



Republic of Rwanda

MINISTRY OF NATURAL RESOURCES

**FIVE-YEAR STRATEGIC PLAN FOR THE  
ENVIRONMENT AND NATURAL RESOURCES SECTOR  
(2009 – 2013)**

*Ensuring sustainable management of Rwanda's Natural Resources and Environment to meet EDPRS and MDG targets, Vision 2020 aspirations and International Commitments*

**Towards a Green, Clean, Healthy  
and Wealthy Rwanda**

**June 2009**

## **Foreword by the Honorable Ministers of Natural Resources**

The Government of Rwanda (GoR) has adopted its Economic Development and Poverty Reduction Strategy (EDPRS) to guide Rwanda's medium-term development aspirations over 2008-2012. The EDPRS communicates GoR's priorities that will be implemented by sectors in order to achieve sustainable development. Following the adoption of the EDPRS, sectors embarked on an exercise of developing sector strategic plans that will streamline priorities, institutional mechanisms and arrangements, financing of the identified priorities and the monitoring and evaluation frameworks that will guide the implementation of the EDPRS over the stated period.

The Environment and Natural Resources Strategic Plan (ENRSP) seeks to articulate the main priorities and strategies that will be undertaken by the ENR sector over the period 2009-2013, in order to contribute to the realization of the EDPRS goals. The ENRSP, therefore charts the course for the sector's contribution to national economic growth. The implementation of the ENRSP will ensure that sustainable use of environmental goods and services and rational utilization of natural resources guarantees benefits to present and future generations.

The effective implementation of the ENRSP will require participation of sectors that extend beyond the ENR sectors: Environment, Land, Forestry, Water Resources and Mines. Sectors such as that include Agriculture, Energy, Industry and Health will be crucial, particularly in consideration of the role they play in national environmental management. This is in line with the national goals clearly elaborated in the EDPRS that highlight the cross cutting status of Environment in national planning. Thus, the ENRSP will contribute to the successful implementation of EDPRS by engaging multiple institutions towards improved environmental management and rational use of natural resources.

To facilitate the implementation of the ENRSP will require a Sector Wide Approach (SWAp) which will be pursued through a forum constituted from broad stakeholder partnerships of public institutions on the one hand, and private sector, non-governmental Organizations (NGO) and development partners; on the other hand. The broad stakeholder participation will feature prominently in key sector support activities including financing for the sector, institutional coordination and capacity enhancement and Monitoring and Evaluation. Sector performance will be tracked and reported through established fora for monitoring progress on EDPRS implementation such as Joint Sector Reviews.

I am pleased to share with you this document which has been developed through a highly participatory process and therefore, is an expression of collective commitment to sustainable development from key national stakeholders. I am positive that the level of commitment and support witnessed in developing the document, at both personal as well as institutional levels; will be demonstrated throughout the period of implementation of the strategic plan.

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## List of Acronyms and Abbreviations

APRM	African Peer Review Mechanism
CBD	UN Convention on Biological Diversity
CBO	Community Based Organisations
CDM	Clean Development Mechanism
CPEGL	Economic Community of Great Lakes Countries
EDPRS	Economic Development and Poverty Reduction Strategy
EIA	Environmental Impact Assessment
ENR	Environment and Natural Resources
FONERWA	Environment Fund of Rwanda (French acronym)
GDP	Gross Domestic Product
GIS	Geographical Information Systems
GoR	Government of Rwanda
IDP	Integrated Development Plan
ISAR	Institute of Agronomic Sciences of Rwanda (French acronym)
IWRM	Integrated Water Resources Management
JAFs	Joint Action Forums
KPIs	Key Performance Indicators
MDGs	Millennium Development Goals
MEAs	Multilateral Environmental Agreements
M&E	Monitoring and Evaluation
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Government
MINIRENA	Ministry of Natural Resources
MININFRA	Ministry of Infrastructures
MINECOFIN	Ministry of Finance and Economic Planning
MTEF	Medium Term Expenditure Framework
NAFA	National Forestry Authority
NAP	National Plan of Action (for combating desertification and drought)
NAPA	National Action Plan for Adaptation to Climate Change
NBSAP	National Biodiversity Strategy and Action Plan
NEPAD	New Partnership on Africa's Development
OGMR	Rwanda Geology and Mining Agency (French acronym)
ORTPN	Rwanda Office of Tourism and National Parks
PAPSTA	Project d'appui au plan strategique de transformation de l'agriculture
PER	Public Expenditure Review
PIP	Public Investment Programme
PRSP	Poverty Reduction Strategy Paper
PSTA	Strategic Plan for the Transformation of Agriculture in Rwanda – Phase II
RAFNET	Rwanda Agro-forestry Network
REMA	Rwanda Environment Management Authority
RPSF	Rwanda Private Sector Federation
SEA	Strategic Environmental Assessment
SMEs	Small and Micro Enterprises
SSP	Sector Strategic Plan
SWAp	Sector-Wide Approaches
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNCDD	United Nations Convention on Drought and Development
UNFCCC	United Nations Framework Convention on Climate Change

