breeding grounds for insect vectors (causing malaria etc) Movement of heavy trucks and equipment and road safety	Moderate Moderate Moderate

	Potential Impact/ Issue	Environmental Significance
Land use	Conflicts with incompatible activities and land uses.	Major
Land take	The road will occupy some space in or close to the community. It may either be private or public land for which compensation may be required. Around 140 ha of Land will be required	Major
Raw material usage	PVC pipes, sand, stones from local and external sources (quarries etc).. When queries are poorly run create dust problems, contribute noise pollution, affect safety of their employees, or cause the loss of natural resources	Minor
Occupational health and safety	Hazards from handling heavy equipment, including noise, ergonometric stress, lifting heavy materials etc	Minor
Disposal of waste material, construction spoils, spill of oil and grease from construction machinery.	The use of machinery and heavy truck during construction implies the spill of oil, grease and other chemical/ material on road may pollute the soil and surface and ground water. Such spills shall be closely monitored.	
Socio- economic	Use of local labour and therefore income earning; Destruction of property- farm crops, structures; Community convenience vs Consultant's technical judgement for chosen routes Visual intrusion by heavy trucks and equipment; Disruption of social activities	Moderate Moderate; Minor Minor Minor
Use and Maintenance		
Air pollution	Dust emission from movement of heavy trucks and other vehicles	Moderate
Water quality and pollution	Sediment laden storm runoff	Moderate
Noise pollution	From the movement of heavy vehicles	Minor
Soil erosion	Erosion may be induced or enhanced by vegetation clearing	Moderate;
Water pollution	Inadequate provision and inappropriate method of storm water disposal	Major
Public safety	From road accidents due to poor traffic management	Moderate

	Potential Impact/ Issue	Environmental Significance
Public nuisance and health risks	Public health risks may arise from poor road maintenance; Pot holes and ponding to breed insect vectors of disease eg. Mosquitoes;	Moderate; Moderate
Continued use of facility	Availability of, and accessibility to maintenance funds	Major

Table 5: Potential adverse social impacts from feeder roads construction/rehabilitation

Type of impact	Description of Potential Impact/ Issue	Social Significance
Physical displacement	The Project will not result in the physical displacement of any community, but it may result in a number of households losing residences and/or businesses.	Minor
Employment and loss of livelihood	Some farmers may lose parts of their farmlands if the road is designed to pass through their land. Otherwise, no person will lose employment or livelihood from the project. Rather there will be job opportunities for the youth, local food vendors and communities who will be supplying contractors with sand and stones	Minor
Deprivation of use of land	New feeder roads to be rehabilitated may take up individual or community land	Minor
Loss of crops/ properties	Roads to be rehabilitated have been demarcated already and free from any encumbrance. New roads may interfere with individual or community farm lands and affect crops.	Minor
Impact on vulnerable groups	No negative impacts on vulnerable groups in the society (such as the elderly, disabled, women, children and minority groups) will occur as a result of the proposed development. The Project has no inherent negative impact or bias towards any vulnerable group.	Negligible
Impact on Social and Cultural Structures	The Project will have positive impacts on social and cultural structures as the Project activities will bring together persons from different communities and interact for their common good.	Major
Impact on Cultural Heritage/ Archaeological interest	There are no known sites of significant cultural heritage or archaeological interest in the vicinity of the projects. The risks to cultural heritage would be on buried resources encountered during excavation on land.	Minor
Impacts on Human Health/ Safety and sanitation	(a) Human health and safety could be compromised through road traffic accidents involving construction vehicles/equipment. Occupational injury associated with construction activities will be limited to the work	Minor to Moderate

Type of impact	Description of Potential Impact/ Issue	Social Significance
	force only. (b) Indiscriminate disposal of human waste or free-range defecation by project workers could create environmental health problems for local communities (c) Indiscriminate disposal of litter at the project sites and work camps will create unsightly conditions and pose safety and health risks	Moderate to Major Moderate

4.3. Guidelines for mitigation measures

All significant adverse impacts are considered for mitigation. Specific measures have been suggested in this section when practicable. The mitigation options considered include project modification, provision of alternatives, and pollution control. In cases where the effectiveness of the mitigation is uncertain, monitoring programmes will be introduced. The mitigation measures are applied to significant impacts arising from construction, operation and maintenance aspects of the various subproject projects. The contractor is responsible for determining the cost of mitigation and to include such cost as part of its total cost for executing the works. The Single Project Implementation Unit is therefore required to include the mitigation measures as part of the Request for Proposal (RFP) or tender documents for contractors to enable them quote appropriately. The mitigation measures are presented in the following tables in a descriptive format.

Table 6: Mitigation measures for Environmental impact from feeder roads project

Type of impact	**Description of mitigation measures**
Construction	
Water quality and pollution	• Temporary storage of sanitary and cleaning wastes in containers. Disposal should occur at waste dumps. • No solid waste, fuels or oils should be discharged into water bodies. • Where works take place adjacent to a watercourse, temporary sediment barriers should be installed on slopes to prevent silt from entering the watercourse.

Soil erosion and land slides	• Application of appropriate erosion-protection measures, in particular where it concerns detail designs and works on slopes and in stream beddings. • Road and other works should not be executed under aggressive weather conditions (rains, strong winds).
Public health problems	• Adequate sanitary facilities should be available for workers and open range defecation should not be countenanced. • Contractors should use local labour as much as possible and where available. Imported workers should be provided with proper housing, including sanitary facilities. • Labourers should adhere to basic rules with regard to protection of public health, including most importantly hygiene and disease (HIV) prevention. • All land depressions and disturbed areas at work sites should be filled to avoid water pond which could breed mosquitoes.
Safety of the public	• Contractors will inform local communities early of the construction programme. • Contractors will provide security barriers and signage to ward off inquisitive persons and animals from active work sites.
Loss of biodiversity	Roads alignment will be done by avoiding rare and endemic species where possible and new forest, shrubs and grasses will be planted in other places to compensate the lost forest. The feeder road namely Gisovu – Ruzizi – Cyto - Rangiro is passing through the Nyungwa National Park. The first 20 km are through the forest. The road width is about 3-4 m, additional about 3,5 m will be required from the forest area. This expansion will need additional 7 ha from forest area. Following measures could be adopted to minimize the impact on forest and wildlife. Upgrade the existing ROW available without widening; Rehabilitate double the area (14 ha) in degraded forest for the lost forest; Provide crossings paths for wildlife wherever required; and Review the above feeder road sections during detailed engineering to have alternate route. •

Visual intrusion	• Adequate organisation and maintenance of construction sites through good housekeeping. • Restoration of construction sites directly upon completion of works.
Disturbance and interruption of commercial and social activities	• Contractors to inform the affected communities early of the construction programme. • Limit any temporary interference with private property (e.g. farms) in creating routes. • Relocation (even temporarily) to be avoided as much as possible. • Where private land or other property is affected, or where there is loss of income as a result of project activities, agree on compensation measures with affected persons prior to start of construction. Compensation will occur in accordance with the defined Resettlement Policy Framework. • Interference with the access to and use and local community roads, footpaths should be minimized.
Land take	• Avoidance, as much as possible, the need for resettlement by considering other options • Where resettlement is unavoidable, develop and implement appropriate plans in accordance with the Resettlement Policy Framework developed for the Project.
Occupational health and safety	• The Contractor should protect his workers by ensuring the use of protective equipment and procedures, as well as signage to ensure people and vehicles avoid construction areas.
Queries	To ensure adequate mitigation of potential adverse impacts, only licensed quarrying operations are to be used for material sources. Efforts should be made to use material commonly found along the roadway as a construction material.
Barrow pits	Borrow areas will be located outside the ROW. Borrow areas shall preferably be selected from high land and/or waste land. The excavation and restoration of the borrow areas and their surroundings, in an environmentally sound manner to the satisfaction of the Supervising Engineer, is required before final acceptance and payment under the terms of the contract. All the borrow areas will be properly dressed maintaining drainage to outwards. Topsoil from the opening of borrow pits from agriculture land shall be saved and reused in re-vegetating the pits to the satisfaction of the Engineer/land owner. Additional borrow pits will not be opened without the restoration of those areas no longer in use.

Use and Maintenance	
Air pollution	• Provide speed control ramps where road is close to community to avoid dust emissions • Provide adequate signage for drivers to be aware of ramps ahead
Water quality and pollution	• Regular maintenance of sediment management structure to ensure sediment capture without transport to water courses
Soil erosion	• Application of appropriate erosion-protection measures, in particular where it concerns works on slopes and in stream beddings.
Public safety and nuisance	• Provide speed ramps when close to community with visible road signs
Continued use of facility	• Make provision for funds to maintain roads

Table 7: Mitigating Potential Social Impacts/ Concerns from feeder roads project

Type of impact	Description of mitigation measures
Employment and loss of livelihood	Any affected farmer will be provided with livelihood assistance based on crops to be affected. It should be done in accordance with the Resettlement Policy Framework (RPF) It is expected that the project will further offer opportunities for the youth, women food vendors and income for community members who will supply the contractor with sands and stones
Deprivation of use of land	Land compensation should be based upon current market value of land in the area and in accordance with the resettlement policy framework (RPF).
Loss of crops/ properties	Appropriate compensation should be paid for any damaged or destroyed crops and propriety that belongs to the affected persons. All compensation process should satisfy the RPF developed for the project.
Impacts on Human Health/ Safety and sanitation	• Trucks carrying construction materials such as sand, quarry dust, laterite etc will have the buckets covered with tarpaulin or appropriate polythene material from or to project site • Only road worthy vehicles/trucks should be used • Only experienced drivers/operators should be employed • Except for areas secured by fencing, all active construction areas will be marked with high-visibility tape to reduce the risk accidents involving pedestrians and vehicles. • All open trenches and excavated areas will be backfilled as soon as possible after

	construction has been completed. Access to open trenches and excavated areas will be secured to prevent pedestrians or vehicles from falling in. • Adequate sanitary facilities will be available for workers and open range defecation will not be countenanced. • Construction workers will be provided with and educated to wear suitable Personal Protective Equipment (PPE) including hard hats, overalls, high-visibility vests, safety boots, earplugs, gloves etc. • Construction workers should be educated to adhere to basic rules with regard to protection of public health, including most importantly hygiene and disease (HIV) prevention.

4.4. Public consultation

Project stakeholder consultation is a vital component of the ESMF process. The consultation process focuses on providing information on the proposed project in a manner that can be understood and interpreted by the relevant audience, seeking comment on key issues and concerns, sourcing accurate information, identifying potential impacts and offering the opportunity for alternatives or objections to be raised by the potentially affected parties; nongovernmental organizations, members of the public and other stakeholders. Consultation has also been found to develop a sense of stakeholder ownership of the project and the realization that their concerns are taken seriously, and that the issues they raise, if relevant, will be addressed in the ESMF process and will be considered during project design refinement.

Consultation with all project stakeholders began during the Scoping phase and continues throughout the entire ESMF/ESIA process and will continue into the feeder road rehabilitation/reconstruction and operational phases.

At District level consultations were held districts and project and were attended by project staffs, District and sectors staffs as well as representatives of project affected persons. Interactive discussion was also conducted with District mayors, sectors executive's secretaries, in charge of infrastructure, In charge of Environment and in charge of land administration.

Relevant sub-projects related to each district were introduced to mayors and vice-mayors and to relevant officers (land, environment, agriculture, social affairs). So far, there has been information on the projects in the district and they participated in the selection of the feeder

roads to be rehabilitated. District staff was very interested in details on the size, location, start and due dates for completion of the work, etc. Generally, the interest in the projects is big and positive; interviewees see the possibility of increasing economic activity in the area with the increased transport facilities especially for the creation of small business as well as the chance of an increased living standard.

District staff asked to get more information on the size and exact location of the projects to be able to analyze how many families will be directly affected, which crops will be affected and if expropriations and transfers of families to other areas will be necessary. As the impacts of the projects involve some resettlements, there is a serious task of district officers. However, they need to be informed officially and provided with maps of the exact project locations and affected areas so that they can start informing inhabitants on how they will be affected and asking them for their cooperation.

The project declaration needs to be submitted officially in order to enable the administration to take action. The next step after the official declaration is for district officers together with RTDA staff to inform administration on district, sector, cell and village level about the projects and reach potentially affected persons, who will lose land, crops or built structures.

Affected persons need to be informed before the official inventory of losses (signature of expropriation forms) and the start of the expropriation and compensation procedure to be carried out by the district and sector land offices together with RTDA.

Consultation with Other Relevant Stakeholders

Other relevant stakeholders on national level such as government institutions (RDB, REMA, MINAGRI, MINIRENA, etc.) have been consulted and informed about the project. Consultation needs to be intensified with MININFRA and MINIFIN in order to ensure a timely compensation procedure. A national Validation workshop was also organized by the ministry of Agriculture and Animal Resources to validate the ESMF and RPF. Minutes and participants to this Validation workshop are attached in annex

Consultation with Directly Affected Persons

On account of the location of the projects, which are existing feeder road directly affected people is low. It is limited to those who are affected by resettlement, land acquisition for the and the access roads as well as those affected by land acquisition in widening areas alongside the existing feeder roads. Wherever possible, the impacts have already been minimised during the design phase. Another category of affected persons are water users, who take water for small-scale irrigation from the river or use the water for washing. On account of its high turbidity, the water is rarely used for drinking purposes. Wherever possible, public consultations with potentially affected people were carried out. Generally, people appreciate the project because they expect to gain access to transport through the projects and to improve their living standard and economic opportunities. The impacts are considered as minor. However, people have a right to be informed in advance and to receive just and timely compensation of lost assets, which, in the context of government projects has not always been the case in the past. This project should demonstrate that it can work better. Bellow, are some photos of consultation meetings

Public consultation in Karongi

Public Consultation in Gisagara

Public Consultation in Nyamasheke

Public Consultation in Rwamagana

After the preparation of the report, a validation workshop was oragized on september 27, 2013 at MINAGRI conferance hall. The report was validated by representatives of four District,, Ministries, agencies and private consultant participated in this validation workshop. The list of institutions and participants to the workshop as well as munites of the meeting are attached as annex 12.

National Validation workshop

All stakeholders and communities consulted were much concerned with compensation. Appropriate measures should be put in place to accompany the relocation of concerned farmers

for keeping the good image of the project in the area. Prior to compensation, a detailed valuation of affected assets in the presence of the PAPs and local authorities, should be undertaken and up-to-date value of the affected assets be negotiated with the PAPs and communities for payment. Prior to compensation and resettlement, the PAPs and affected communities should be given free counselling, training on financial management and legal assistance where required. In regards to environmental concerns, consultation meeting revealed that all expected negative impacts, will be addressed during specific EIA studies. Key recommendation from consultation is as follows:

1. During RAP preparation and EIA studies, there should be public consultation and local communities should be full involved in the process;
2. The compensation should be done with reference to updated prices;
3. Roads selection should consider district development plan national and district priority as well as land use master plans;
4. Affected persons and local communities will be given priority in recruitment of manpower and technical staffs.

Table 8: Key outcome of consultation meetings

ISSUE RAISED	RESPONSE
Availability of funds for Resettlement	The government of Rwanda will provide funds for compensation and Project Affected persons will be compensated prior works.
Perceptions and awareness of stakeholders and the public in general, in relation to the proposed project.	Interviewed communities in the project area and others stakeholders including local authorities are aware of the project and the role of the project to increase livelihoods of local communities.
Roles of District in implementation safeguards tools	Districts will participate actively in RAP and EMPs implementation
Expected risks and negative effects of the Project to the local community.	- When there is no people mobilization and capacity building, the project implementation will become difficult. - Loss their own lands for cultivation. - Relocation of people which their houses are within the Roads extension
Anticipated benefits likely to be occurred from the project for stakeholders.	- Increased income for all employed personnel that will contribute to the project implementation. - Agriculture productivity prices will be increased. -Improvement of welfare conditions. - Employment creation. -Access on regional even international market by selling their horticultural products.