## Executive Summary

### *1. Contextual Background*

This document articulates the main priorities for the Environment and Natural Resources (ENR) sector and the strategies to be undertaken over the period 2009-2013, to realize them under the Economic Development and Poverty Reduction Strategy (EDPRS). The EDPRS is the second comprehensive national plan in post-genocide Rwanda, since 2000 when the GoR adopted the Vision 2020. The Vision 2020, which is a long-term development vision aimed at transforming the country from a poor to a medium income country, targets to increase per capita gross domestic product (GDP) from approximately US \$ 250 in 2000 to at least US \$ 900. In contrast with the PRSP 1 (2002-2005) where national poverty reduction priorities focused on improving social indicators (access to education, health, water and sanitation), the context of this strategic plan portends an economic orientation – as the EDPRS (2007-2012) focuses on economic growth whereby production and economic management sectors have been given higher planning and financing priorities. Much more pertinent to this strategic plan, the EDPRS has prioritized environment both as one of the critical cross-cutting issues and as a standalone sector.

***2. Environment and natural resources are critical to Rwanda’s immediate and long term development. Investing in their sustainable management is pivotal to realizing the EDPRS objectives and Vision 2020 aspirations.*** Rwanda is endowed with a large diversity of natural resources – rich productive soils, diverse flora and fauna, natural forests and wetlands, unique landscapes, dense networks of surface and ground water, and valuable minerals, etc. These combined with favourable climate, support livelihoods in terms of food security and employment, and constitute the bedrock on which the national economy is anchored.

More than 80% of the working population is in agriculture. The country’s main foreign exchange earners – coffee, tea, and recently tourism and horticulture, are all based on the country’s natural resource base. Tourism, which is now the fastest growing economic sector, is largely based on wildlife protected areas. The Mountain Gorilla (*Gorilla gorilla beringei*) a rare species found in Rwanda is world class tourist attraction that makes Rwanda a unique tourist destination. Similarly the arts and crafts products - especially baskets (*Uduseke*) that are now being aggressively marketed abroad, are dependent on biodiversity harvested from Rwanda’s wetland ecosystems. Mining has been scaled-up and its contribution to foreign exchange earnings has also substantially increased over the last five-years.

Rwanda’s abundant water resources constitute a big potential for hydro-power generation to produce the much needed electricity; intensive and all year round agricultural production (by increasing arable land under irrigation), and is being utilized in the expanding small and medium size industrial sub-sector – notably fully washed coffee. Forest and tree resources – both planted and natural- constitute the main sources of energy for domestic (over 97% of households), industrial/ commercial and institutional users, and this situation is unlikely to substantially change in the foreseeable future.

With increasing land shortage and frequent droughts, wetlands have become important for crop production especially for commercial and food security crops like cereals, legumes and horticultural crops. In fact, all natural resources are under extreme pressure of degradation which has significant

implications on sustainable national development, making the case for interventions to protect the environment and sustainably manage natural resources, all the more urgent. Key degradation pressures include: land degradation resulting from over- and inappropriate cultivation of arable land; deforestation and wetland destruction to expand agricultural land; scattered rural and urban informal settlements, which wastes land and makes it difficult to extend services such as water and sanitation, exacerbate the problems of soil erosion and increase people's vulnerability to disasters such as landslides, floods, epidemic outbreaks; declining quantity and quality of water resources amidst increasing needs for domestic, agricultural, commercial and industrial use as well as ecosystem maintenance. These problems are exacerbated by high population pressure, lack of alternative livelihood sources, low literacy and awareness levels, inadequate applications of technology including agro-forestry and improved seeds, renewable energy and agro-processing.

### ***3. ENR and the EDPRS: Strategic areas of focus of the ENR Strategic Plan***

The relevance of the ENR sector strategic plan to realization of the EDPRS targets is clear. Most of the economic sectors will rely on increasing utilization of natural resources i.e. water, rural and urban land, minerals, forests and biodiversity, to realize their EDPRS targets. However, the increasing pressure on Rwanda's natural resources is a serious challenge, as the country steps up economic growth efforts. This underscores the need to step-up evidence-based planning and policy formulation and regulatory setting for equitable and sustainable ENR management that guarantees economic security for present and future generations. To appreciate the main areas of focus of the ENR Strategic plan and the underlying rationale thereto, it is important to first analyze the likely implications of the general and sector-specific EDPRS targets together with the different strategies planned to realize them. The ENR Strategic plan is formulated in the context of:

- a) *integrating/ mainstreaming environmental sustainability* into all development processes, building on the successes already registered so as to ensure that economic growth that Rwanda aspires for is genuinely pro-poor and less damaging to the environment;
- b) ensuring coherent and coordinated ENR governance;
- c) *deepening decentralization* as the overall service delivery framework – this entails recognizing the role of and providing sufficient capacity building support to local governments and other actors in ENR management;
- d) *Managing results in a transparent and accountable way* so as to enhance efficient and effective resource use – i.e. embedding a robust monitoring, evaluation and learning framework;
- e) building a knowledge base for sustainable resources management that is grounded in technology and innovation.