The willing to accept and participate in resources mobilization for all involved stakeholders.	- Government, related ministries and institutions to advocate and enhance the technical capacity of all stakeholders. -Local communities to accept and implement project activities.
Raised concerns/complaints from land owners.	- We need to be expropriated for our crops, trees, land and houses. - We need to be compensated for our own lands where the dam will affect. - We need to be informed when construction activities will start for avoiding the destruction of our established crops (not yet harvested). - During compensation period we suggest that project consider the value relating to our assets and comparing to the recent market rate.
Raised the issue of employment, he suggested that the local people should be the first ones to be employed project.	The consultant team explained that local people will be involved in the employment, especially those with skills. But those with no skills will be taken as manpower in the project implementation.
What are the benefit for vulnerable people who cannot work	The project will benefit all people and it needs people with the ability to work on the project as well. The entitlements matrix contains allowances for vulnerable people to nominate a member of their household to take advantage of the project benefits ion their behalf.
Concern about the speed of vehicles, they are noisy and dangerous.	In collaboration with traffic police, traffic signal and Roads speed Humps will be put in these Roads especially near public places like Schools, Hospitals

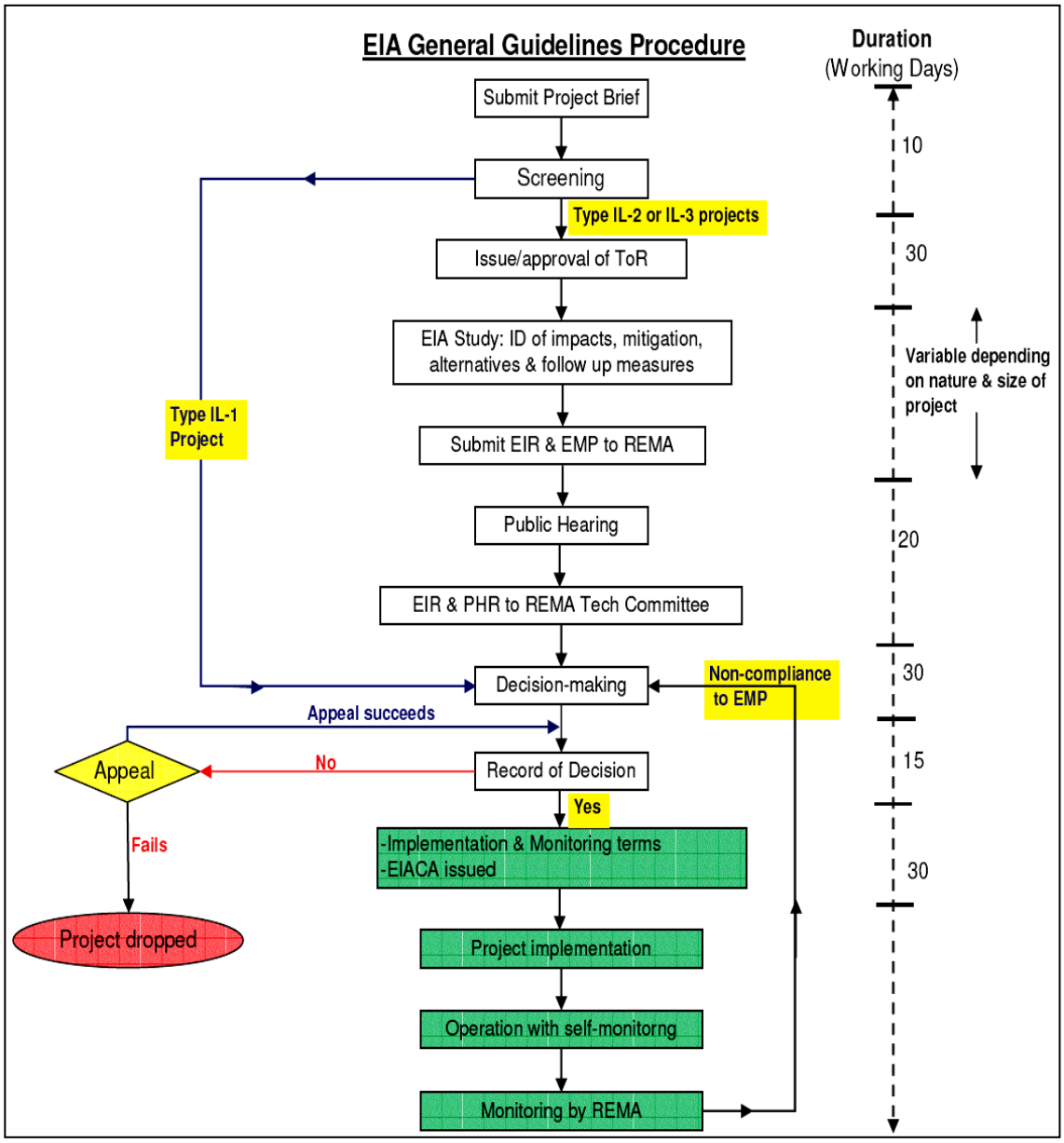
CHAPTER FIVE: ENVIRONMENTAL AND SOCIAL MANAGEMENT PROCESS FOR FEEDER ROADS PROJECT

This chapter of the ESMF describes the process for ensuring that environmental and social concerns are adequately addressed through the institutional arrangements and procedures used by the project for managing the identification, preparation, approval and implementation of subprojects. It sets out the reporting systems and responsibilities of the institutions in implementing the ESMF including the details to be addressed by the ESMF and the specific steps to be undertaken to ensure adherence to the ESMF. Based on the project implementation approach adopted by the project, the project and subproject preparation and reporting will be through the SPIU LWH-RSSP as the focal point for environmental approvals.

5.1. Illustrative Summary of the Roads EIA Process

The EIA for roads projects is a fairly complicated process as it often traverses many administrative and ecosystem boundaries, and is a multi-stakeholder affair. Figure 2 summarises the EIA process in a road scheme.

Figure 3: Graphic Illustration of the EIA process in the Roads Sector



5.2. Project brief preparation and submission

The project brief provides information on the intended project, and provides the basis the screening and on which the Authority designs or approves the EIA Terms of Reference (ToRs). In preparing the project brief, it is important to identify, analyse and include the structure and interests of the key actors in roads development depending the scale i.e. the Ministry responsible for infrastructures (roads); the Ministry responsible for finance, the ministry responsible for

environment; the Authority (REMA) and the concerned Local Governments (where road is to be constructed or pass). Include the donors and development partners.

The EIA team and the proponent should endeavour to simplify technical and engineering information to levels easily comprehensible by non technical managers and decision makers.
The project brief should indeed be brief, no more than 10 pages for the most sophisticated project including any attachments except technical drawings.

The project brief should present arguments of fact justifying the project, including the potential benefits and the analysis of alternatives. Project motivations are important especially to inform the analysis of costs and benefits and in considering trade-offs and future sustainability. Two major questions should be asked and answered in the EIA viz:

i) What are the likely benefits and how will these be spread/ distributed? In other words, who are the beneficiaries?; and secondly
ii) What are the alternatives, and what are the implications in terms of cost, social acceptability, economic and ecological sustainability, and a conclusive argument proving that the selected site and the project design are the best alternative?

An outline of the key information to be presented in the Project brief is attached as Annex 2.

5.3. Screening

5.3.1. What and when is screening?

Basically, Screening answers the question: Which roads projects require an Environmental Impact Study? In other words, it's about determining whether or not a project should be subject to EIA. The term 'Screening' is used to describe the process of ascertaining whether a road scheme requires an EIA. In Rwanda, it is determined by reference to mandatory and discretionary provisions of Article 67 of the Organic Law No. 04/2005 on Environment; the Law on Roads; and the General Guidelines for EIA Applications in Rwanda, 2008; among others.

The overriding consideration in determining whether a road project should be subject to EIA is the likelihood of significant environmental impacts. Significant impacts may arise by virtue of the type of road project, the scale or extent of the road project and the location of the road project in

relation to sensitive ecosystems. In interpreting which projects are likely to have significant environmental effects and for which projects is EIA mandatory or required, the road project categories in section 5.3.2 should be reviewed. For "limited-impact-projects requiring limited environmental analysis, the Ministry or Agency responsible for Roads or the RTB will prepare a screening report;- For major-impact-projects, the RTB or Road Agency should develop terms of reference, send them to the Authority for approval, undertake detailed EIA and obtain a Certificate from the Authority.

5.3.2. Basic EIA Considerations for Road Development Projects

Detailed EIA study is required if the road project considered in its entirety meets any of the following criteria:

a) In case of new construction (new alignment):

- All main highways and national roads
- All roads longer than 5 km and the road reserve is ≥ 15 m and;

b) In case of rehabilitation, upgrading or other improvement:

- Upgrading of roads to provide 4 or more lanes (continuous section of 10 Km or more)
- The road reserve is ≥ 15 m and the length of the road project is > 30 km;
- The road reserve is < 15 m and the length of the road project is > 60 km.

c) For all types of road projects:

- The road project or temporary infrastructure affects partly or completely more than 100 households;
- The road project or temporary infrastructure crosses a river on a distance of 300 m (or less) inside the flood plain;
- The road project or temporary infrastructure is located along an existing river bank at a distance of less than 30 m and on a total length of more than 100 m;
- The road project or temporary infrastructure is located 10 km from or within national parks, conservation areas or forest reserves;
- The road project crosses a sensitive area.

For purposes of these guidelines, 'sensitive areas' are defined as:

- Areas covering more than 10 hectares of wetlands (e.g., floodplain, swamp, or marsh);
- Areas susceptible to erosion, landslides, or any other tectonic movements;

- Areas with unique, rare, endangered, or threatened plants and animal species;
- Areas of unique socio-cultural, archaeological, or scientific interest or areas with potential tourist value;
- Polluted areas;
- Coastal areas (e.g., beach front and mangrove swamps);
- Areas declared as watershed reserves, sacred areas, or hot springs;
- Green belts, parks, or public open spaces in urban areas;
- Burial sites and graves, churches, mosques, or temples;
- Indigenous territories and reserves;
- Areas occupied by vulnerable indigenous populations.

5.3.3. Road Categories and EIA requirements

As emphasised in section 3.2.3, the size (width and length) of road, the type of road (whether asphalt, earth,..), the intention/ objectives of road (the kind of traffic for which it is being designed) and the terrain and land use/ cover in the area where the road is to be constructed, are all important factors that determine the level and depth of EIA. For purposes of EIA, road types are categorised according to 2 sets of criteria as follows:

1. Using **size and administration** criteria, roads are generally categorised into the classes:

i) **National roads** – includes international highways connecting international traffic and national roads connecting different parts of the country, usually from the centre (capital). These roads are generally first class asphalt and may vary in distance and often form part of an international road network or connect to other forms of international transport like airports and railway (when it finally gets to Kigali). They are generally wider and part or, ideally all, of the distance is dual carriage.

ii) Inter-district roads – connect two or more districts within a province. Under decentralisation, the Ministry (MNINFRA) or Roads Agency, through the Provincial Administration, has responsibility for this category of roads.

iii) District / Municipal roads – includes roads within a city, town/ municipality or district established and serviced by the local authority. They may stretch anything up to 100 Km connecting various areas within the district. They are often surface-covered by asphalt (tarmacked) but currently include earth roads for most districts.

iv) Local roads – generally short distance earth roads and often not paved except perhaps city lanes. They are often maintained by local authorities or community efforts, using simple technology characterised by more manual than machinery; less technical design. Roads constructed under the Labour Intensive Public Works Programme (HIMO) and the Community service programme (popularly known as TIG) fall under this category.

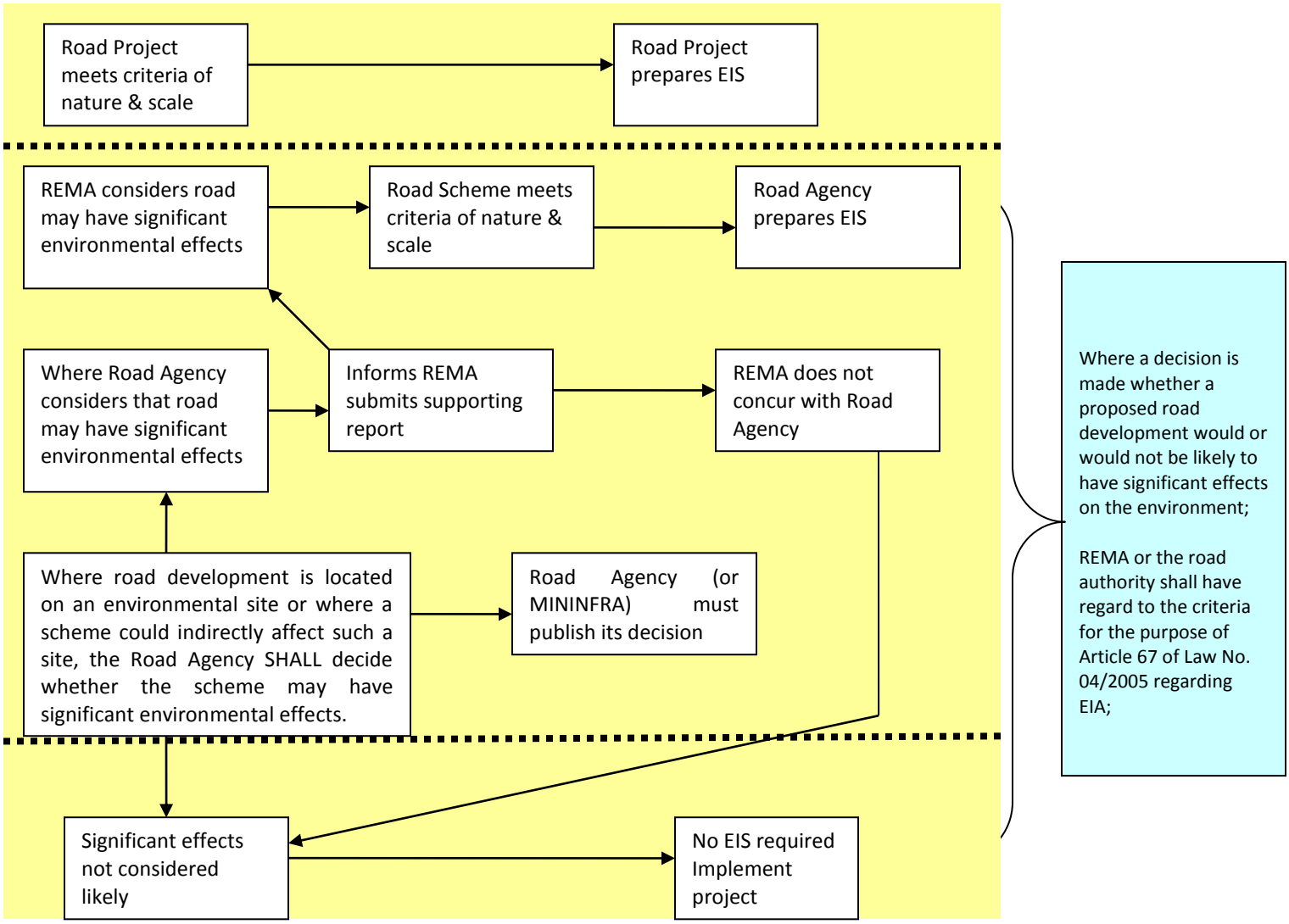
2. **Using nature of the road works** and the conditions, roads are classified as per the following table 1. It should be noted that these guidelines tend to focus more on typical national roads which are the standard[2] for environmental assessment.

Table 9: Road project types and their EIA characteristics

Project category	**Description/**	**Characteristics and implications for EIA**
a)New construction	New construction projects involve building a road section on a new alignment. Major land acquisition is needed. Examples include: ▪ New roads; ▪ Bypasses; ▪ Realignments (changing the route).	Opening new road involves breaking new ground, changing land use and introducing heavy infrastructure where it never existed or resettling people.
b)Re-construction and/or Upgrading	An upgrading project involves changing the road category (e.g., from seasonal road to all-weather road, from secondary to primary, or from gravel to paved). Land acquisition is needed in most cases. Examples include: ▪ Expanding or adding new lanes (e.g. from 2 to 4); ▪ Changing road surface (e.g., from gravel to paved or widening intersections).	Expanding an existing road;, upgrading single to dual carriage road, all may result in destruction of housing hence relocation or resettlement; cutting down forests, and attracting new traffic and economic activity.
c) Improvements	In this category, the road specifications are improved. Most of the work is done on the existing platform or surfaces. Additional land may be needed. Examples include: ▪ Widening lanes and shoulders; tarmac earth/	

Project category	Description/	Characteristics and implications for EIA
	murram roads; ▪ Adding extra lanes in steep inclines; ▪ Improving curves; ▪ Strengthening bridges.	
d) Rehabilitation	Road rehabilitation is a substantial intervention to strengthen a road, repair structural defects, and/or restore the road to its initial condition. It is often carried out after the road has deteriorated to a non-maintainable state. Rehabilitation sometimes includes changes or improvements to previous characteristics/conditions. The work is done on the existing platform/right of way. No additional land is needed. Examples include: ▪ Improving drainage, slopes, embankments, and/or other structures; ▪ Strengthening pavements; ▪ Complete resurfacing; ▪ Recuperating civil works.	
e) Maintenance	Maintenance work consists of routine or periodic works to maintain the road in good working condition. This work is done on the existing platform, for instance: ▪ Routine works: patching potholes and clearing drains; ▪ Periodic works: resurfacing, lane marking, and bridge maintenance.	

Figure 4: The Screening Process for EIA for a Roads Project/ Scheme



5.4. Scoping (Environmental Impact Assessment - Phase 1)

The next stage, after screening and determining that a proposed road scheme should be subject to the EIA process, is to decide on the scope and contents of the EIS. The Road sector legislations, the Organic Law on Environment (No. 04/2005); the Organic Environment Law Legislation and associated Regulations determine a core of key topics that must be covered as the minimum information to be contained in an EIS. These minimum requirements are set out in section 3.3.2. Each Environmental Impact Assessment is a unique interaction of the components of a specific road scheme with a specific set of environmental factors and a unique receiving environment. **Scoping** is the process of specifying the content of an EIS. During scoping, the key issues specific

to a particular road project or a specific receiving environment, that are likely to be significantly impacted during EIA, are identified, and those that are not are eliminated. The process of scoping is examined in more detail in section 5.3.