### ***Objectives and interventions of the ENR Strategic plan***

The overall objective of this sector strategy is to develop sustainable capacities to ensure that environment and natural resources are utilized and managed productively in support of sustainable national development in line with the EDPRS targets, MDGs and Vision 2020 aspirations. This will be realized in 8 specific objectives viz: (a) equitable, productive and sustainable use and management of land resources; (b) equitable and sustainable utilization of water resources through integrated water resources management and conservation; (c) adequate and sustainable supply of forest and biomass resources to meet the growing multiple demands for food, fibre, fodder, fuel as well as environmental services; (d) promoting productive, efficient and environmentally sensitive mineral exploration and exploitation; (e) restoring, conserving and sustainable management of ecosystems to ensure continued and enhanced functioning of critical ecosystems; (f) raising awareness of and integrating

environmental sustainability principles in/ across all key sectors of the EDPRS; (g) strengthening policy and legislative frameworks for sustainable environment and natural resources management, by harmonizing policies, legal and regulatory instruments within/ across sectors and with regional and international frameworks; and (h) increasing human and institutional capacity, at national and decentralized entities including civil society and private sector. This strategy is also an integrated framework of implementing 13 multilateral environmental agreements that the Government of Rwanda ratified at various points in time that are presently part of the national priority agenda.

### **The Priority programmes and strategic actions for the sector**

The ENR sector strategic priorities will be implemented in 8 programmes:

- *Sustainable land management*: focussing on improving land administration and land tenure security (through land registration services) and improved land use planning;
- *Sustainable Integrated Water resources management*- Watershed protection, Water quality monitoring, Water resources inventory; and regulating its utilisation;
- *Sustainable management of forest and biomass resources* - forest cover change, access to forest and biomass products, Alternatives to wood and biomass products for energy sources and promoting agro-forestry;
- *Ecosystems conservation & improved functioning* - degraded ecosystems rehabilitated/ conserved, biodiversity hotspots and fragile ecosystems protected, Proportion of total land surface covered by protected areas;
- *Sustainable mining and mineral exploitation* - Mineral mapping and research, Mining and mineral processing technology improvement; and control of environmental pollution from mining. Emphasis will be put on institutional capacity building for OGMR and for smallholder (artisanal) miners, as well as investing in value-addition through processing and export marketing;
- *Environmental sustainability* of development policies, programmes and projects at national and local level: Environmental mainstreaming across sectors particularly Agriculture, Energy, Infrastructure, Industry, decentralization for vertical integration and Finance and Planning for effective cross sectoral coordination;
- *Policy, legal & regulatory framework for ENR management* - ENR legal & regulatory regimes harmonised with other EAC Countries;
- *Institutional Capacity of ENR Governance* - Improving sector programming & sectoral coordination (ENR SWAP developed & operationalised); Financing for & financial management in the ENR sector;

An important programme to mainstream environmental sustainability principles across all sector plans and budgets will be coordinated by REMA.

### **Implementation Arrangements**

In formulating this strategy, MINIRENA and its partners have carefully considered that a strategic plan is considered relevant if it's implementable i.e. if sufficient and appropriate mechanisms are in place to implement it. The institutional framework for implementation of the ENR policy will entail:

*i) Establishing a sector-wide coordination mechanism (SWAp)*: in order to strengthen sector coordination and build synergy in mobilizing and allocating funding, bring together stakeholders and enhance effective planning and follow-up, a sector-wide approach (SWAP) framework will be developed by second quarter of 2009. A multi-sector working group will be put in place and facilitated to follow-up sub-sector and cross-sectoral activities leading up to the SWAp.

*ii) Action Planning:* This plan presents a broad statement of sector priorities that will deliver on the EDPRS targets. Thus, these will have to be further broken down into specific annual, quarterly and monthly action plans by the relevant institutions/ agencies/departments.

*iii) Institutional roles/ responsibilities:* The departments, institutions and agencies which have responsibility for implementing some components of the strategic plan are summarized in table E1.

**Table 1: Roles and responsibilities of Core ENR Institutions**

	<b>Agency/Department</b>	<b>Issues / roles &amp; responsibilities</b>
1	MINIRENA	Overall policy oversight, monitoring & institutional support. MINIRENA will also coordinate resource mobilization, allocation & accountability. As the proposed Water Resources Management Agency, is yet to be established, MINIRENA will also coordinate the implementation of the integrated water resources management programme;
2	REMA	Overseeing the implementation of environmental law and policy through education and sensitization; law enforcement and monitoring, and capacity building support to other institutions. Ensuring that environmental sustainability principles are integrated in policies, plans and budgets in all sectors.
3	National Land Centre	Land administration and land tenure security through registration and land use planning both in the urban and rural areas.
4	NAFA	Coordinating the forest management and agro-forestry development component;
5	OGMR	Coordinating all activities relating to research and mapping of mineral resources; developing and monitoring standards for large scale commercial and artisanal miners; regulating mining activities.

iv) *Monitoring, evaluation and information management*: considerable efforts have been put in formulating a set of key performance indicators and targets, as well as a robust M&E system that includes data collection, storage, analysis and reporting. To ensure that the results are clearly communicated among stakeholders, sector-specific strategies for communication and information management will be established. Mechanisms will also be put in place to mobilize sufficient technical and financial resources to facilitate data collection, analysis and reporting; as well as incentives for feed-back.

## **6. Financing and Financial Management**

The implementation of 8 programmes planned under this ENR SSP will require funds amounting to Frw191, 937,617,895. This amount only includes public expenditure resources and does not include private investment and other resources to be mobilized and used by civil society and communities' own initiatives. It accounts for approximately 3.73% of the Frw 5,151 billion required for the entire EDPRS. Funding will principally come from the public budget (approximately Frw. 85, 841617, 895) and externally funded projects (Frw 106, 096 million). This will definitely not be enough to fund the plan for the entire period and therefore more resources will be mobilized from other sources. Allocation of funding is programme based and expenditure is decentralized. For some sub-sectors notably environment, forestry and mining which enjoy some level of autonomy, institutional heads will take responsibility as well as accountability for implementation of the plan, although MINIRENA Permanent Secretary's office is the overall coordinating office. Budget allocation and expenditure management will be guided by a number of instruments – notably the medium term expenditure framework (MTEF) and public expenditure reviews (PERs) which are in use across Ministries/sectors of the GoR since 2002.



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# 1. INTRODUCTION AND GENERAL CONTEXT

## 1.1 General Background

### *Socioeconomic and Political context*

Fourteen years after the horror of genocide and in the face of enormous socioeconomic and geopolitical challenges, Rwanda has recorded major achievements in restoring peace and security, reviving the basic tenets of the state; rehabilitating the social and economic infrastructure, resettling returnees and displaced persons, and reconciling the population deeply torn by the legacy of misrule. Indeed, by 2000, the emergency period had ended and the Government of Rwanda (GoR) embarked on a long term development process. The first poverty reduction strategy paper (PRSP 1) was elaborated in 2001 and implemented during 2002-2005; formal policy and strategy papers were formulated to guide sector activities and public expenditure allocation.

Rwanda's natural resource endowment has been and continues to be the mainstay of its economy and the livelihoods of most Rwandans. Nonetheless, significant challenges are evident – the environment and natural resource base had been severely degraded; yet poverty and vulnerability still define the lives of most Rwandans. In addressing these challenges, the GoR, however, faces significant bottlenecks, viz:

- land degradation exacerbated by high population pressure on agricultural land, lack of alternative livelihood sources, and deforestation;
- scattered informal settlement both in urban and rural areas, which make it difficult to extend services such as water and sanitation, exacerbate the problems of soil erosion and increase vulnerability to disasters such as landslides, floods, epidemic outbreaks;
- declining quantity and quality of water resources amidst increasing needs for domestic, commercial, industrial use as well as ecosystem maintenance;
- inadequate application of scientific and technological innovations.

## 1.2 Important differences with past policy and planning frameworks

### *1. Addressing post-genocide ENR challenges including rehabilitation of degraded ecosystems and facilitating reorganisation of rural and urban settlements.*

One of the most outstanding post-genocide challenges that Rwanda continues to grapple with is the impact of the conflict on the environment and natural resources, and to ensure that Rwanda's natural resources are managed in a manner that addresses the overwhelming and ever increasing needs for food, fibre and fuel, while maintaining the regulating and protective

functions of the country's diverse ecological systems<sup>1</sup>. Forest, wetlands and wildlife resources were destroyed; the few water and sanitation systems broke down, terraces were abandoned or destroyed. Closely connected to this is a challenge of having to reconcile and manage the multiple often conflicting needs of different sectors, as the country embarks on the long road to development.

## ***2. Changing resource management paradigm to support sustainable economic productivity and social wellbeing through enhanced ecosystem functioning:***

Despite its favourable agro-climatic conditions, Rwanda's topography (steep hills with often shallow soils) and socio-demographic pressure have conspired to constrain future agricultural development. Yet agriculture still contributes a substantial 39% of GDP (as of 2005), employs the majority (about 88%) of the economically active population and is the main source of foreign exchange<sup>2</sup>. To resolve such dilemma, interventions for rural poverty reduction and economic transformation will focus on addressing such barriers and investing in non-agricultural livelihood and economic options, and innovative approaches to managing land and other natural resources as key focus areas of this strategic plan. Tourism, the fastest growing sector of the economy, and the arts and crafts (including the famous baskets – *Uduseke*) are also largely based on biodiversity, while mineral exports have increased as a result of more mineral exploration. Environmental changes such as climate variations have continued as potential threats to people's livelihoods (floods, drought, erratic rains,..), undermining the poverty reduction and economic transformation efforts. The only realistic interventions in this regard lie in clear, comprehensive home-grounded policy and strategic investments in the sector. This is what makes this ENR strategic plan a key pillar of the EDPRS.

## ***3. Reinforcing national priorities through recognition of ENR as important to development***

One of the main lessons learnt in the PRSP 1 implementation is the detrimental effects of ignoring or under-prioritising environmental and natural resources (ENR) sustainability issues in the development process, particularly for countries like Rwanda which are heavily dependent on natural resources. During and subsequent to the PRSP 1, it became clear, through a series of studies<sup>3</sup> and other policy relevant forms of evidence, that socioeconomic transformation in Rwanda cannot be realised without primarily addressing environmental challenges. Subsequently, ENR issues were accorded a high priority in the next national medium term development plan, the EDPRS (Economic Development and Poverty Reduction Strategy). Thus, the need for this Strategic Plan has arisen out of the GoR commitments to address environmental and natural resources sustainability concerns, both from the national and

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<sup>1</sup> Regulating functions of ecosystems most pertinent to Rwanda include erosion and flood control; pollution management; preservation of genetic resources, and mitigation of drought and climate mitigation.