The aim of scoping is to identify matters that should be covered in the EIS. The process of scoping involves assessing a project's possible impacts and the alternatives that could be addressed, and deciding which impacts are significant. An initial scoping of possible impacts may identify those impacts thought to be potentially significant, those thought to be not significant and those where significance is unclear. Those considered to be not significant are eliminated; those in the uncertain category are added to the initial category of other potentially significant impacts.

For non-major-impact-projects, an Initial Environmental Examination (IEE) is required i.e. if the project:

- Is unlikely to involve setting up temporary infrastructure within the existing road reserve;
- Is unlikely to require any resettlement (within or outside of the road reserve);
- Is unlikely to affect any sensitive area e.g. a habitat of rare or threatened species;
- Is unlikely to require a new borrow-pit or other facilities (e.g., site camps);
- Is unlikely to create any important induced development.

The general information required to be included in the EIS is detailed in Annex 7. Based on this, an EIS should contain descriptions of:

- the proposed road development comprising information on the site, design and size of the proposed road development;
- the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects on the environment;
- the data required to identify and assess the main effects which the proposed road development is likely to have on the environment;
- the main alternatives studied by the road authority concerned and an indication of the main reasons for its choice, taking into account the environmental effects;
- a summary in non-technical language of the above information.

Scoping builds on the minimum requirements, already identified, to determine the issues that are relevant to the particular road project. All parties must be conscious of the need to keep the EIS comprehensive and at the same time as tightly focused as possible. In this regard, the following 3 basic criteria may be useful guides to the scoping process:

- ✓ Use precedence; avoid 're-inventing the wheel'. Where similar projects in similar locations, e.g., in a specific type of habitat, have previously been the subject of a satisfactory EIS then it is reasonable to use such reference for scoping;
- ✓ Use Likely and Significant as criteria for determining the range of impacts and thresholds for data assembly respectively.
- ✓ Maintain the environmental focus. Note that EIA remains a techno-scientific process of identifying and dealing with environmental issues.

5.5. Terms of References for ESIA

The terms of reference (ToRs) shall be developed by the Roads Agency (or the Ministry responsible for Infrastructure) and approved by the Authority before the ESIA process commences. The project brief submitted and any follow-up discussions may be the main basis for modification, approval or rejection of the ToRs. The general format of the terms of reference (ToRs) for a roads scheme is attached as Annex 3.

5.6. ESIA Study

5.6.1. Basic Issues to be included in the Road Project ESIA Study

The main issues to be assessed and described in the ESIA of a typical road development project are outlined as follows:

- Land planning/zoning and detailed location of the land affected by the road scheme;
- Status of the land where the road is proposed to pass (e.g., municipal area, national park or reserve, private property), describe land ownership rights) and expropriation issues;
- Provide spatial information of the Road scheme, including, where possible, recent aerial photographs and topographic maps.
- Technical specifications for the conception of the road and other road infrastructures (e.g., road type, right-of-way, dimension, volume of traffic, and geometry of the road);

- Preliminary surveys, construction activities, and operation (e.g. deforestation, burning, excavation, explosion, digging, filling, extraction of material, deviation and/ or crossing of watercourse, drainage of watercourse, removal of top soil, soil compacting using heavy equipment);
- Temporary infrastructure installations (e.g., access roads, retaining walls, temporary deviation of a watercourse, temporary bridges and culverts, and material storage areas). Include infrastructures such as temporary housing for construction staff;
- Excavation and filling (i.e., estimate the volume, origin, transport, storage and disposal area of excavated material or fill);
- Surface and drainage water (i.e., collection, control, deviation, and confinement);
- Solid and liquid wastes (i.e., volume produced, and storage and disposal areas);
- Material required (i.e., quantity, characteristic, and access);
- Maintenance and operation (i.e., layout of the right-of-way, landscape planning, maintenance of the road reserve, installations, and infrastructure);
- Measures to reduce the use of resources (e.g., reduction at source, more efficient use, or application of new technologies);
- Schedule for the construction activities including duration of the construction work (i.e., start date, end date, and work sequence);
- Employees required and daily work schedule based on construction program;
- Duration of the project and future development phases;
- Cost estimate of the project and the alternatives, including the maintenance costs.

5.6.2. Composition and Qualifications of the ESIA Team of Experts

The type of expertise needed in the ESIA team for roads project will vary with the location and magnitude of the project but should in any case include:

- Civil Engineer, preferably with specialization in roads or highways design, traffic management;
- Hydrogeologists, hydrologists and soil scientists
- Environmental Management Specialist with extensive experience in environmental impact assessment, environmental legislation and hands-on knowledge of biodiversity, land management and aquatic ecosystems;

- Transport and/ or Development Economists particularly those specialised in investment analysis and/ or rural economy
- Sociologist or Social Anthropologist.

The selection of ESIA experts should be guided by the team's overall experience and/ or reputation in ESIA or related assignments; the appropriateness of the team (including balance of professionals/ expertise, allocation of responsibilities), as well as the formal/ academic qualifications including professional affiliation. For Architects, Engineers, Surveyors and Accountants, professional certification or affiliation should be strongly considered for ethical concerns.

5.7. The Environmental and Social Management Plan

An ESMP lays out the mitigation measures to address the environmental and social impacts identified and time frame. The logic is that whenever a significant impact has been identified, the proponent must describe how the impacts will be managed. Once approved, the ESMP set out in this part will be legally binding in terms of the National, international laws, regulations and ministerial instructions on environment, resettlement and compensation. An ESMP should be a realistic plan of action that can be implementable, and not just an impressive set of ideas designed for purposes of getting the ESIA report passed. This report should be furnished with the Authority (REMA); the district authorities where the road will pass/ be constructed; the Agency or Authority responsible for Land registration and management; the Ministry of Finance and Economic Planning, especially the Directorate responsible for investments Coordination; and other relevant stakeholders.

The main issues to consider in the ESMP include the following:

5. **Time frame (duration) and sequencing of mitigating activities**

Every mitigation measure in the ESMP must have a specific plan and timeframe, and there must be logic in the way the activities are sequenced. These dates are estimates and are dependent on the economic and social conditions pertaining from time to time. There might be need for adjustments, which must be agreed with the Authority and the Ministry or Agency responsible for Roads. The plan should spell out the start and duration of construction period; proposed

rehabilitation programme; proposed dates for opening and use of road; and proposed operational programme.

2. Resettlement and Compensation Procedures

When a sub-project is expected to cause physical or economic resettlement, a RAP must be prepared by the project social safeguards team with officers from district land bureau. This will be approved by Project and World Bank. The project Social safeguards team will monitor its implementation and supervision at a national level, while the relevant District Land Bureau will monitor at the local level. The RAP will need to be as detailed as possible in order to guide resettlement of each of the sub-projects. Following the socio-economic census and identification of affected parties, a RAP will be developed. This will be coordinated the project Social safeguards team, District Project Coordination team in full collaboration with the District authorities. It is anticipated that the work will be undertaken by the Project staff. It will be prepared in consultation with affected parties, particularly in relation to the cut-off date for eligibility, disturbances to livelihoods and income-earning activities, methods of valuation, compensation payments, potential assistance and timeframes.

The basic elements of a RAP are outlined in OP4.12 and each element of a RAP is described in this RPF, but more detailed guidelines for preparing a RAP are available on the World Bank's website (www.worldbank.org) or in the World Bank's Involuntary Resettlement Sourcebook.

1. Description of the project and identification of project area;
2. Identification of potential project impacts and affected populations, including alternatives considered to minimize resettlement;
3. Findings of the census and any other socioeconomic studies conducted;
4. Description of resettlement assistance and restoration of-livelihood activities;
5. Eligibility;
6. Valuation of and compensations for losses;
7. Resettlement measures for each category of eligible PAPs, including alternative land sites;
8. Framework for public consultation, participation, and development planning;
9. Description of provisions for redress of grievances;
10. Description of organizational responsibilities;

11. Implementation schedule;
12. Costs and budget showing itemized cost estimates for all resettlement activities including allowances for inflation and other contingencies and timetables for expenditure; and Framework for monitoring, evaluation, and reporting.

Compensation and/or resettlement shall be carried according to the Expropriation and Compensation law N° 01/2007 of 20/01/2007, and the Organic Law on Land (2005), Organic Law on Environment No 04/2005 and any other law relevant to compensation or resettlement issues. The Constitution provides for property ownership rights in its articles 29 and 30. The developer, Rwandan Government, shall provide compensation funds and other resettlement measures to affected parties in accordance with the evaluation and verification of any claim within a specified period.

The Ministry of Agriculture and Animal Resources will disclose final RAPs by making copies available at its head office and in District coordination offices in four Districts. It will also make copies available to the local government's agencies, the Environmental Protection Agency and other stakeholders of the RFRDP. RAPs will also be disclosed to the Ministry websites and Project Websites. The Government of Rwanda will also authorize the World Bank to disclose all RAPs to be prepared under RFRDP electronically through its InfoShop

3. Responsibility for environmental restoration: The Road Agency must submit a rehabilitation bond to the Authority before being cleared to excavate stone, rock, sand or soil quarry site for purposes of construction. This is to guarantee that after the project has been commissioned, the Road Agency (Contractor) fulfils the obligation to rehabilitate the area or provide funding to that effect. This arrangement might, however, require subsidiary legislation building on the Polluter Pays principle enshrined in the Organic Law No. 4/ 2005.

4. Financial provision: the ESMP must include assurances that the MINAGRI has made sufficient financial provision (Budget) to implement the measures indicated in the ESMP.

5.8. *Public Consultation and participatory process/*

The objective of the public consultations with stakeholders is gather information on their concerns, perceptions and fears of the livelihood changes to be brought about as a

result/consequence of Feeder Roads development project in Rwanda. Public consultations were organized as a way to collect first-hand accounts of benefits and grievances from interested/and affected parties Feeder Roads development project.

For each district direct interview and discussion should be organized with purposively selected individuals/stakeholders including the Vice mayor in charge of economic affairs, the vice Mayor in Charge of Social affairs, in charge of infrastructure at district level, District environment officer, Executive Secretary and in charge of resettlement, Environment officer, officer in charge of Social Affairs at sector level (where selected roads pass by), representative of District Consultative council, representative of Sector consultative council, representative of local communities and NGos operating in project area.

The purpose of those consultation meetings should be to gain information on their concerns, perceptions, reactions and experiences of livelihood changes brought as a result/consequence of Feeder Roads development project. Group discussions provide multiple views within a group context and were particularly useful in exploring the level of consensus on a given felt impact.

At National level all stakeholders involved in Roads construction, in environment management and resettlement and local administration should be consulted. Key stakeholders include representative from Ministry of Natural resources, Ministry of agriculture and Animal resources, Ministry of infrastructure, Rwanda Environment Management Authority, Rwanda Development Board, Rwanda Transport Development Agency, Rwanda natural resources Authority, civil society, government projects and private sector among other stakeholders.

Discussion should be conducted around the following points: Awareness, concerns, perceptions and interests of Feeder Roads Development project in Rwanda, Other development projects in transport sector and operating in project area (district); Employment opportunities during the project implementation (Gender, youth and Vulnerable people); Education, health and welfare of the community; Erosion control; Land tenure, conflicts, risks and fears of the community.

CHAPTER SIX: ESMF IMPLEMENTATION, MONITORING AND BUDGET

The Environmental and Social Management framework implementation, monitoring and budgeting process presented under this section considers institutional arrangements required to implement the environmental actions, as well as a presentation of some monitoring indicators and an estimated cost for its implementation. It is worth to note that the real cost of the mitigation measures will be determined during the preparation of Environmental impact assessments (EIA), Environmental Management Plan (EMPs) and Resettlement Action Plans (RAPs) for each sub-projects/district

6.1. ESMF implementation

This section of the ESMF describes the process for ensuring that environmental and social concerns are adequately addressed through the institutional arrangements and procedures used by the project for managing the identification, preparation, approval and implementation of subprojects. This section sets out the reporting systems and responsibilities of the institutions in implementing the ESMF including the details to be addressed by the ESMF and the specific steps to be undertaken to ensure adherence to the ESMF.

6.1.1. Subproject Review

Subprojects and activities will each need to be reviewed for potential environmental and social impacts. The RFRDP is expected to produce net benefits. However certain project activities may have environmental and social impacts that will require mitigation. Although the project can be rate as A under the World Bank Policy, subproject can be rate as category B on Environmental Assessment (OP 4.01), requiring Environmental Assessment. The project brief will be prepared by the project management and sent to RDB/REMA for screening and determination of EIA level

6.1.2. Subproject Screening and Screening Checklist

Subprojects and activities that fall under component 1and 2 will each need to be reviewed for potential environmental and social impacts. Using the screening and review process for subproject identification presented here, will, therefore help determine which of the safeguard policies are triggered and what measures will need to be taken to address the potential adverse impacts. The screening will further ensure that subprojects that may have potential adverse impacts are studied in greater detail including need for subproject specific

EIA and RAPs. Once RDB/REMA has determined the level of EIA, terms of Reference will be prepared and approved by both RDB and World Bank.

6.1.3. Who prepares a screening checklist?

The screening checklist will be prepared by PMU specifically they will be prepared by the Environmental specialist to be hired by project. The screening checklist/form will be submitted to the District Environment Officer for review and approval. If the DEO determines that the impacts will be significant a project report will be required. District Environmental Committees will be required to sign off the screening checklist review forms submitted by the DEO.

The reviewer of the screening checklist has an option to determine whether a more detailed Project Report, based on a field appraisal, is required. A Project Report (will require the DEO to briefly visit the proposed project site, interview the project proponents, and assess the project's impacts in view of their knowledge concerning environmental and social risks and concerns in the area. Project reports will be prepared by the environmental specialist of Project with oversight input from the short term EA advisor. The project reports will be submitted to REMA for final review and approval. In the eventuality that a subproject cannot be approved by REMA on the basis of a Project Report, the proponent will be advised to undertake a simple environmental assessment and prepare an EMP. Project reports will be prepared by independent consultants registered by REMA, who will be paid by the Feeder Roads development project.

6.1.4. Screening Checklist Review Form

Based on this application, the proposal will be reviewed and selection for the next stage of evaluation undertaken. At this selection stage, a first level of environmental screening takes place on the basis of the screening checklist completed by the proponent in this case RFRDP and done by the environmental specialist recommended to be hired as explained above.

The screening checklist will be reviewed using the Review Form, to be completed either by the district environment officer. Where there are social impacts indicated, the form will have to be reviewed in addition by RFRDPs Social Specialist. The form prompts the reviewer to verify the information provided by the proponent, and confirm the best course of action.

The reviewer must consider the nature and location of the project and the anticipated impacts, and based on his/her judgment, confirm or propose the best course of action.

6.1.5. Scoping Report

Firstly, on advice from RDB/REMA, the proponent will prepare a Scoping Report specifying the project's area of influence, the thematic scope and depth of assessments required, the composition of the required EIA team, and the probable budget required to mount the EIA study

6.1.6. ESIA Study

Upon review and approval of the Scoping Report, REMA will advise that an ESIA Study be undertaken. The ESIA Study will entail a systematic investigation of all impact areas as identified in the scoping report, taking care to document the current baseline environment, resource exploitation patterns and ecological pressure points. It is mandatory for the ESIA study to undertake public consultation with all stakeholders in the project's area of influence.

The ESIA Team should note and understand all stakeholder interests so as to cater for them in the ESMP. All accruing information will be written into a Draft ESIA Report prepared in the same format as the project Report and submitted to REMA for review. Upon review of this report, it will be subjected to public review.

6.1.7. Public Review of the ESIA Report

This will entail exposure of all the EIA documents at strategic points within the project's area of influence so as to allow all stakeholders to read and understand how they stand to be affected by the project. The public review has to be advertised twice in local dailies that are widely read in Rwanda, and are often supplemented by public hearings organized by REMA where the project is explained to local stakeholders. Upon expiry of the public review period, the ESIA team will organize the written comments either into an additional chapter or a volume to the ESIA report. This chapter will clearly explain how each of the comments and concerns have been addressed and resolved. This will be issued under the same conditions as is the case of the project report.

6.1.8. Roles and responsibility in ESMF implementation

No	Activity	Responsible institutions
1	Sub-project brief	Rwanda Feeder Roads Management Project
2	Sub-project Screening and screening Checklist	Rwanda Development Board /EIA department
3	Preparation and approval of terms of Reference	Rwanda Development Boards and the World Bank
4	ESIA study	A public consultant hired by MINAGRI
5	Review and approval of ESIA report	- Rwanda Feeder Roads Development Project, - Rwanda Development Board - World Bank

6.2. Monitoring plan of the ESMF

The objective of monitoring is twofold:
(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 RFRDP environmental management; and
(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 worst 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 RFRDP subprojects. Monitoring of environmental and social indicators will be mainstreamed into the overall monitoring and evaluation system for the project. In addition, monitoring of the implementation of this ESMF will be carried out by REMA and the key implementing institutions of RFRDP.