<sup>2</sup> Coffee and tea exports are still the main exports, earning up to 80% of Rwanda's total annual export revenues.

<sup>3</sup> Recent studies linking poverty to environmental degradation include the Poverty-Environment Mapping (2005), the Bugesera Integrated Ecosystem Assessment (2006/7), the Economic Analysis of Rugezi Wetlands (2007) and a series of other studies undertaken under the GoR/UNDP-UNEP Poverty and Environment Initiative.

international perspectives. From the national perspective, the EDPRS is growth-oriented compared to the previous PRSP I, and therefore more focussed on productive sectors (agriculture, tourism, industry, trade, energy, mining, infrastructure,..) which present a potential for increased exploitation of natural resources and hence the need to step up socially acceptable and environmentally sustainable resource use plan. Internationally, the GoR aims to fulfil its commitments to the Millennium Development Goals (MDGs) and Agenda 21 developed at the Earth's Summit in Rio De Jenairo and reviewed in Johannesburg, South Africa in 2002.

Hence, this strategic plan is designed to facilitate rational and equitable use of natural resources and ensure that development targets are met through balanced and sustainable approaches to the use of national resources. It aims to facilitate and enable optimal, productive and sustainable ENR use and management, rather than control.

***4. The ENR Strategy builds on existing initiatives but many things will be done differently....***

The basic tenets of ENR management – organic legislations and institutional structures - are in place, and the foundation for most of the planned strategic interventions is already developed. Nonetheless, because of the changing context, this strategic plan particularly departs from the previous strategy in the following respects:

*i). Holistic approach* - greater recognition and inclusion of non state actors by delineating the sector to cover all ENR issues and actors rather than a narrow focus on public sector institutions responsible for ENR functions. This will facilitate progressive shift towards the Sector-wide Approach (SWAP);

*ii). Pays more attention to cross-sectoral issues and linkages*, because it recognises that environmental degradation and natural resource scarcity are a result of actions by other sectors and are felt more by other sectors, hence it takes on the twin roles of facilitating / supporting natural-resource based production and regulating behaviour and practices. It is in this respect that the greater task of REMA and other institutions will be to mainstream environmental sustainability issues into other sectors' strategies, action plans and budgets, and effectively monitor to ensure translated into real results;

*iii) Prioritising sectoral coordination and coherence* – the sector recognises the inextricable links between ENR, poverty and economic transformation, and has included programmes to build capacity in this respect, to ensure sectoral coherence and synergy among its sub-sectors, as well as cross-sectoral collaboration. The ENR strategic plan is also made comprehensive enough to be used as an instrument to mobilise and allocate resources from national and external sources.

*iv) Sensitivity to and compliance with decentralisation* – this SSP is grounded in the decentralised service delivery framework as laid out in the Decentralisation Policy of May 2000. It envisages and allocates policy implementation responsibilities to local governments and community-based actors. The central level actors (ministries, agencies,..) will concentrate on policy analysis and strategic planning issues, including monitoring and capacity building support, as envisaged in the decentralisation policy.

In a way, this plan will further consolidate initiatives in decentralised ENR management. All projects designed to implement the plan will address decentralisation challenges.

v) *Results based framework* - this SSP establishes clear mechanisms to link resources to results (at the outputs and outcomes level). For this reason, the ENR sector will prioritise monitoring, evaluation and feed-back to ensure allocated resources are translated into tangible, sustainable results.

vi) *Finally, alignment with the EDPRS* – in the previous strategy and plan, there was hardly any alignment with the PRSP 1 and the medium term expenditure framework (MTEF). This plan is anchored on the EDPRS pillars and has, to the extent possible, been aligned with other strategic planning initiatives and the MDGs.

### 1.3 Purpose of the ENR Sector Strategic Plan

The overall objectives of the ENR Sector Strategic Plan (SSP) is to ensure that the economic growth and poverty reduction targets of the EDPRS are realised in a manner that is environmentally and economically sustainable. This SSP broadly states the targets and indicative costs, the means for achieving targets (financial and technical resources), implementation modalities, key performance indicators (KPIs) and actions for monitoring and evaluation. The SSP includes a results management framework for tracking resource inputs to activities and outputs, which is linked to the Medium Term Expenditure Framework (MTEF). It is noteworthy that the MTEF provides inputs and facilitates tracking of outputs for the results framework.

The process to prepare and implement this strategy is as important as the resulting document itself. The participatory process is an important foundation for mobilizing stakeholders and building synergies for successful implementation. This SSP is being elaborated at the most opportune moment when sustainable ENR management has been recognised as critical to the realization of the EDPRS targets and Vision 2020 aspirations (see table 1). Recognising this fact, the GoR made environment an integral part or a cross-cutting theme in all sector strategies and plans, in addition to being recognised as a fully fledged sector. This plan is inspired by the recognition in the EDPRS that sustainable environmental and natural resource management is integral to economic development, poverty reduction and Millennium Development Goals (MDGs). The EDPRS recognises environment as a cross-cutting issue and as part of a fully fledged ENR sector. This reflects increased appreciation of the environment-poverty-economic development links, although these links are yet to be clearly and widely understood. It also provides opportunity to integrate sustainability principles in sector plans and budgets.

**Table 1: Environment and Natural Resources underlying causes of Poverty in Rwanda**

	Perceived cause of Poverty	% of respondents	Links with ENR
1	Lack of land	49.5	Access to land; pressure on other natural resources e.g.

			encroachment on PAs;
2	Poor , unproductive soils	10.9	Land degradation
3	Drought/weather	8.7	Climate change
4	Lack of livestock	6.5	Organic manure to improve productivity
5	Ignorance ( <i>Ubujiji</i> )	4.3	Inappropriate ENR exploitation/ management
6	Inadequate infrastructure	3.0	Improved land productivity, value addition to NRs, alternatives to agriculture; pressure on NRs
7	Inadequate technology	1.7	Improved land productivity, value addition to NRs; alternative econ options
8	Sickness	1.7	Water and nutrition related disease
9	Polygamy	1.2	Pressure on natural resources
10	Lack of access to water	1.1	Water resources
11	Population pressure	0.7	Pressure on land & other natural resources
12	Others	10.6	
	Total	100.0	

Source: MINECOFIN (2007a) in MINECOFIN (June 2007), The EDPRS p14.

#### **1.4 The Thematic Scope of the ENR Sector**

The environment and natural resources (ENR) sector in Rwanda comprises of water resources, forest resources, land resources including wetlands and rangelands, minerals; wildlife and biodiversity resources, and the environment sub-sector which cuts across various sectors. The ENR sector is politically overseen by the Ministry of Natural Resources (MINIRENA). Other key natural resources (fisheries and wildlife protected areas) are, however, managed under different institutional arrangements<sup>4</sup>. Rwanda's ENR governance framework has evolved rapidly since 1994 and is discussed in detail in section 2.3.3

#### **1.5 The Strategic Planning process**

The preparation of this strategic plan has followed a participatory iterative process. The planning process started with consultations and drafting at sub-sector level, followed by a series of internal technical workshops and meetings to formulate the first draft. This draft was discussed at a retreat organised by MINIRENA in Rubavu, and subjected to expert analysis, review and reformulation of some parts resulting into a final draft. This draft was further subjected to internal review and wider stakeholder validation. Throughout the process, the technical teams have consulted and briefed top policy makers in MINIRENA, whose inputs have been paramount in providing policy and strategic guidance to the overall plan. Hence the approach used emphasised stakeholder inclusion, partnership building and fostering ownership rather than just producing the strategic plan document.

#### **1.6 Document Structure**

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<sup>4</sup> Fisheries is under the Ministry of Agriculture and Animal Resources (MINAGRI); while and Rwanda Office of Tourism and National Parks (ORTPN) which is institutionally overseen by the Ministry of Trade and Industry (MINICOM) under which the tourism sector is.

This document is organised in 7 chapters. Chapter 1 outlines the overall context and purpose of the plan; chapter 2 defines the ENR sector and its governance framework in considerable detail, highlighting cross-sectoral linkages; while chapter 3 reviews the sector performance to-date in a way that sets the basis for future strategic direction. In chapter 4, the strategy's mission, objectives, detailed programmes and sub-programmes are discussed, while chapter 5 presents the implementation framework, including institutional roles and monitoring and evaluation. Chapter 6 presents the cost estimates and financial management mechanisms, and in chapter 7, the results management framework is stated. The detailed logical framework and references are annexed to provide pertinent details to the 5-year strategic plan for the ENR sector.



## 2. ENVIRONMENT AND NATURAL RESOURCES GOVERNANCE FRAMEWORK

### 2.1 Policy framework

#### 2.1.1 Overall Policy Context

The overall development context has been set by the Vision 2020 which was elaborated in 2000 by the GoR as a roadmap for socioeconomic transformation of the country from a poor to a medium income country. This Vision is being realised through a series of medium-term plans. In 2006, the Government of Rwanda (GoR) elaborated the EDPRS (Economic Development and Poverty Reduction Strategy), a five-year national medium term development strategy for the period 2008-2012. The EDPRS builds on the first Poverty Reduction Strategy Paper (PRSP 1) that was implemented during 2002-2005. The EDPRS builds on the foundation set by the PRSP 1 especially achievements made and lessons drawn from PRSP I implementation and the relevant annual reviews, to strive towards realising the MDGs and Vision 2020. The strategic framework will guide the implementation of this Strategic Plan and embraces the following:

##### 2.1.1.1. Vision 2020

The *Vision 2020* is a policy statement that maps out the long-term development aspirations of the Government and the implications for country's occupants. It expresses the economic and social parameters that should characterize the well-being of people of Rwanda by 2020, and the strategies to get there. Formulated in 2000, the Vision 2020 projects, among others, a middle income country with per capita GDP averaging USD 900<sup>5</sup>, from USD 220 in 2000; and an economy that is knowledge-based as opposed to the present agrarian one. For these aspirations to be realized, the Vision 2020 envisages a well educated and skilled population living in a free and democratic society and a green environment. These aspirations and the strategies to get the country there, have important bearing on how the natural resource base is managed and utilized. Rational utilization of the resources must be a priority across various sectors in order to ensure continued provision of such ecosystem services as water, energy, food, minerals, recreational and intangible ones like regulation of climate modification and protection from natural disasters.

### Environment, natural resources and the Vision 2020

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<sup>5</sup> In constant 2000 prices.