6.2.1. Monitoring of Environmental and Social Indicators

Two opportunities will be taken to build a simple system for the monitoring and evaluation of environmental and social impacts:

6. The Environmental Officer should consider the environmental and social criteria that require measurement (i.e. groundwater levels, levels of income etc); a list of initial proposals is given below;

Table 10: List of initial proposals of monitoring indicator;

Type of impact/ issue	Monitoring indicators
Feeder roads rehabilitation	
Water quality and pollution	Availability and number of temporary storage containers for sanitary and cleaning wastes including waste oils. Design provisions for temporary sediment barriers on slopes to prevent silt from entering the watercourse.
Soil erosion	Constructed appropriate erosion-protection measures.
Public health problems	Availability and number of sanitary facilities for workers. Number of local labourers and other workers Number of environmental and safety meetings with workers
Safety of the public	Number of reported cases of accidents involving general public and related to works.
Land take/ and other resettlement related issues	RAP/ Compensation reports Compensation payments Time taken to pay compensation
Occupational health and safety	Number of recorded accident cases
Air pollution	Speed control ramps with appropriate road signs
Sustainability of provided facility	Length of feeder road constructed Time taken to repair damaged roads Number of reported water related diseases and malaria cases Incidence and severity of flooding
Socio economic	Number of local youth employed Number of women food vendors Number of community members supplying sand and stones

Using this list of criteria, a set of indicators can be integrated into the screening forms used in the project approval process in each district. This will ensure flexibility at the subproject design stage, integration of monitoring considerations throughout the subproject cycle, as well as a participatory approach to environmental and social monitoring.

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 subprojects will take place on a "spot check" basis at it would be impossible to monitor all the subprojects to be financed under the project. 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.

6.2.2. 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:

- Level of decision making of affected people;
- Level of understanding of project impacts and mitigation;
- Effectiveness of local authorities to make decisions;
- Frequency and quality of public meetings;
- Degree of involvement of women or disadvantaged groups in discussions.

6.2.3. 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. A number of indicators would be used in order to determine the status of affected people and their environment (land being used compared to before, how many clean water sources than before, etc). In order to assess whether these goals are met, the RSSP Environmental Specialist with technical support of the Advisor will indicate in the EMP, parameters to be monitored, institute monitoring milestones and provide resources necessary to carry out the monitoring activities.

6.2.4. Monitoring of ESMF Implementation

In addition to the Project Reports and EMPs required by the World Bank and under the Organic Law on Environment, an Annual Audit on ESMF implementation will be prepared by the SPIU, and delivered to REMA and the World Bank. In addition, each subproject that has been subject to an EMP (or RAP) will also be required to produce an annual audit report, for delivery to REMA.

6.2.5. Monitoring Roles and Responsibilities

A) Rwanda Environment Management Authority (REMA)

REMA will play the leading oversight role of monitoring the activities of this project. The 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, perhaps quarterly. They will rely on a bottom up feedback system 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 off, of the mitigation measures.

B) Project support and coordination Unit (SPIU)

The SPIU LWH-RSSP Monitoring and Evaluation Officer will be primarily responsible for ensuring compliance to the monitoring framework. Jointly with the Environmental Officer, they will undertake review of the monitoring reports emanating from the implementing agencies and will then upon approval submit these monitoring reports to REMA and the World Bank. The SPIU will also provide overall coordination in monitoring including training coordinating of training in collection and analysis of monitoring data for data collectors. Critical role of the SPIU will include data analysis, as well as maintenance of management information systems and all baseline data. Lately other than preparation of periodic reports, the SPIU will implement all the necessary modifications in the monitoring framework.

C) RFRDP Implementing Partner Institutions

All the RFRDP implementing institutions identified under this project, will monitor the specific components of project that they are targeted to execute. They include MINIRENA and its Agencies (REMA and RNRA), MINALOC, MININFRA and PSF. The Ministry of Natural Resources (MINIRENA) and its Agencies will support the project in pollution control, land use and acquisition as well as in soil erosion control. The Ministry of Infrastructure (MININFRA) will assist in improving infrastructures and Roads safety. The Ministry of local administration (MINALOC) will assist in mobilizing local communities in the project intervention areas for the adoption and maintenance of RFRDP infrastructure and In resettlement process.

D) Local Governments/District

Local government including district and Sectors are responsible for the overall development of their districts and their functions include: to prepare and submit development plans and budgets to superior institutions for approval and implementation. Therefore, Districts are key partner in the implementation of this ESMF. Through the district environment officer, in

charge of Roads and infrastructure and Monitoring officer, the district will monitor on daily basis the implementation of safeguards measures reflected in the safeguards documents.

E. 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. District Councils will, as part of the planning process, communities who will play a key role in identifying community infrastructure investments, prioritizing project interventions. Community consultation protocols will ensure representation of potentially vulnerable and under-represented groups.

6.2.6. ESMF Disclosure

The World Bank policies require that environmental reports for projects are made available to project affected groups, local NGOs, and the public at large. Public disclosure of EIA documents or environmental reports is also a requirement of Rwanda EIA procedures. However, there is no limitation as to the extent and scope of disclosure. Therefore, the Ministry of Agriculture and Animal Resources will disclosure this ESMF by: a) publication in an government newspaper; b) on its website; c) making copies available at its head office, d) will make copies available to the local government agencies and other stakeholders. The Government of Rwanda will also authorize the World Bank to disclose this ESMF and other Environmental and social safeguards instruments electronically through its Info Shop.

6.2.7. Grievance Redress Mechanism

Grievance procedures will be required to ensure that PAPs are able to lodge complaints or concerns, without cost, and with the assurance of a timely and satisfactory resolution of the issue. The procedures also ensure that the entitlements are effectively transferred to the intended beneficiaries. Stakeholders will be informed of the intention to implement the grievance mechanism, and the procedure will be communicated at the time that the RAPs are finalized. Grievances may arise from members of communities who are dissatisfied with eligibility criteria use, community planning and resettlement measures, actual implementation or compensation.

a) The Process

The overall process of grievance is as follows:

1. During the initial stages of the valuation process, the affected persons will be given copies of grievance procedures as a guide on how to handle the grievances.
2. The process of grievance redress will start with registration of the grievances to be addressed for reference, and to enable progress updates of the cases.
3. The project will use a local mechanism, which includes resettlement committees, peers and local leaders of the affected people. These will ensure equity across cases, eliminate nuisance claims and satisfy legitimate claimants at low cost.
4. The response time will depend on the issue to be addressed but it should be addressed with efficiency.

b) Procedure

The aggrieved person should file his/ her grievance, relating to any issue associated with the resettlement process, compensation and any other environmental and social impact, in writing to District land bureau or Environment department. The grievance note should be signed and dated by the aggrieved person. A selected member of the Committee will act as the District Project Coordination officer (DPCO) who will be the direct liaison with PAPs

The DPCO should be working in collaboration with an independent agency/NGO person ensure objectivity in the grievance process. Where the affected person is unable to write, the local District Project Coordination officer will write the note on the aggrieved person's behalf. Any informal grievances will also be documented by the District Project Coordination officer. The note should be embossed with aggrieved person's thumbprint. A sample grievance form is provided in Annexes. A copy of this completed form should be submitted by the Project Safeguard Specialist who will act as the District Project Coordination officer to SPIU.

The District Project Coordination officer and District land Bureau, environment officer and the sub-project Resettlement and Compensation Committee will consult to determine the validity of claims. If valid, the Committee will notify the complainant and s/he will be assisted. If the grievance relates to valuation of assets, a second or even a third valuation will be undertaken, until it is accepted by both parties. These should be undertaken by separate independent valuers than the person who carried out the initial valuation.

If the aggrieved person does not receive a response or is not satisfied with the outcome within the agreed time, s/he may lodge his/her grievance to the relevant Municipal Administration such as the District Land Bureau, also mandated to help resolve such matters. If requested, or deemed necessary by the subproject Committee, the District Project Coordination officer will assist the aggrieved person in this matter.

The relevant Local Administration will then attempt to resolve the problem (through dialogue and negotiation) within 30 days of the complaint being lodged. If no agreement is reached at this stage, then the complaint is dealt with through the local courts (Abunzi) where possible. Where matters cannot be resolved through local routes, the grievance will be referred to higher authorities at the national level. The subproject Resettlement and Compensation Committee will provide assistance at all stages to the aggrieved person to facilitate resolution of their complaint and ensure that the matter is addressed in the optimal way possible.

c) Grievance Log

The DPCO will ensure that each complaint has an individual reference number, and is appropriately tracked and recorded actions are completed. The log will contain record of the person responsible for an individual complaint, and records dates for the following events:

- Date the complaint was reported;
- Date the Grievance Log was added onto the project database;
- Date information on proposed corrective action sent to complainant (if appropriate);
- The date the complaint was closed out; and
- Date response was sent to complainant.

d) Monitoring Complaints

The District Project Coordination officer will be responsible for:

- Providing the sub-project Resettlement and Compensation Committee with a weekly report detailing the number and status of complaints;
- Any outstanding issues to be addressed; and
- Monthly reports, including analysis of the type of complaints, levels of complaints, actions to reduce complaints and initiator of such action.

6.3. ESMF implementation budget

The Budget for the implementation of this ESMF will be provided by the Government of Rwanda through the Ministry of Agriculture and Animal Resources budget. The cost for mitigation measures will be included in the EIs, EMPs and RAPs. The table below show the estimated cost for the implementation of the ESMF for the proposed Feeder roads Project

Table 11: Estimated budget for the implementation ESMF for RFRDP

Component	**Broad Activities**	**Activities**	**Cost (US$)**	**Notes**
Rehabilitation, upgrading and spot improvement	Roads Rehabilitation and Upgrading	Environmental Impact Assessment	200,000	For each district an EIA studies will be done for a cost of 50,000 $ US Per study. It is envisaged that consultant will work with project environmental officer to undertake those 4 EIAs.
		Environmental Monitoring of ESMPs and related safeguard instruments	80,000	4 environmental audits at a cost of US$ 20,000 per audit will be undertaken throughout the project life
		Awareness creation and Capacity building	20,000	Public awareness creation on the project through Radio, TV discussions, Newspaper adverts.
		Capacity building/improvement for Line Ministries	80,000	Training workshop/seminars on Programme for REMA, project staff in the districts.
Total			380,000	

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ANNEXES

Annex 1: ***checklist for environmental screening for a road scheme/ project***

This checklist is designed to help users decide whether ESIA is required based on the characteristics of a project and its environment. Answer the questions using Y/N for Yes or No.

A. **Brief description of the project:**(E.g. Expansion and Re-construction of Huye – Rusizi Road _		
B. Project Category: B.1: New; B2. Existing (Modification/Expansion; C3 Existing (Modification/ No expansion)		
C. Key screening questions	Yes/No/ Not sure	Is this project likely to result in significant impact?
1. Will construction, operation or decommissioning of the project involve actions which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.?		
2. Will construction or operation of the road use or limit the use of scarce or non renewable natural resources?		
3. Will the construction or operation of the road involve use, storage, transport, handling or production of harmful substances or raise concerns about actual or perceived risks to human health?		
4. Will the construction or operation of the road result in production of solid wastes? At what stage (during construction, operation or decommissioning)?		
5. Will the construction of road release pollutants or any hazardous, toxic, or noxious substances to air?		
6. Will the road cause noise and vibration or release of light, heat energy or electromagnetic radiation?		
7. Will the project lead to risks of contamination of land or water from releases of pollutants onto the ground, surface waters, ground waters, lake or river?		
8. Will there be any risk of accidents during construction or operation of the project which could affect human health or the environment?		
9. Will the road result in social changes e.g. demography, traditional lifestyles, employment?		
10. Are there any other factors that should be considered such as consequential development that could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality?		
11. Are there any areas on/around the location which are protected under international or national or local legislation for the ecological, landscape, cultural or other value, which could be affected by the project?		
12. Are there any other areas on/around the location which are important or sensitive for reasons of their ecology, e.g. wetlands,		

watercourses or other water bodies, mountains, forests or woodlands, which could be affected by the Project?		
13. Are there any areas on/around the location which are used by protected , important or sensitive species of fauna or flora e.g. for breeding, nesting, foraging, resting, overwintering, migration, which could be affected by the project?		
14. Are there any inland, marine, or underground waters on or around the location which could be affected by the project?		
15. Are there any areas or features of high landscape or scenic value on or around the location which could be affected by the project?		
16. Are there any routes or facilities on/around the location used by the public for access to recreation or other facilities, which could be affected by the project?		
17. Are there any transport routes on/around the construction site or surrounding area, which are susceptible to congestion or which cause environmental problems, which could be affected by the project?		
18. Is the project in a location where it is likely to be highly visible to many people?		
19. Are there any areas or features of historic or cultural importance on or around the location which could be affected by the project?		
20. Is the project located in a previously underdeveloped area where there will be loss of Greenfield land?		
21.Are there existing land uses on/around the location e.g. homes, gardens, other private property, industry, commerce, recreation, public open space, community facilities, agriculture, forestry, tourism, mining or quarrying which could be affected by the project?		
22. Are there any plans for future land uses on/around the housing location which could be affected by the project?		
23. Are there any areas on/around the location which are densely populated or built-up, which could be affected by the project?		
24. Are there any areas on/around the location which are occupied by sensitive activities or infrastructures e.g. health centres, schools, places of worship or other community facilities, which could be affected by the project?		
25. Are there any areas on/ around the location which contain important, high quality or scarce resources e.g. ground water, surface waters, forestry, agriculture, fisheries, tourism, minerals, which could be affected by the project?		
26. Are there any areas on/around the location which are already subject to pollution or environmental damage e.g. where existing legal environmental standards are exceeded, which could be affected by the project?		

27. Is the project location susceptible to erosion, earthquakes, subsidence, landslides, flooding, or extreme or adverse climatic conditions e.g. temperature inversions, fog, severe winds, which could result in environmental problems?		
Summarise the Project characteristics justifying the need for EIA:		

Annex 2: KEY INFORMATION TO BE INCLUDED IN THE PROJECT BRIEF

Key information that should appear in the project brief to be submitted to REMA, include:

a) Narrative of who initiated the proposed road project, what are the likely sources of funds (whether conformed or not), the type of funding (whether local or foreign, grants or credit), and the local contribution (including the beneficiary communities especially if a local road);

b) The type/ category of road to be constructed (whether asphalt, earth road,..; whether highway, national or local, inter-district road, access road,);

c) The activities or traffic it will serve – whether international, national, regional or local (within district); and of what economic or social importance;

d) A description of the spatial dimensions including length (in Km), areas where it will pass and which administrative units it passes through;

e) Where the materials for construction will be sourced from- e.g. excavation of materials (soil/ earth, rock, tones, sand,..) from within what distance;

f) Names and addresses of owners of land or property thereof where the road will pass and/ or where construction materials will be extracted. Present a summary description of the soil types and rock structure and grading in terms of suitability for road construction (indicate whether this is based on laboratory analysis or expert opinion);

g) Numbers and if possible, Names and exact addresses of all parties who are likely to be affected by the project and the scale of effect. Provide information about land tenure/ ownership of the area affected(including those with and without title deeds) and whether public, institutional or individual private ownership;

h) Description of the biophysical characteristics (including all species of flora, fauna) and legal status of the areas where the proposed road will be constructed. Indicate where there are physical or natural barriers like escarpments, Rocky Mountains, rivers, natural

forests, permanent swamps. A map (may be a sketch not to exact scale) of the proposed road and shade the areas likely to be affected;

i) Description of the social, cultural and economic activities of the areas where the proposed road will be constructed or will pass (including cultural sites, social investments like schools, human settlements, burial sites/ memorial grounds,..) economic activities like markets, commercial centres, industries or large scale commercial farms and/ or forest plantations; and other surface and aerial infrastructures like airfields, electricity and telecommunication lines, water supply and/ or sewage pipes;

j) Projections of use (traffic volume) and estimated lifetime when the road will be decommissioned or require re-construction;

k) Describe possible alternative sites/ routes considered for the same project and the comparative scores in terms of economic and financial viability, technical feasibility, social acceptability and/ ecological/ environmental sustainability;

l) Overview of the governance arrangements including local administrative structures, policies strategies and plans of Government regarding land and natural resources management, infrastructure development, urban and rural development, conflict management;

m) Opinions of local political and civic leaders if preliminary consultations have been made or better still when and how the developer plans to do it;

n) For existing roads, the condition and history of the road including traffic and developments already realized, level of service, geometry and structural state of the road network, and road safety aspects (e.g. history of accidents) ;

o) Impacts of the proposed project on the traffic on the adjacent road network and on the development of the region;

p) Full contacts of the person responsible for the project (on behalf of the proponent: This is because EIA work involves decision making and accountability and there must be some specific and known person (or designate) to be held accountable. A question arises as to who should submit this brief for a public road. This question makes sense although seemingly obvious because of the tendency for project “owners” i.e. public road agencies to be in the background during the project design and construction, leaving most visible work in the hand of contractors. Well, for Roads under Central Government, the Ministry

responsible for Roads should submit the brief) while for local government roads, it is the District Department of Infrastructure or the Executive Secretary's office.

Annex 3: SAMPLE TORS FOR EIA STUDY FOR ROAD DEVELOPMENT PROJECTS

1. Introduction: State the purpose of the ToRs, identify the road scheme/ project to be assessed, and explain the executing arrangements for the environmental assessment.

2. Background Information: Describe the pertinent background issues. This should include a brief description of the major components of the proposed project, a statement of the need for the project, the objectives it is intended to meet, the implementing agency, a brief history of the project (including alternatives considered), its status and timetable, and a list any associated projects. If there are other projects in progress or planned within the region that may compete for the same resources, they should also be identified here.

3. **Objectives:** Summarize the general scope of the environmental assessment and discuss its timing in relation to the project preparation, design, and execution processes.

4. Study Area: Specify the boundaries of the study area for the assessment (e.g., water catchment area and land use), as well as any adjacent or remote areas that should be considered with respect to specific impacts (temporary infrastructure). The project could have different study areas corresponding to the level of impact.

5. Scope of Work: Define the tasks. In some cases, the tasks to be carried out by a consultant will be known with sufficient certainty to be specified completely in the terms of reference. In other cases, specialised field studies or modelling activities will need to be performed to assess impacts. In that case, the consultant will define particular tasks in more detail after some period of assessment and will submit the detailed scope of work to the contracting agency for approval at a later date. Task 4 in the Scope of Work (below) is an example of the latter.

Task 1: Describe the Proposed Project: Provide a brief description of the relevant parts of the project using maps of appropriate scale where necessary and include the following information:

- Project justification;
- Location; General layout, size, and capacity;
- Pre-construction activities;
- Construction activities;
- Schedule of activities;

- Staffing and support;
- Facilities and services;
- Operation and maintenance activities;
- Required offsite investments;
- Life span.

[Note: specify any other type of information relevant to the description of the project category.]

Task 2: Describe the Environment

Assemble, evaluate, and present baseline data on the relevant environmental characteristics of the study area. Include information on any changes anticipated before the project commences. Modify the list below to show critical project information (e.g., information relevant to the project category and other project-specific information). Avoid compiling irrelevant data. Present environmental characteristics of the study area on a map to facilitate the understanding.

[a] Physical environment: geology; topography; soils; climate and meteorology; ambient air quality; surface and groundwater hydrology; coastal and oceanic parameters; existing sources of air emissions; existing water pollution discharges; and receiving water quality.

[b] Biological environment: flora; fauna; rare or endangered species; ecologically important or sensitive habitats, including parks or reserves, and significant natural sites; species of commercial importance; and species with potential to become nuisances, vectors, or dangerous (of project site and potential area of influence of the project).

[c] Socio-cultural environment: population; land use; planned development activities; community structure; employment; distribution of income, goods and services; recreation; public health; cultural/ historic properties; tribal peoples; and customs, aspirations, and attitudes.

Task 3: Describe and analyse the legislative and regulatory framework and issues

Describe the pertinent regulations and standards at international, national, regional and local levels that govern environmental quality, health and safety, protection of sensitive areas, protection of endangered species, site, and land use control. ToRs should specify those that are known and should require the consultant to investigate for others.

Then review and analyse relevant laws, regulations and guidelines that govern the conduct of the assessment or specify the content of the report, including international treaties, national laws and/ or regulations and/ or guidelines on environmental reviews and impact assessments.

Task 4: Determination of the Potential Impacts of the Proposed Project

Distinguish between positive and negative impacts, direct and indirect impacts, and immediate and long-term impacts. Identify impacts that are unavoidable or irreversible. Wherever possible, describe impacts quantitatively, in terms of the affected environmental components (e.g., area, number) and environmental costs and benefits. Assign economic values when feasible. Characterise the extent and quality of available data, explaining significant information deficiencies and any uncertainties associated with the predicted impacts. If possible, develop ToRs to conduct research to obtain the missing information. Identify the types of special studies likely to be needed for this project category.

The engineering plans should reflect "best practice" in alignment and construction to ensure that potential negative environmental impacts are minimised (e.g., through measures to prevent soil erosion risk, ensure proper drainage, and provide for waste disposal, landfill material, and used oil.

Task 5: Analyse the Alternatives to the Proposed Project

Describe alternatives that were examined in the course of developing the proposed project and identify other alternatives, which would achieve the same objectives. The concept of alternatives extends to site, design, technology selection, construction techniques and phasing, and operating and maintenance procedures. Compare alternatives in terms of potential environmental impacts; capital and operating costs; suitability under local conditions; and institutional, training, and monitoring requirements. When describing the impacts, indicate which are irreversible or unavoidable and which can be mitigated. Try to quantify the costs and benefits of each alternative, incorporating the estimated costs of any associated mitigating measures. Include the 'no project' alternative to demonstrate environmental conditions without the project.

Task 6: Develop the Management Plan to Mitigate Negative Impacts

The Environmental Management Plan focuses on three generic areas: mitigation measures, institutional strengthening and training, and monitoring. The emphasis on each of these areas depends on the context-specific project needs.

Mitigation of environmental impact: Recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels. Quantify the impacts and estimate the costs of the mitigation measures. Consider compensation to affected parties for impacts that 'cannot be mitigated. The plan should include proposed work programs, budget estimates, schedules, staffing and training requirements, and other necessary support services to implement the mitigation measures. Summarize the environmental impacts and mitigation measures using a map at the same scale as that of the road design.

Institutional strengthening and training: Identify institutional needs to implement environmental assessment recommendations. Review the authority and capability of institutions at local, provincial, regional, and national levels and recommend how to strengthen the capacity to implement the environmental management and monitoring plans. The recommendations may cover such diverse topics as new laws and regulations, new agencies or agency functions, inter-sectoral arrangements, management procedures, training, staffing, operation and maintenance training, budgeting, and financial support,

Monitoring: Prepare detailed arrangements to monitor the implementation of mitigation measures and the impacts of the project during construction and operation. Include in the plan an estimate of capital and operating costs and a description of other required inputs (e.g., training and institutional strengthening).

Task 7: Organise and facilitate public consultations, in accordance with the provisions of the General EIA guidelines and other attendant legislation. **Assist in Interagency**

Task 8: Prepare the EIA Report: The EIA report should be concise and limited to significant environmental issues. The main text should focus on findings, conclusions, and recommended actions supported by summaries of the data collected and citations for any references used in interpreting data. Detailed data should be presented in appendices or in a separate volume.

The EIA report according to the outline below:

- Executive Summary;
- Introduction
- Policy, Legal, and Administrative Framework;
- Description of the Proposed Project; "
- Description of the existing Environment;
- Significant Environmental Impacts and Mitigation Measures;

- Analysis of the Alternatives;
- Emergency Plan;
- Environmental Management Plan (including Monitoring Plan);
- Conclusion and recommendation
- List of References;
- Appendices:
    - Terms of reference;
    - List of the EIA team;
    - Records of Interagency and Public/ NGO Communications;
    - Data and Unpublished Reference Documents.

8. Consulting Team: Identify the expertise to include on the EIA team. Environmental assessment requires interdisciplinary analysis. Members of the team could consist of people with the following specializations: rural sociology (in the case of rural roads); human geography; and/or terrestrial ecology (e.g., wildlife, plant, and conservation ecology).

9. Other Information: List data sources, project background reports and studies, relevant publications, and other items to which the consultant's attention should be directed.

ANNEXE 1: CHECKLIST FOR IDENTIFICATION OF ENVIRONMENTAL IMPACTS

1. Resource use and socio-economic impacts

- Is the local population living a basically traditional lifestyle? If so, how will the road affect people's use of local resources?
- Will the project affect resources (e.g., drinking and washing water, marine or land food, fuel, medicines, building materials) that local people take from the natural environment?
- Will there be additional demands on local water supplies or other local resources as a result of the project?
- Will the project restrict people's access to natural resources at any time before, during, or after construction? If so, what plans are there to provide additional resources to meet increased permanent and-temporary needs?
- Will the project affect downstream users of resources, especially water resources? If so, how will those resources be protected?

- Are future natural-resource-use opportunities being cut off? If so, what compensation will be offered?
- Will the project affect land or water use, or require leases, or changes in tenure?
- Will the project require resettlement of any residents?
- Will the project result in construction workers or other people moving into or having access to the area? How many people? How will this affect the availability of local resources?
- Will the project create jobs locally? If so, will this include work for local women?
- Will the project provide safe reliable transport to and from the work place and a safe working environment?
- Can some project outputs be targeted to meet the needs of special groups in the community (e.g., women, youths, old, or infirm people)?
- Is the area culturally or archaeologically sensitive? Are rock shelters or caves present? Is the area named in stories? Is it a burial area?

2. Biophysical/ landscape impacts

- Is the local vegetation mainly forest, mangroves, swamp vegetation, or farmland?
- Will the immediate or 'downstream' effects of the project change the vegetation cover?
- Will the project affect important species, habitats, or ecosystems in the area? Is the area environmentally sensitive or fragile? Check the list of environmentally sensitive environments for Tanzania?
- Can construction areas be located away from sensitive ecosystems and on flat to very-gently-sloping land?
- Are there areas of limestone karst or wetlands? If so, have special consideration been given to their management?
- Will vegetation be removed or any surface left bare? If so, what will be the impact of clearance? Will sediments be prevented from entering streams?
- Will the project affect coastal areas, wetlands, or swamps or have 'downstream' effects?
- Will slope or soil stability be affected by the project (e.g., by using heavy machinery)?
- Will a large land area or a high proportion of a community's land be affected?
- Will quarries or borrow pits-be developed or operated under the project?
- Will the present landscape be altered (e.g., by rock or soil removal, spoil dumping, or timber removal)?

3. For Roads cutting through or passing near forested areas

- Is the local vegetation mainly savannah, savannah woodland, tropical forest, tropical rainforest, or mangrove forest?
- Are there important species, habitats, or ecosystems in the affected area (in the immediate area or off site) or is the area environmentally sensitive or fragile? (Check the environmental database if it is available.)
- Are forested areas used as locally-important hunting areas?
- Will vegetation be removed or any surface left bare? If so, what will be the impact of clearance and how will sediments be prevented from burying vegetation, entering streams, or reaching the shoreline?
- Can construction areas be located so as to avoid disturbing local habitats?
- Will the forest landscape be altered (e.g., by rock or soil removal, spoil dumping, or timber removal)?

4. Impacts on water and air quality

- Will the project generate waste products (including increased sewage or solid wastes)? Will waste products be disposed of locally? How will sewage be treated?
- How will solid waste be treated? How will rock or soil waste be treated? there site-specific-erosion plans and sediment-control plans for the project area?
- Will the project or its waste disposal affect the quality of local streams or the groundwater? What steps are planned to minimise sedimentation in streams and contamination of groundwater?
- Will toxic chemicals (e.g., herbicides, tar, oils, paints, and other hazardous chemicals) be used or disposed of along the route of road construction?
- Will hazardous substances (e.g., large quantities of fuels) be used or stored in the project area? What plans are there to contain these substances? How will fuel, oil, or other hazardous chemicals be delivered, transferred, and stored to prevent leaks from contaminating the soil, streams or beaches?
- Will heavy machinery create dust or noise problems or reduce safety for pedestrians, including children and old people? What plans are there to separate heavy machinery from residential areas or to minimise these impacts?

- Will the batching areas (for concrete or bitumen) produce some waste and spillage? Will these and other construction sites be contained while in use and cleaned and rehabilitated after use?
- Will there be serious dust problems in settled areas during project operation? What measures will be taken to reduce this impact?

5. Environmental health, natural hazards, and construction hazards

- Will there be a water logging problem at the site? What steps will be taken to control disease vectors, especially mosquitoes?
- Is the environment naturally unstable (i.e., in an area prone to coastal erosion, within a zone which would be affected by any rise in sea level, in an area of known earthquake or landslip activity, in an area prone to severe storms, floods, or droughts)? What plans are there to protect the development against these natural hazards?
- Will the presence of the developments-cause- increased environmental damage should a natural hazardous event occur? If so, what environmental protection measures will be implemented?
- Are safety measures in place to protect the workforce? Do all workers have the necessary safety clothing and equipment? Have workers been trained in the use of safety equipment?
- Is there a contingency plan to deal with spills of hazardous chemicals (including oil products) in the project area?
- Are fire-fighting and spill-clean-up materials / chemicals available for use at the site (e.g., water, sand, detergent, acid, or alkali)?
- Are measures being taken to ensure safety to road users after project completion (e.g., speed bumps and adequate road furniture)?
- For Bridge Projects
- In addition to the impacts that are associated with other infrastructure projects, there are special issues to consider for bridges.

  (a) For single span no-pile bridges
- Will bank vegetation, farmland, levee, or straight bank edges be disturbed? Identify bed and bank sediments clearly (e.g., as predominantly clay, sand or gravel).
- Are sediments likely to enter the stream system? Identify control methods.

- Will there be a need for an access road or a temporary diversion? Consider the physical impacts of these structures and propose methods of rehabilitation after use.
- Is there a risk of runoff draining onto farmland, resulting in flooding? If so, this should be addressed in the design.
- Will containment structures block existing watercourses to farmland? If so, the design should address this as well.
- Will there be temporary construction in or diversions of rivers? If so, all possible impacts in terms of bank erosion, sediment accumulation, and subsequent disposal of materials should be considered.

(b) For longer bridges with piling

- Will the bridge pilings cause turbulence, sediment movement, and deposition and consequent bank and streambed erosion? This should be taken' into account in planning.
- Is there a risk of bank instability? For piles near riverbanks, there should be controls on bank stability and an assessment of the upstream and downstream impacts of any proposed river retention structures.
- Will there be any temporary construction works in the river, such as drilling and pile-driving works? If so, what will be the impact of these works on flows and on potential erosion? What steps will be taken to rehabilitate the river section when the works are completed?
- Where are the sources of fill and concrete aggregate? These should also be assessed.
- Are there any issues of noise or safe pedestrian access across the bridge and along the bank?
- What type of wastes will be generated? For construction areas, all wastes should be controlled and contained (including sewage). Subsequently, the waste should be removed to an appropriate disposal site, and the site should be rehabilitated. Methods to deal with any hazardous chemicals (including, fuel-and oils), the management of cement batching plants (including their location), and methods to control noise, dust, and runoff should be addressed.
- What is the main composition of the stream channel (i.e., clay, sand, or gravel)? If it is sandy or gravely, describe methods that will be used to stabilise the bank at the construction site. If it is clayey, explain the methods that will be used to prevent bank erosion and .consequent downstream changes and explain the methods to minimise sediment-induced turbidity.

- Are there habitat corridors along the riverbank that need to be protected? What methods will be used to protect these ecosystems or habitats? What is the land- and water-use in the immediate area? What resources of local or traditional importance will be affected by the construction? What arrangements have or will be made with the local communities to manage the impacts on these resources?

Annex 4: CHECKLIST OF ENVIRONMENTAL MANAGEMENT ACTIVITIES FOR EACH PHASE OF A ROAD SCHEME

PROJECT CYCLE PHASE	ENVIRONMENTAL MANAGEMENT ACTIVITY
Conceptual & Pre-feasibility Phase	• Registering the project: describing and classifying the project • Initial site inspection visit and coordinating with project team members; • Screening projects to identify salient environmental parameters of the proposed road works and to assess the sensitivity of the receiving environment; • Identifying alternatives to the proposed project; • Scoping the environmental study; • Developing terms of references for the EIA.
Feasibility Study/ Preliminary Design Phase	• Obtaining consulting, services for the Environmental Assessment (EIA); • Conducting and overseeing the EA; • Analysing for significant environmental impacts; • Conducting consultations with the public, as required; • Incorporating results of the EIA into the project design and implementation process through mitigation measures; • Designing mitigation measures.
Detailed Design Phase	• Incorporating results of the EIA into the project design and implementation process through mitigation measures; • Submitting the EIA to the regulatory agency for review and approval; • Participating on the Technical Advisory Committee (EIA); • Designing mitigation measures; • Preparing a Resettlement Plan (RP), as needed; • Preparing an Emergency Plan; • Preparing an Environmental Management Plan (EMP); • Preparing a Project Monitoring Program; • Issuing the EIA certificate.
Contract Preparation and Contract Tendering Phase	• Integrating environmental considerations in contractual specifications/ conditions to implement environmental management procedures; • Reviewing tenders; • Performing an assessment of the institutional requirements of the EMP; • Strengthening stakeholder institutional capabilities to perform environmental management activities, as required.