Environmental conservation and sustainable natural resources management are one of the key pillars of the Vision 2020. Environmental interventions will help realize Vision 2020 objectives, *inter alia*, by:

- *reducing the pressure on the natural resource base* by creating alternative livelihoods (especially to agriculture where more than 80% of the rural population are employed and on wood resources on which more than 94% of the population depends for energy);
- *promoting approaches and techniques* that encourage sustainable use or exploitation of natural resources through scientific and technological applications, balancing resource supply and demand and raising public awareness on environment;
- *establishing a governance framework* that ensures more equitable, regulated use of natural resources in order to preserve and bequeath to future generations the basic wealth necessary for sustainable development.

#### ***2.1.1.2 Seven-Year Government Strategy***

This programme was designed to implement the Presidential manifesto of 2003-2010. As a political agenda, this plan provides a framework in which the presidential pledges are translated into action through national policies, strategies and action plans. As political programmes guide key national priorities, this strategy is an important tool for sectoral planning and resource allocation.

#### ***2.1.1.3 Decentralization Policy and Implementation Strategy***

Rwanda's decentralization policy was adopted in May 2001. Important elements of this policy that impact or facilitate natural resources governance include: a) the creation of administrative structures at all levels from district, sector, cell and *Umudugudu* levels, which would (potentially) facilitate bottom-up planning and effective implementation of ENR policies and laws, as well as facilitate the community –driven interventions in ENR; b) the decentralization policy implementation has empowered communities or at least put in place a framework to empower communities to think and work creatively in solving their own problems including responsibilities for protecting environment, access to and management of natural resources. In any case, natural resources issues are local-specific and are better identified and addressed at the community level and by those most affected.

Most of the legislations have been reviewed to conform to decentralization. For instance the National Forest Policy 2004 created RAFNET (Rwanda Agro-forestry Network) as a forum to promote dialogue among national and local level stakeholders, in civil society and private sector involved in forestry activities. The land and environment laws and subsidiary legislations thereto (e.g. the Presidential Order No. 53/01 on the Registrar of Land Titles), create resource governance structures at decentralized levels – from district, sector and cell

levels. These structures are also harmonized with existing local administration structures. For instance, Article 27 of this Order requires the Sector Land Committee to report to the Sector Council (*Njyanama y'Umurenge*) which is the overall decision making body in the Sector, and in article 30, the Cell Executive Secretary doubles as Secretary to the Land Committee, ensuring that these committees are fully linked with local government structures. In the case of mining, local governance has focused on enhancing cooperatives of artisanal miners to enhance efficiency and profitability of localized small scale operations.

However, natural resources governance faces challenges of implementation due to capacity constraints at all levels. Under this plan, a capacity building programme will be implemented for national and local institutions levels to strengthen natural resources governance.

#### ***2.1.1.4 The Economic Development and Poverty Reduction Strategy***

Contributing to the realisation of the EDPRS targets is the underlying objective of this ENR Sector Strategic Plan, as rational management and utilization of natural resources are some of the main thrusts of the EDPRS<sup>6</sup>. Successful implementation of the three EDPRS flagship programmes is hinged on sustainable ENR management:

- a) *Sustainable Growth for Jobs and Exports* will be driven by an investment agenda that targets increased infrastructure, including roads and hydro power developments, increased irrigation to scale up agricultural production in water-scarce areas, value addition to crops and increasing off-farm jobs.
- b) *Vision 2020 Umurenge* – is essentially a mechanism to deepen decentralised service delivery and poverty reduction through integrated interventions. Planned integrated activities include labour intensive public works, cooperatives development, and enhancing access to productive skills, etc are largely based on value-addition to natural resources and environmental sustainability;
- c) *Participatory and democratic Governance* will provide an anchor for pro-poor growth in many respects, including land tenure reform which aims to guarantee land ownership rights through land registration and titling; and framework for regulation, conflict management and decision making on ENR created at decentralised levels closer to the population (land tribunals, local environment committees, etc).

The EDPRS' strategic focus on productive sectors has important bearing on optimal utilization and sustainable management of natural resources as these sectors largely depend on exploitation of natural resources. Transforming (or adding value to) natural resources, generates waste that can pollute the environment. Some of the resources targeted are summarised thus:

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<sup>6</sup> See MINECOFIN, June 2007. The EDPRS,

- ✓ more water<sup>7</sup> is likely to be used for hydropower production and for irrigation of thousands of hectares, as well as for use in coffee washing stations and other industries;
- ✓ more Mega Watts of electric energy will be required to power industries, service facilities like hotels and recreation centres and ICT instalments;
- ✓ mineral exploration and industrial processing, including sand mining and stone quarrying for construction. Rehabilitation of abandoned mines will be of major concern;
- ✓ industry (coffee processing, textiles, grain milling, construction,..), mining and services (hotels) and increased trade, that are expected to increase under the EDPRS, will inevitably result in increased waste generation, which presses a huge burden to municipal and local authorities. Other environmental issues of concern are:
  - *management of chemical fertilisers and pesticides which it is anticipated, will be applied on a larger expanse of farmland including marshlands;*
  - *more industrial activity is likely to emit toxic gases and liquid wastes which must be treated, contained or prevented through clean production technologies;*
  - *expanding urbanisation and clustered human settlements will require more efficient services particularly retrofit utilities for improved sanitation and solid waste management services, etc.*
  - *regulating the increasing exploitation of beaches through clustered settlements and recreational activities along lake shores (especially Muhazi, Kivu,..), by enhancing EIA applications, educating and sensitising stakeholders.*