Construction, Supervision, and Monitoring Phase	• Follow-up to ensure that mitigation measures, conditions and specifications are fully implemented during construction; • Monitoring effectiveness of mitigation measures on particular environmental impacts; • Resolving problems as encountered.
Traffic Operation and Road Maintenance Phase	• Evaluating and implementing remedial measures during road operation; • Conducting consultation with key stakeholders; • Incorporating lessons learned into future road project planning.

Annex 5: EVALUATION MATRIX OF IMPACTS FOR DIFFERENT ALTERNATIVES

ENVIRONMENTAL RESOURCES	**PHYSICAL RESOURCES**							**ECOLOGICAL RESOURCES**				**HUMAN AND ECONOMIC DEVELOPMENT**										**QUALITY OF LIFE VALUES**					
PROJECT COMPONENTS	**Reference EIA Sections**																										
	Air		Soil		Water																						
	Air Quality	Noise	Erosion/ Sedimentation	Soil Quality	Surface Water	Surface Water Quality	Groundwater Quality	Terrestrial Vegetation	Aquatic Biology	Fauna	Endangered Species	Population and	Infrastructures	Industries	Agricultural Activities	Fisheries	Institutions	Transportation (roads)	Transportation	Land use planning	Tourism resources	Economic activity	Public health	Recreational resources	Aesthetic values	Historical treasures	Cultural values
Alternative 1																											
Alternative 2																											
Alternative 3																											

NOTES:

a) Numerical value of 3 means MAJOR IMPACT, 2 INTERMEDIATE and 1 MINOR impact.

b) Numbers with NEGATIVE SIGN represent NEGATIVE impacts.

c) Numbers with POSITIVE SIGN represent POSITIVE impacts.

d) Numbers in PLUS and MINUS SIGNS represent combination of POSITIVE and NEGATIVE impacts.

Annex 6: KEY CONTENT TO BE INCLUDED IN THE EIA REPORT

The EIA report should include:

a) who the road will serve – which areas it connects? Does it connect to major city or large administrative centre; major resource like industry or national park or fishery?
b) Estimate of the total annual traffic volume for humans and goods (real or monetary terms);
c) how the local population will benefit e.g. reduced costs and increased efficiency in transport to social centres, increased access to market and information;
d) estimated total number of skilled and unskilled people employed in construction, operation and maintenance of the road and annual indirect jobs (if possible estimate total wages);
e) an estimate of the expenditure to get the project into operation;
f) an estimate of the total population displaced/ re-settled involuntarily and the estimated impact on social stability, community bonding or cultural heritage;
g) an estimate of the total annual expenditure on operation and maintenance;
h) an estimate of the total annual costs incurred or suffered as a result of the road (e.g. total number of accidents, incidences of floods or landslides attributed to the roads, crime cases attributed to the road,..);
i) estimate of the multiplier effect on the local, regional and national economy;
j) estimate of political and socio-cultural returns such as regional integration, reduced local conflicts, directly attributed to the road;

Alternative routes or options

In the EIA process, before an environmental management plan (EMP) is formulated, the Road Agency and their EIA expert teams should have analysed a series of alternatives and considered a few project alternatives and their likely impacts. This should be carefully documented and presented. Alternatives in project development use a series of permutations – which refer to a combination of factors. Such alternatives are likely to include: site locations/ routes; land use options; size of roads (breadth, length, surface thickness,..); types of construction materials; source of construction materials; technology to be used in surveying, site preparation and/ or construction; mode of transportation of materials, personnel; housing sites; waste disposal sites; types and/ or source of power, water, other utilities and/ or their supply routes.

Each of these alternatives should be analysed and scored on pre-set criteria that considers environmental sustainability in relation to other factors including economic viability or benefits, technical feasibility and social/ cultural acceptability.

This is an important piece of information for decision makers because it educates or guides policy makers on how to manage the balance between development and environment.

Description of the environment

The logic here is that before the impacts of a project are estimated, there needs to be thorough understanding of what exists in the pre-project situation. A detailed inventory of biotic and abiotic environment and associated socioeconomic phenomena is important. For road projects, the most important information required is summarized in the proceeding sections:

Description of the Biophysical Environment

Describe the geology and geophysical characteristics:

- Geology and geological formations of the regions, district and project area, and in sufficient detail the geological features – including geological structures, formation and mineralogical characteristics- of the project area right down to sites (routes where the road will pass);
- Surface material and bedrock characteristics of the proposed project area; isolate and categorise overburden material that will be disturbed and which, once disturbed, may adversely affect water quality in the area or neighbourhood;
- Presence of sills and faults that cut across or extend through the planned project area according to the plan/ technical drawings); and alternative route;

Climate: Climatic factors are important features in the planning, design and construction of roads and influence the impact of road projects on the area. Detailed information required includes:

- ✓ a brief and analytical description of the regional and local climate; where possible give recent trends and projections. More specifically,
- ✓ mean monthly and annual rainfall for the site and number of days per month with measurable precipitation. For accuracy purposes, indicate the nearest weather station;
- ✓ maximum rainfall intensities per month – 60 min, 24 hrs, 24hrs/ 50yr and 24hrs/100 yr storm events for the previous 5-10 years;

- ✓ mean monthly, max and mini temperatures for the past 3-5 years;
- ✓ monthly mean wind direction and speed – where appropriate hourly wind direction and speed, with the maximum one minute speed in each hour for the past 3-5 years may be required. If this is hard to get for the specific area, extrapolate from the nearby station;
- ✓ mean monthly evaporation for the previous 5 years;
- ✓ record of incidences of extreme weather conditions – e.g. hail, severe or prolonged drought, high winds, volcanic eruptions or massive landslides, extraordinary heavy rainfall or flooding, for the previous 5 years.

The data from the weather stations may be supplemented by collecting data from communities using techniques such as historical profiling which documents historical events. It is essential that precipitation, temperature and other climatic parameters be presented in form of maps and showing comparisons with other areas of the country.

Topography: The most suitable representation of the topography is the topographical map of the area. This should be current and to appropriate scale. A range of scales should be used depending on the size of the area to be mapped. Scales of 1: 10,000 and 1: 100,000 (for comparison with national level, may be appropriate. Surface contours should be delineated to appropriate intervals and describe topographic patterns and landforms with regard to parameters such as elevation, relief and aspect (slope orientation/direction).

Soil characteristics: A description of the soil types to be disturbed by the road project, their fertility, erodibility and depth should be provided and the soils should be mapped according to a recognized soil classification system.

Land capability and land use before the road project

Land capability: Inventories and evaluations of land capabilities in the proposed area (all land where expropriation is expected for purposes of the road project). For the various land capabilities described, document the area and location of the capacity classes to be disturbed by the project.

Land use within 100 Km (i.e. 50 Km on either side) of the proposed road. Please attach the plan or technical drawings and the map:

- Pre-road design land use;
- Historical production of agriculture, forestry, mining, conservation;

- historical pattern of settlements (although these could appear in the socioeconomic component – just describe the building structures as land use/cover);
- any evidence of misuse e.g. overexploitation, extensive deforestation, abandonment,..;
- existing structures;

Likely post-project land use capability: record any anticipation of land use change;

Ecology: the natural vegetation/ plant life within 100 Km (50 Km on either side) of the proposed road area. Please, not the level of diversity. This should include: dominant species; endangered, rare or threatened species; exotic or invasive species and how they were introduced. Indicate the location and documentation of the area of the various vegetation and forest types that is likely to be directly or indirectly disturbed by the road project. It may be important to prepare and submit a vegetation map for the pre-project area.

Wildlife resources: include parameters as species composition, distribution, abundance; Rare, endangered or threatened species; migration route and staging areas; Habitat evaluation, distribution and utilization; critical habitat; regional and local significance of populations; Sensitivity to disturbance.

Document the type, location, quantity/ numbers and capability of habitat (carrying capacity) that is likely to be disturbed or lost as a result of the project.

Water resources: All water catchment and water courses, streams, rivers and dams; Pans; Position of the estimated maximum flood-line for the 1 in 50 year flood event; Water rights and water use in the affected area. The scope should be up to the point where the affected catchment discharges into the receiving water body. This description should include:

i) A map indicating the catchment boundaries, boundaries of the sub-catchment occupied by the proposed road and the water course which would be followed by water emanating or passing through or under the road or including other water courses likely to be affected).
ii) The mean annual runoff from the catchment upstream, of the point of discharge to the receiving water body and from the sub-catchment upstream (side) of the road.
iii) Normal dry weather flow in the affected watercourse.
iv) Floods peaks and volumes for recurrence intervals of 1:20 and 1: 50 years and the regional maximum flood.

v) For river diversions only.

In addition, an estimate of the contribution of the mean annual runoff normally entering the river over the affected section and the total mean annual runoff entering upstream of the proposed diversion.

Surface water quality: an analysis of surface water samples must be done in sufficient detail the characterize the water quality in the affected water course(s);

Drainage density of areas to be disturbed/ affected: make a record in Kilometres of drainage path per square Kilometre of land area.

Surface water use: identify who uses the surface water along the affected water courses, down to the receiving water body, for what purpose and how much in cubic metres per day.

Ground Water: information required includes:

- Depth of the water table(s);
- Presence of water boreholes and springs and their estimated yields;
- Ground water quality – the EIA experts must analyse water in boreholes and springs in the affected zone so as to be able to characterise the water quality;
- Ground water use- identify, where possible, ground water and spring water users in the study area and the quantities used;
- Ground water zone - Identify the groundwater zone which is likely to be affected the construction or operation of the road. Its importance as national, regional or international resource (e.g. where transboundary water resources are affected) should be described. If available, maps at appropriate scales should be provided indicating the ground water zone boundaries. Stratigraphic sections, in sufficient detail to indicate the conceptual ground water model, the nature and location of significant aquifers and aquacultures and relevant physical properties, should be provided.

Where construction of bridges and roads is likely to result in river diversion, the EIA report should provide an estimate of the contribution of the stream or river to ground water recharge and an estimate of the contribution of ground water to surface water over the diverted section.

Wetlands: information that should be documented include location of wetlands on, along, around or in position to the road; the extent thereof and an indication of the significance in

terms of ecological functioning and socioeconomic services; the biodiversity of the wetlands.

Air Quality: A survey of the air quality and existing sources of air pollution in the area should be made including fallout dust, suspended dust and gaseous emissions (only if the project include a scheduled process as defined in the relevant provisions of Environmental laws).

Noise and Vibration: Existing noise levels on and around the property should be identified as well as potential noise impact sites. If the potential impacts warrant it, pre-road construction noise levels may be required. Similar exercises should be done for vibration.

Archaeological and Cultural Aspects: The EIA team needs to:

- conduct a baseline survey to identify and describe archaeological suites in the study area;
- examine monuments and site records held by National Museums of Rwanda, Monuments (in Huye and elsewhere), Art Galleries and other areas with custody of historical records;
- document and provide sites of recognised archaeological and cultural interest should be described and shown on a plan, which should could be provided.

Sensitive Landscapes and Protected Areas: Sensitive landscapes should be described and if possible, should be indicated on the technical drawings and how they will be protected. Indicate which ones have statutory protection (by local byelaws or national legislation).

Visual Aspects: Describe the visibility of the project site from scenic views, tourist routes and existing residential areas. This should include the visibility of dust and other air-borne pollutants.

Local socioeconomic and cultural characteristics: Include, social and economic infrastructure; people and their and cultures and norms; and the governance features;

- population density, growth and location;
- unemployment estimate for the area
- housing- demand, availability
- Social infrastructure – schools, hospitals, sporting and recreational facilities, shops, police, civil administration

- Water supply/ distribution, access and use
- Power supply
- Telecommunication lines/ use
- demographic and human settlement patterns
- describe old and current road networks, including closed roads and their categories and when they were constructed and de-commissioned;

Description of the Project Alternatives

This section identifies potential alternatives and selects the most optimal alternative(s). Multi-criteria analysis (MCA) may be used to identify, score and rank alternatives in a feasibility study. The feasibility study phase of the project cycle is, thus very important for environmental assessment. Analysis of alternatives very often involves comparing impacts that are not easily quantifiable and/ or those that vary in time and space. Some qualitative measures for analysing biophysical and socio-economic parameters that represent visual or other forms of expressing relative magnitudes may be used e.g., histograms that vary in size or relative scores. A common method is weighting and ranking of the impacts (based on stakeholder perceptions) and then aggregate the resulting scores. Each alternative is then compared on the basis of a single overall measure of impacts.

Proposed Activities and Developments at different levels

The proposed major surface infrastructure required for the road project should be described briefly and illustrated clearly on a topographical map or technical drawings. This should include:

1) Other infrastructure e.g. electric power lines, industries, housing, recreation facilities;
2) Waterways, drainage systems (whether natural or man-made) and water pollution management systems; pollution control dams, etc;
3) Industrial, municipal and other waste disposal sites (landfills, mine residue disposal sites);
4) Production facilities such as mining plant (and direction of location, level and machinery);
5) Sources of water, earth/ soil, stones, sand and other local materials; indicate how pollution of existing natural water sources would be prevented and information on water balance;
6) On-site project offices (administration) and workshops (Project ,

7) Disturbance of water courses: detail how the road layout will disturb the natural water courses. Indicate measures for storm water diversion and how it will protect the road and other infrastructure e.g. residential houses.

Annex 7: FORMAT OF A TYPICAL EMP

An **Emergency Plan** describing any actions foreseen in case of accidents or emergencies and mechanisms to sound the alarm should be included. This emergency plan should, in general, include:

- A description of the different potential situations;
- Pertinent information in case of emergency (e.g. coordinates of the responsible authorities, available equipment, and maps with prioritized routes);
- The command structure in case of an emergency and the mode of communication with the local or regional authorities;
- A list of priority actions in case of emergency (e.g., emergency calls,
- Deviation of the traffic, road signs, and methods of evacuation); Methods to update and reassess the emergency measures.

Operational and Maintenance Phase: Operation here implies the period during which the road is open to traffic. The EMP should describe how the significant impacts, identified in construction phase, will be managed during the period when the road is in use, including what will be done to manage the traffic when undertaking minor repairs. The checklist below should provide the guide:

1. Geology of the area and surrounding parts.
2. Topography: here, a plan of anticipated post-road construction (during operational phase) topography is required.
3. Soils: include depth of soil that will be used and how fertility and erosion will be managed;
4. Land capability: indicate anticipated land capability during post-construction/ operational phase, and a plan to restore or improve land capability;
5. Land use: Include what type of land use is planned.
6. Natural vegetation/ plant life;
7. Animal life: For river diversions, the EIA team should emphasise how aquatic fauna life will be maintained or restored;

8. **Surface water**: water is a known enemy/ destroyer of infrastructure and very often construction work tends to divert or block natural water flow. Indicate the strategies for managing the following:
    i) water balance previously described in parts 3 and 4;
    ii) storm water
    iii) surface rehabilitation (in so far as this affects surface water);
    iv) the legitimate requirements of surface water users on the affected watercourse;
    v) In the case of river of stream flow diversions, the EMP should indicate how the significant impacts identified in parts 3 and 4 will be managed paying particular attention to erosion control, structural stability and surface drainage into and out of the diverted section.
9. **Ground water**: the EMP should: i) indicate the strategies to be undertaken for:
    i) Optimising surface rehabilitation in order to minimise adverse groundwater impacts;
    ii) Meeting the requirements of legitimate ground water users in the affected zone.
    iii) In case of river or stream diversions, the control of seepage into and out of the diverted sections of the river or streams should be highlighted;

10. Air quality: Include an air pollution control plan if the assessment reveals significant impacts on air quality at potential impact sites (e.g. where the road passes through a busy commercial centre).

11. Noise: Include a noise reduction plan if significant impacts are expected at any parts of the road (e.g. junctions), highways may require noise screen, etc.

11. Sensitive landscapes;
12. Visual aspects;
13. Regional socioeconomic structure
14. Who and where are interested and affected parties
15. Submission of information: The proponent will determine which information is required by statutory instruments before submission.
16. **Maintenance**: some of the measures described in this part will require maintenance after they have been implemented and up to the decommissioning period. Again, this

will be site-specific but the proponent should consider where appropriate, the maintenance of at least the following:

a. Rehabilitated land by planting trees, stabilising vegetation on slopes and exposed surfaces. Ensure that use of herbicides and other polluting substances is prohibited.
b. Water pollution control structures - maintaining flow-speed-reduction devices in drains, and remove waste materials;
c. Rehabilitated residue deposits;
d. Bridges and destroyed infrastructure along the road;

17. Climate- including temperature, precipitation, humidity;

In general, the most critical project elements to be monitored include:

- Implementation and effectiveness of erosion and sedimentation control measures (e.g. re-planting of vegetation in disturbed areas or erodible areas);
- Water management issues (e.g., water logging, flooding, and drainage issues);
- Waste disposal issues (e.g., used oil, old tyres, and scrap metal, and the management of liquid and solid wastes from construction camps);
- Management and reclamation of excavation pits and quarries;
- Social impacts (e.g., related to compensation issues, resource use conflicts, and communicable diseases);
- Road safety (e.g., accidents and accident risks during construction);
- Occupational health and safety (e.g., the safe handling, and storage of materials and safe operating procedures). Occupational health and safety risks could be minimized by defining procedures for handling materials, conducting tests, paving, operating heavy equipment, and constructing trenches.
- Timely maintenance to prevent/ minimize road degradation, flooding, road accidents, traffic noise, and landscape degradation;

Monitoring by the Authority and the Roads Agency during construction is important, to ensure strict compliance with contract specifications. The construction site should receive the most attention, but other sites and associated activities must also be considered, such as: Source of water supply; Construction base camp; Quarry and mineral extraction sites; Spoil deposit sites; Asphalt mixing plant and cement batching plant; Construction traffic between all sites; and Occupational health and safety.

Decommissioning phase: This part should briefly describe when and how the road will be decommissioned. Every effort should be made during the life of the road to minimise the cost and amount of work required in this phase. And for a particular road project, what decommissioning means (is it complete and permanent closure; temporary closure for reconstruction or part closure/ limited use for rehabilitation).

The proponent or their EIA experts should address the management of potentially significant impacts identified in earlier project phases. The outline should include:

a) What are the closure objectives? In the rare situation, a road could be closed or redesigned due to developments e.g. population density suddenly increases and a highway is considered risky and unsuitable in an area. Indicate if this was/ wasn't anticipated;
b) Infrastructures areas – demolition or disposal of structures, buildings and bridges, removal of foundations and debris and rehabilitation of the surface subject to the Environmental Law and other relevant legislations at the time.
c) Mines, oils and other material residues deposited in the area
d) Sealing of underground workings and rehabilitation of dangerous excavations
e) Rehabilitation of access roads, bridges, ramps, and restoration of water ways, opening of barricades, etc.
f) Submission of information
g) Maintenance – of aspects of the decommissioned site requires maintenance up to the time that closure is approved, these should be described as well.

Annex 8: GUIDELINES FOR PREPARATION OF ESMPs

1. The EA process involves the identification and development of measures aimed at eliminating, offsetting and/or reducing environmental and social impacts to levels that are acceptable during implementation and operation of the projects. As an integral part of EA, ESMP provides an essential link between the impacts predicted and mitigation measures specified within the EA and implementation and operation activities. The World Bank guidelines state that detailed ESMPs are essential elements for Category „A" projects, but for many Category „B" projects, a simple ESMP will suffice. While there are no standard formats for ESMPs, it is recognized that the format needs to fit the circumstances in which the ESMP is being developed and the requirements, which it is designed to meet. MRB, as the PMT, is preparing a standard ESMP in a format suitable for inclusion as technical

specifications in the contract documents. ESMPs should be prepared after taking into account comments and clearance conditions from both the relevant agency providing environmental clearance and WB. Given below are the important elements that constitute an ESMP.

a. Description of Mitigation Measure

2. Feasible and cost-effective measures to minimize adverse impacts to acceptable levels should be specified with reference to each impact identified. Further, the EMP should provide details on the conditions under which the mitigation measure should be implemented. The EMP should also distinguish between the type of solution proposed (structural and non-structural) and the phase in which it should become operable (design, construction and/or operation). Efforts should also be made to mainstream environmental and social aspects wherever possible.

b. Monitoring program

3. In order to ensure that the proposed mitigation measures have the intended results and comply with national standards and World Bank requirements, an environmental performance monitoring program should be included in the EMP. The monitoring program should give details of the following:

- Monitoring indicators to be measured for evaluating the performance of each mitigation measure (for example: national standards, engineering structures, extent of area replanted, etc).
- Monitoring mechanisms and methodologies
- Monitoring frequency
- Monitory locations

c. Institutional arrangements

4. Institutions/parties responsible for implementing mitigation measures and for monitoring their performance should be clearly identified. Where necessary, mechanisms for institutional coordination should be identified, as often, monitoring tends to involve more than one institution.

d. Implementing schedules

5. Timing, frequency and duration of mitigation measures with links to the overall implementation schedule of the project should be specified.

e. Reporting procedures

6. Feedback mechanisms to inform the relevant parties on the progress and effectiveness of the mitigation measures and monitoring itself should be specified. Guidelines on the type of information wanted and the presentation of feedback information should also be highlighted.

f. Cost estimates and sources of funds

7. Implementation of mitigation measures mentioned in the EMP will involve an initial investment cost as well as recurrent costs. The EMP should include cost estimates f into the sub-project design, bidding and contract documents to ensure that the contractors will comply with the mitigation measures. The costs for implementing the EMP will be included in the sub-project design, as well as in the bidding and contract documents.

Annex 9: CHECKLIST OF POSSIBLE ENVIRONMENTAL AND SOCIAL IMPACTS OF PROJECTS

This Form is to be used by the Safeguard Specialist (SP) or Project Implementation Team (PIT) in Screening Sub-project Applications.

Note: One copy of this form and accompanying documentation to be kept in the PIT office and one copy to be sent to the task team leader of the World Bank.

Name of project:

Number of Sub-project/Road sections:

Proposing Agency:

Road section Location:

Project Objective:

Road section to be rehabilitated:

Estimated Cost:

Proposed Date of Commencement of Work:

Technical Drawing/Specifications Reviewed (circle answer): Yes ____ No____

Community to be included in the road sections:

Relevant details:

Any environmental and social issues:

Area of land needed (if there):

Number of land owners:

Scheme for land acquisition (choose appropriate ones) (if appropriate):

 Land donation
 Cash compensation
 Other scheme

Estimated costs:

Proposed starting date of works:

Designs / plans / specifications reviewed: yes __ no __

Other Comments:

Completed by:

Date:

Received by:

Date:

2. Site Related Issues

S No	Zoning and Land Use Planning	NO /YES
1.	Will the sub-project affect land use zoning and planning or conflict with prevalent land use patterns?	
2.	Will the sub-project involve significant land disturbance or site clearance?	
3.	Will the sub-project land be subject to potential encroachment by urban or industrial use or located in an area intended for urban or industrial development?	
4.	Is the sub-project located in an area susceptible to landslides or erosion?	
5.	Is the sub-project located on prime agricultural land?	

B.	**Utilities and Facilities**	
6.	Will the sub-project require the setting up of ancillary production facilities?	
7.	Will the sub-project require significant levels of accommodation or service amenities to support the workforce during construction (e.g., contractor will need more than 20 workers)?	
C	**Water and Soil Contamination**	
8.	Will the sub-project require large amounts of raw materials or construction materials?	
9.	Will the sub-project generate large amounts of residual wastes, construction material waste or cause soil erosion?	
10.	Will the sub-project result in potential soil or water contamination (e.g., from oil, grease and fuel from equipment yards)?	
11.	Will the sub-project lead to contamination of ground and surface waters by herbicides for vegetation control and chemicals (e.g., calcium chloride) for dust control?	
12.	Will the sub-project lead to an increase in suspended sediments in streams affected by road cut erosion, decline in water quality and increased sedimentation downstream?	
13.	Will the sub-project involve the use of chemicals or solvents?	
14.	Will the sub-project lead to the destruction of vegetation and soil in the right-of-way, borrow pits, waste dumps, and equipment yards?	
15.	Will the sub-project lead to the creation of stagnant water bodies in borrow pits, quarries, etc., encouraging for mosquito breeding and other disease vectors?	
16.	Is the sub-project located in a polluted or contaminated area?	
D.	**Noise and Air Pollution Hazardous Substances**	
17	Will the sub-project increase the levels of harmful air emissions?	
18.	Will the sub-project increase ambient noise levels?	
19.	Will the sub-project involve the storage, handling or transport of hazardous substances?	
E.	**Fauna and Flora**	
20.	Will the sub-project involve the disturbance or modification of existing drainage channels (rivers, canals) or surface water bodies (wetlands, marshes)?	

21.	Will the sub-project lead to the destruction or damage of terrestrial or aquatic ecosystems or endangered species directly or by induced development?	
22.	Will the sub-project lead to the disruption/destruction of wildlife through interruption of migratory routes, disturbance of wildlife habitats, and noise-related problems?	
F.	**Destruction/Disruption of Land and Vegetation**	
23.	Will the sub-project lead to unplanned use of the infrastructure being developed?	
24.	Will the sub-project lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	
25.	Will the sub-project lead to the interruption of subsoil and overland drainage patterns (in areas of cuts and fills)?	
26.	Will the sub-project lead to landslides, slumps, slips and other mass movements in road cuts?	
27.	Will the sub-project lead to erosion of lands below the roadbed receiving concentrated outflow carried by covered or open drains?	
28.	Will the sub-project lead to long-term or semi-permanent destruction of soils in cleared areas not suited for agriculture?	
29.	Will the sub-project lead to health hazards and interference of plant growth adjacent to roads by dust raised and blown by vehicles?	
G.	**Cultural Property**	
30.	Will the sub-project have an impact on archaeological or historical sites, including historic urban areas?	
31.	Will the sub-project have an impact on religious monuments, structures and/or cemeteries?	
32.	Have Chance Finds procedures been prepared for use in the sub-project?	
33.	Is the sub-project located in an area with designated physical cultural resources, such as archaeological, historical and/or religious sites?	
H.	**Expropriation and Social Disturbance**	
34.	Will the sub-project involve land expropriation or demolition of existing structures?	
35.	Will the sub-project lead to induced settlements by workers and others causing social and economic disruption?	
36.	Will the sub-project lead to environmental and social disturbance by	

	construction camps?	
37.	Is the sub-project located in an area from which people have been displaced?	
38.	Is the sub-project located in an area where PAPs are temporarily relocated?	
39.	Is the sub-project located in a densely populated area?	
I.	**Games, reserves and Natural Habitat**	
40.	Does the sub-project require land acquisition? [Note: If YES, fill in the land acquisition form]	
41.	Will the sub-project negatively impact livelihoods? [Note: Describe separately if YES]	
42.	Is the sub-project located in an area with designated natural reserves or protected areas?	
43.	Is the sub-project located in an area with unique natural features?	
44.	Is the sub-project located in an area with endangered or conservation-worthy ecosystems, fauna or flora?	
45.	Is the sub-project located in an area falling within 500 m of natural forests, protected areas, wilderness areas, wetland, biodiversity, critical habitats, or sites of historical or cultural importance?	
46.	Is the sub-project located in an area which would create a barrier for the movement of conservation-worthy wildlife?	
47.	Is the sub-project located close to groundwater sources, surface water bodies, watercourses or wetlands	

Annex 10: SAFEGUARDS PROCEDURES FOR INCLUSION IN THE TECHNICAL SPECIFICATIONS OF CONTRACTS

I. General

1. The Contractor and his employees shall adhere to the mitigation measures set down and take all other measures required by the Engineer to prevent harm, and to minimize the impact of his operations on the environment.

2. The Contractor shall not be permitted to unnecessarily strip clear the right of way. The Contractor shall only clear the minimum width for construction and diversion roads should not be constructed alongside the existing road.

3. Remedial actions which cannot be effectively carried out during construction should be carried out on completion of each Section of the road (earthworks, pavement and drainage) and before issuance of the Taking over certificate:

(a) these sections should be landscaped and any necessary remedial works should be undertaken without delay, including grassing and reforestation;

(b) water courses should be cleared of debris and drains and culverts checked for clear flow paths; and

(c) borrow pits should be dressed as fish ponds, or drained and made safe, as agreed with the land owner.

4. The Contractor shall limit construction works to between 6 am and 7 pm if it is to be carried out in or near residential areas.

5. The Contractor shall avoid the use of heavy or noisy equipment in specified areas at night, or in sensitive areas such as near a hospital.

6. To prevent dust pollution during dry periods, the Contractor shall carry out regular watering of earth and gravel haul roads and shall cover material haulage trucks with tarpaulins to prevent spillage.

II. Transport

7. The Contractor shall use selected routes to the project site, as agreed with the Engineer, and appropriately sized vehicles suitable to the class of road, and shall restrict loads to prevent damage to roads and bridges used for transportation purposes. The Contractor shall be held responsible for any damage caused to the roads and bridges due to the transportation of excessive loads, and shall be required to repair such damage to the approval of the Engineer.

The Contractor shall not use any vehicles, either on or off road with grossly excessive, exhaust or noise emissions. In any built up areas, noise mufflers shall be installed and maintained in good condition on all motorized equipment under the control of the Contractor.

8. Adequate traffic control measures shall be maintained by the Contractor throughout the duration of the Contract and such measures shall be subject to prior approval of the Engineer.

III. Workforce

9. The Contractor should whenever possible locally recruit the majority of the workforce and shall provide appropriate training as necessary.

10. The Contractor shall install and maintain a temporary septic tank system for any residential labor camp and without causing pollution of nearby watercourses.

11. The Contractor shall establish a method and system for storing and disposing of all solid wastes generated by the labor camp and/or base camp.

12. The Contractor shall not allow the use of fuel wood for cooking or heating in any labor camp or base camp and provide alternate facilities using other fuels.

13. The Contractor shall ensure that site offices, depots, asphalt plants and workshops are located in appropriate areas as approved by the Engineer and not within 500 meters of existing residential settlements and not within 1,000 meters for asphalt plants.

14. The Contractor shall ensure that site offices, depots and particularly storage areas for diesel fuel and bitumen and asphalt plants are not located within 500 meters of watercourses, and are operated so that no pollutants enter watercourses, either overland or through groundwater seepage, especially during periods of rain. This will require lubricants to be recycled and a ditch to be constructed around the area with an approved settling pond/oil trap at the outlet.

15. The contractor shall not use fuel wood as a means of heating during the processing or preparation of any materials forming part of the Works.

IV. Quarries and Borrow Pits

16. Operation of a new borrows area, on land, in a river, or in an existing area, shall be subject to prior approval of the Engineer, and the operation shall cease if so instructed by

the Engineer. Borrow pits shall be prohibited where they might interfere with the natural or designed drainage patterns. River locations shall be prohibited if they might undermine or damage the river banks, or carry too much fine material downstream.

17. The Contractor shall ensure that all borrow pits used are left in a trim and tidy condition with stable side slopes, and are drained ensuring that no stagnant water bodies are created which could breed mosquitoes.

18. Rock or gravel taken from a river shall be far enough removed to limit the depth of material removed to one-tenth of the width of the river at any one location, and not to disrupt the river flow, or damage or undermine the river banks.

19. The location of crushing plants shall be subject to the approval of the Engineer, and not be close to environmentally sensitive areas or to existing residential settlements, and shall be operated with approved fitted dust control devices.

V. Earthworks

20. Earthworks shall be properly controlled, especially during the rainy season.

21. The Contractor shall maintain stable cut and fill slopes at all times and cause the least possible disturbance to areas outside the prescribed limits of the work.

22. The Contractor shall complete cut and fill operations to final cross-sections at any one location as soon as possible and preferably in one continuous operation to avoid partially completed earthworks, especially during the rainy season.

23. In order to protect any cut or fill slopes from erosion, in accordance with the drawings, cut off drains and toe-drains shall be provided at the top and bottom of slopes and be planted with grass or other plant cover. Cut off drains should be provided above high cuts to minimize water runoff and slope erosion

24. Any excavated cut or unsuitable material shall be disposed of in designated tipping areas as agreed to by the Engineer.

25. Tips should not be located where they can cause future slides, interfere with agricultural land or any other properties, or cause soil from the dump to be washed into

any watercourse. Drains may need to be dug within and around the tips, as directed by the Engineer.

VI. Historical and Archaeological Sites

26. If the Contractor discovers archaeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

(i) Stop the construction activities in the area of the chance find.

(ii) Delineate the discovered site or area.

(iii)Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be present until the responsible local authorities and the Ministry of Culture, Youth and Sports take over.

(iv) Notify the supervisory Engineer who in turn will notify the responsible local authorities and the Ministry of Culture, Youth and Sports immediately (less than 24 hours).

(v) Contact the responsible local authorities and the Ministry of Culture, Youth and Sports who would be in charge of protecting and preserving the site before deciding on the proper procedures to be carried out. This would require a preliminary evaluation of the findings to be performed by the archeologists of the relevant Ministry Culture, Youth and Sports (within 72 hours). The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage, including the aesthetic, historic, scientific or research, social and economic values.

(vi) Ensure that decisions on how to handle the finding be taken by the responsible authorities and the Ministry of Culture, Youth and Sports. This could include changes in the layout (such as when the finding is an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage.

(vii) Implementation for the authority decision concerning the management of the finding shall be communicated in writing by the Ministry of Culture, Youth and Sports; and

(viii) Construction work will resume only after authorization is given by the responsible local authorities and the Ministry of Culture, Youth and Sports concerning the safeguard of the heritage.

VII. Disposal of Construction and Vehicle Waste

27. Debris generated due to the dismantling of the existing structures shall be suitably reused, to the extent feasible, in the proposed construction (e.g. as fill materials for embankments). The disposal of remaining debris shall be carried out only at sites identified and approved by the project engineer. The contractor should ensure that these sites: (i) are not located within designated forest areas; (ii) do not impact natural drainage courses; and (iii) do not impact endangered/rare flora. Under no circumstances shall the contractor dispose of any material in environmentally sensitive areas.

28. In the event any debris or silt from the sites is deposited on adjacent land, the Contractor shall immediately remove such, debris or silt and restore the affected area to its original state to the satisfaction of the Supervisor/Engineer.

29. Bentonite slurry or similar debris generated from pile driving or other construction activities shall be disposed of to avoid overflow into the surface water bodies or form mud puddles in the area.

30. All arrangements for transportation during construction including provision, maintenance, dismantling and clearing debris, where necessary, will be considered incidental to the work and should be planned and implemented by the contractor as approved and directed by the Engineer.

31. Vehicle/machinery and equipment operations, maintenance and refueling shall be carried out to avoid spillage of fuels and lubricants and ground contamination. An oil interceptor will be provided for wash down and refueling areas. Fuel storage shall be located in proper bounded areas.

32. All spills and collected petroleum products shall be disposed of in accordance with standard environmental procedures/guidelines. Fuel storage and refilling areas shall be located at least 300m from all cross drainage structures and important water bodies or as directed by the Engineer.

Annex 11: KEY INSTITUTIONS IN EIA FOR ROAD DEVELOPMENT PROJECTS IN RWANDA

No	Institution/ Agency	Key interests and responsibilities
1	Ministry of Infrastructures (MININFRA)	Formulating policies, laws and standards for roads development in the country. Is also responsible for national roads, highways and bridges and overseeing local roads development.
2	Road Maintenance Fund (Font d'Entretien Routier (FER))	Mobilising financing and technical resources for regular maintenance of highways and other national roads. Ensuring that road infrastructures are maintained to the required standards through proper procurement.
3	Rwanda Transport Board (RTB)	Oversees the implementation of the transport policy, including management of roads; initiating public investment in transport services like licensing of public transport service providers; rail, water and air transport.
4	Ministry of Natural Resources (MINIRENA)	Formulating policies, laws and standards for land administration and land use planning; environmental protection and natural resources utilisation. In roads development, a major responsibility is to determine compensation and provide land for re-settlement of displaced people.
5	Ministry of Local Government (MINALOC).	National policies and laws on decentralisation and local governance – supervising local government authorities which are responsible for district, local and community roads.
6	Rwanda Environmental Management Authority (REMA)	National authority responsible for environmental regulations and standards setting, and overseeing the implementation of EIA guidelines. REMA will also be responsible for mobilising, educating and sensitising stakeholders to follow or participate in the implementation of the EIA guidelines.
7	Ministry of Commerce, Trade, Industry, Cooperatives and Tourism (MINICOM)	Policies and laws relating to licensing of commercial and industrial activities including premises.
8	City Council of Kigali	Responsible for design and implementation of all urban infrastructures in the city, including inter-district roads; Providing and enforcing guidelines for construction work within the city of Kigali city.
9	District Local Governments	Districts are responsible for planning and execution of road construction and maintenance within the district,

10	Rwanda Bureau of Standards (RBS)	Imposition of regulations and standards on public utilities associated with housing/ building i.e. water, electricity, and telecommunications. This includes the quality of service provision including tariff setting.
11	National Land Centre (NLC)	Land registration and land use planning throughout the country. Compensation and resettlement will depend on legal ownership.
12	Electrogaz	National agency responsible for provision of water and electricity utilities. In road development, Electrogaz' major stake in roads development is servicing road construction with water and power. It also has a major stake to reach its facilities.
13	Rwanda Investment and Export Promotion Agency (RIEPA)	Investment advisory and support especially for construction companies, but is also interested in roads a major infrastructure in attracting investors.
14	Rwanda National Police	The National police have statutory responsibility for law enforcement including ensuring that road traffic laws are observed; and therefore all roads are constructed in conform to appropriate legislations. They also have to provide security to road construction facilities.
15	Private Sector Federation	Mobilising and sensitising members involved in the construction and real estate sector to appreciate and follow the Housing EIA guidelines.
16	Common Development Fund (CDF)	Basket Fund for local development projects including roads, markets and other infrastructures. It's managed under the Ministry of Local Government.
17	ASSETP (Public Works Contract Management Agency)	Planning, design and supervision of roads and other large scale infrastructures.
18	PIGU, Projet d'Infrastructure et de gestion urbain)	World Bank-funded Project developing institutional capacity and supporting physical investments in the planning and construction of urban roads and drainage infrastructure in Kigali city and other selected urban areas. The project has, among others, provided some training in SEA and EIA.
19	Travaux des Interets General (TIG) Secretariat	TIG refers to Community Work as Alternative to Imprisonment

20	Major Road Construction companies	Service providers/ contractors who undertake actual construction and/ or deal in real estate. These are the direct implementers of the laws & regulations/ guidelines relating housing EIA.
21	Civil society (including Private sector & NGOs)	Civil society and interested private entities have advocacy roles to ensure that all actors follow the housing EIA guidelines and other building best practices.
21	International Financing Agencies (especially the European Union, World Bank & African Development Bank)	Loan and grant financing for road construction. These have their own EIA procedures and guidelines but they need to be compatible with national guidelines and regulations.

Annex12:

MINUTES OF VALIDATION WORKSHOP OF RESETTLEMENT POLICY FRAMEWORK AND ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK FOR RWANDA FEEDER ROADS DEVELOPMENT PROJECT

MINAGRI, September 27, 2013

Introduction

As the preparation of the Feeder Roads Development Project in Rwanda is under way, World Bank safeguards Policy as well as Rwandan regulations requires the Government of Rwanda to prepare a Resettlement Policy Framework (RPF) and Environmental and Social Management framework (ESMF) which establishes mechanisms to determine and assess future environmental and resettlement implications of the planned investments/activities proposed under RFRDP.

In this regards, the Ministry of Agriculture and Animal Resources (MINAGRI), the agency responsible for implementing the Feeder Roads Development Project for in Nyamasheke, Karongi, Gisagara and Rwamagana districts, in close collaboration with the Ministry of Infrastructure, has developed a RPF and an ESMF for the feeder Roads project.

The World Bank Safeguards policies and national regulations require a full involvement of all stakeholders and affected persons in the development of these safeguards tools. It's in this framework and in addition to the public consultations conducted in four districts; a national validation workshop was organized by MINAGRI on September 27, 2013.

2. Agenda of Workshop

The workshop was organized in three items:

1. Brief presentation of Rwanda Feeder Roads development Project
2. Presentation and discussion of ESMF
3. Presentation and discussion of RPF
4. Formulation of Recommendations

3. Objectives of Workshop

The main objective of the Workshop was to validate the two policy document, Environmental and Social Management Framework and Resettlement Policy Framework. It was also an opportunity of getting final comments from different experts.

3. Participants to the Workshop

Were present in the workshop (cfr annex for details) :

- District representative(in charge of land, in charge of environment and in charge of infrastructure)
- Representatives of Ministry of Infrastructure
- Representatives of Ministry of natural Resources
- Representatives of Rwanda Environment management Authority
- Representatives of Rwanda Natural Resources Authority
- Representative of Rwanda Transport Development Agency
- Private consultants
- MINAGRI/LWH_RSSP safeguards team

5. Outcomes of the Workshop

In general participants appreciate the two policy documents and provide comments and recommendation to be considered in final document. Key comments and recommendations are presented in the table below.

No	Item	Recommendation
1	Implementation arrangement	Creation of technical committee at national and district level to for implementation and monitoring of ESMF &RPF. This should be reflected in all project document
2	Ecosystem management	To consider fragile ecosystem such us forest and wetland I Specific EIA studies
3	Land and Soil	The EIA studies should provides appropriate mitigation measures to avoid landslides and soil erosion
4	Resettlement measures	MINAGRI should speed up census of assets and development of RAP to avoid delays in compensation and project implementation
		Funds for compensation should made available to the project and given to PAPs prior to works
5		Valuation off assets should be done by experts in accordance to national regulation and market value. Land bureau at district level and projects will spearhead the process
6	District involvement	For ownership and participation, districts should be involved in all steps of the project including tender process, design studies for selected Roads and project implementation
7	Stakeholders	In addition to MINIRENA, MINENFRA, MINAGRI,MINECOFIN, RTDA, REMA, RANRA, DISTRICTs, RDB, participant suggested to add on MINALOC and Rwanda Housing Authority (RHA) and RBS for standards
	Improvement	

	of document	
8	**RFP**	To use current regulations gazetted like land laws and different ministerial order approved in 2013
		To remove different commissions and committees that are not provided in new land law
	ESMF	To use current regulations gazetted like land laws and different ministerial order approved in 2013
		To add details on definitions
		To clarify responsibilities of different stakeholders
		To define parameters and standards in Monitoring plan
		To add ecologist in terms of reference of EIA studies and details in TORs as much as possible

Prepared by

Mr. Theogene HABAKUBAHO
Social safeguards/RSSP-LWH

Approved by

Mr. Esdras BYIRINGIR0
Chairperson and
Coordinator Representative

List of Participant to the workshop (see attached list)

Ministry of Agriculture and Animal Resources/SPIU RSSP-LWH

Validation workshop attendance list

No	Names	Institutions	Position	Contacts	Signature
1	Umuringa. K. Chantal	RSSP / LWH	Social Safeguard Officer	Chantalkay@rssp.gov.rw	
2	NSHUTIYAYEZU Samuel	ALN Consultants	Ecologist	nshutiyayezu@gmail.com	
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4	BIZIMANA Jacques	ALN Consultants	IT. Eng	jacques.jabon@Gmail.com	
5	RUTEBUKA Balinda	ALN Consultant	Sociologist	Smeyehar@yahoo.fr	
6	Karangwa James	MININFRA	Transport M&E Specialist	James.karangwa@mininfra.gov.rw	
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24	HABAKURAMA Theogene	LWH/RSSP	Safeguard specialist	htheogene@yahoo.fr	[signature]
25					

Annex 13: LIST OF CONSULTED PERSONS during ESMF preparation

1. Nyamasheke District

No	Names	Institution/Position
1	Habyarimana Jean Baptiste	Mayor of the district
2	Bahizi Charles	Vice mayor In charge of Economic Affaires
3	Ndagijimana Jean Pierre	District Executive secretary
4	Faida Felicien	District officer in Charge of Infrastructure
5	Sengambi Albert	District agronomist
6.	Iyakaremye Evelyne	District Environment Officer
7	Ntirenganya jean de Dieu	Local community representative
8	Batamuriza Dorothee	Project coordinator/Nyamasheke District
9	Nzabandora Emmanuel	Project affected persons representative
10	Kwihangana Amoni	Project affected persons representative
11	Ngamije Ezekiel	Project affected persons representative
12	Kampire Jeanne d'Arc	Project affected persons representative
13	Maniraguha Claudine	Project affected persons representative
14	Yangeneye Jeanne	Project affected persons representative
15	Ingabire Velentine	Project affected persons representative
16	Bandora Gratien	Project affected persons representative
17	Niyitegeka Jerome	Executive Secretary, Karengera sector
18	Mukaremera marie	Secretaire comptable , Kagano sector
19	Mukamugema Odette	Etat Civile , Kagano sector
20	Mugabo Francois	Etat Civile , Kanjongo sector
21	Nkinzingabo Patrice	Executive Secretary , Cyato sector
22	Habarurema Cyprien	Etat Civile,Cyato sector
23	Banziririki Francis Xavier	Etat Civile, Rango Sector
24	Bayisenge Joseph	Agronome, macuba Sector
25	Nyirabashyirahamwe Marie	Mahember Sector Education Officer
26	Bizuru Isaac	Executive Secretary , Kilimbi sector
27	Nkerabigwi John	Etat Civile , Karambi sector
28	Uzayisenge Regina	Secretaire Comptable , Karmbi sector
29	Kamari Aime Fabien	Executive Secretary , Shangi sector
30	Mukamuhire Patricia	Sector Education Officer, Shangi sector

2. Rwamagana District

No	Names	Institution/Position
1	MUNYANGABE Theogene	In charge of Community/Rwamagana district
2	MUTIGANDA Fransisca	Vice Mayor of Economic development
3	RWAKAYIGAMBA	Environmental Officer

4	RUBANJI Innocent	Land Survey and GIS
5	KARINGANIRE Daniel	Executive secretary
6	MBABAZI Jane	Social Affaires
7	RWAKAYIGAMBA	Environmental Officer
8	RUBANJI Innocent	Land Survey and GIS
9	SEMUKANYA Benoit	Agriculture and Natural Resources Officer
10	AKIMANA Alice	Social Affaires
11	MUNYARUKUMBUZI Gratien	Project affected persons Representative
12	TWIZEYIMANA Andree	Project affected persons Representative
14	MBONIGABA Aloys	Project affected persons Representative
15	TWAGIRUMUKOZA Juvens	Project affected persons Representative
16	HAVUGIMANA Eugene	Project affected persons Representative
17	NIYITEGEKA Theogene	Project affected persons Representative
18	RUTIHONGA Dominique	Project affected persons Representative
19	NYANDWI Charles	Project affected persons Representative
20	NDEREYIMANA Felicien	Project affected persons Representative
20	BARAYAVUGA J.Claude	Project affected persons Representative
22	NZAKIRISHAKA Augustin	Project affected persons Representative
23	NGENZAMAGURU Erneste	Project affected persons Representative
24	HABDOU Jean Claude	Project affected persons Representative
25	HAJABAGIZI Herman	Project affected persons Representative
26	MUTABAZI Vedaste	Project affected persons Representative

3. Karongi district

	Name	**Organization/Position**
1	Mukabalisa Simbi Dative	V/maire in charge of social affairs
2	Safari Xavier	District Agronomist
3	Muhoza Claude	Agronomist/rubengera
4	Niyondagije Josue	Officer in charge of social affairs/ Rubengera
5	Bihoriki Narcisse	Executive Secretary/Rugabano sector
6	NYIRASHYIRAMBERE Jeanette	Land bureau officer
8	NIYIGENA Eric	District Environment Officer
9	Nyirabuyange bonifilda	Project affected persons Representative
10	Kayumba Pierre	Project affected persons Representative
11	Nsengiyumva Nasti	Project affected persons Representative
12	Ingabire Jean Pierre	Project affected persons Representative
13	Mutebutsi alexis	Legal affairs, Gitesi sector
14	Niyonzima Fidel	Etat Civile Gitesi
15	Habimana Jean Nepo	In charge of social affairs Mutuntu sector
16	Niyibizi emmanuel	Legal affaires

17	Habikumutima Ananie	Legal affaires
18	Uwamariya Claudine	Legal affaires
19	Uwimana Bellancille	Agronomist and natural resources managment
20	Niyihakana Thomas	Executive Secretary
21	Karangwa Samuel	Agronomist
22	Ruzingana Emmanuel	Executive Secretary
23	Torero Jean de dieu	Social affaires
24	Mazimpaka Emmanuel	Agronomist

4. Gisagara district

	Name	**Organization/Position**
1	Karekezi Leandre	Mayor/Gisagara District
2	Hategekimana Hesron	VM in charge of economic affaires
3	Musafiri Jean Piere	Director Land Bureau
4	Rusibirana JMV	Project Coordinator /Gisagara-Huye
5	Ndimurwango Jean Bosco	Director planning
6	Munyenganizi Aimable	In charge of infrastructure Gisagara
8	Ndagijimana Gaspard	Project Affected person representative
9	Ntiyamira David	Executive Secretary /Ndora Sector
10	Kayumba Ignace	Executive Secretary /Musha Sector
11	Nyiranteziryayo	Project Affected person representative
12	Sibagirirwa	Project Affected person representative
13	Uwiragiye Esperence	Project Affected person representative
14	Kayijura Donatien	Project Affected person representative
15	Ntiyamirira David	Executive Secretary , Ndora sector
16	Kimonyo Innocent	Executuve Secretary , Kibilizi Sector
17	Mukangarambe Christine	Project Affected person representative
18	Nyirazigama Epiphanie	Project Affected person representative
19	Rutaburingoga Jerome	Executive Secretary , Kansi sector
20	Renzaho J.Damascene	Executive Secretary , Kigembe sector
21	Umuraza Marie Clare	Social Affairs , Mukindo sector
22	Bigirimana Augustin	Executive Secretary, Mukindo Sector
23	Iyamuremye Pacifique	Social Affairs , Mukindo sector
24	Dusabeyezu Bacillie	Project Affected person representative
25	Nderabakura Vincent	Project Affected person representative
26	Nyabyenda J. Damascene	Project Affected person representative
27	Mazimpaka J. Baptiste	Project Affected person representative
28	Bakunduwejeje J. Baptiste	Project Affected person representative
29	Nkurunziza Ange	Etat Civile,Mukindo sector
30	Bizimana John	Sector Education Officer, Muganza sector

31	Habarurema David	Sector Education Officer , Muganza sector
32	Uwimana Colletta	Etat Civile Gishubi sector
33	Uwizeyimana Charles Lwanga	Social Affairs , Musha sector
34	Nyirimanzi Gilbert	Executive Secretary , mamba sector
35	Niyongira Francis Xavier	Etat Civile ,Gikonko sector
36	Kabalisa J. Claude	Executive Secretary , save sector