## **2.1.2 Regional and International Commitments**

### ***2.1.2.1 The Millennium Development Goals***

Rwanda was one of the 198 countries that signed the commitments to achieve the Millennium Development Goals (MDGs), which are global targets to halve the numbers of people living in absolute poverty by 2015, using 1990 as the baseline. Poverty in Rwanda has been linked to environment and natural resources related issues (see table 1). Thus, MDGs and their targets have important bearing on the country's ability to realise the targets set in the EDPRS and those of the natural resources sector. For example, this strategic plan directly contributes to realising MDG 1 (Eradicating extreme poverty and hunger) and MDG 7 (Ensuring environmental sustainability). It also contributes immensely to attainment of MDG 2 (achieving universal primary education), MDG 3 (promoting gender equality and empowering women) and MDGs 4 and 6 (reducing child mortality; combating HIV/AIDS, Malaria and other diseases). These MDG targets demonstrate perhaps more than any other framework, the centrality of the ENR sector to poverty eradication and socioeconomic transformation, as table 1 shows.

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<sup>7</sup> According to the Energy policy, some 176 small and micro hydropower sites have been identified; while MINAGRI's PSTA targets to put some more 20,000 Ha of land under irrigation;

**Table 2. Links between the MDGs and Environment**

<b>Millennium Development Goals</b>	<b>Examples of Links to the Environment</b>
Eradicate extreme poverty and hunger	Livelihood strategies and food security of the poor often depend directly on healthy ecosystems and the diversity of goods and ecological services they provide.
Achieve universal primary education	Time spent collecting water and fuel-wood by children, especially girls, can reduce time at school.
Promote gender equality and empower women	Poor women are especially exposed to indoor air pollution and burdened by water and fuel-wood collection. They also have unequal access to land and other natural resources compared to men.
Reduce child mortality	Water-related diseases – malaria, dysentery, diarrhoea and cholera- are the most common ailments reported in health centres in Rwanda; and the main cause of mortality among infants and children.
Improve maternal health	Indoor air pollution and carrying heavy loads of water and fuel-wood adversely affect women’s health and can make women less fit for childbirth and at greater risk of complications during pregnancy.
Combat major diseases	Up to one-fifth of the total burden of diseases in developing may be associated with environmental risk factors – and preventive environmental health measures are as important and at times more cost-effective than health treatments.
Ensure environmental sustainability	Current trends in environmental degradation must be reversed in order to sustain the health and productivity of the world’s ecosystem

Source: UNEP/UNDP/REMA, 2006: Economic Analysis of Natural Resources Management in Rwanda, 2007.

### **2.1.2.2 Multilateral Environmental Agreements and other Conventions**

Rwanda has ratified and signed more than 10 International Conventions and Protocols on or related to environment (see Annex 4 for a full list of Conventions and Treaties and Protocols ratified by Rwanda). Rwanda is an active participant in major international multilateral conventions relating to environmental governance, most notably the Convention on Biological Diversity (CBD), the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention to Combat Desertification and Drought (UNCDD).

As part of the implementation of the 3 Rio Conventions, commonly referred to as Multilateral Environmental Agreements (MEAs), the GoR developed National Strategies and Action plans for each convention viz: the National Biodiversity Strategy and Action Plan (NBSAP) 2003, National Plan of Action (NAPA) for climate change adaptation 2006, and National Action Plan (NAP) for combating desertification. These strategies and action plans reflect national priorities for ENR that are inline with the EDPRS priorities.

### **2.1.2.3 New Partnership for Africa’s Development**

Rwanda is an active participant in the African Union’s New Partnership for Africa’s Development (NEPAD), as evidenced by existence of a fully fledged NEPAD Secretariat in the Office of the President and the fact that together with Ghana, Rwanda was the first country to subject its governance process to the APRM (African Peer Review Mechanism) in

June 2005<sup>8</sup>. Investing in environmental and natural resources and sustainability is one of the priority programmes of NEPAD (Rwanda NEPAD, 2005). Another area where NEPAD is expected to influence this SSP is the Agricultural Transformation Strategy (PSTA II) which has also been driven by the GoR's commitment to the NEPAD's 2003 Maputo Declaration that committed African Governments to increase public funding for agriculture to at least 10% of public expenditure budget. The implication on sustainable ENR management, particularly land, water and energy resources use will be unprecedented. Hence, this plan has to respond to such emerging issues.

#### *2.1.2.4 The Nile Basin Initiative*

Rwanda is an upstream member of the 10-country Nile Basin Initiative (NBI)<sup>9</sup>. With more than 80% of its population being located in the basin, and being an upstream member of the basin, the NBI's programmes and policies are invaluable to the country's development. One of the 8 Subsidiary programmes of the NBI, the NELSAP (Nile Equatorial Lakes Subsidiary Action Programme), is hosted in Rwanda. These programmes significantly affect Rwanda's natural resources management framework, including management of transboundary environmental resources management are an integral part of the strategy.

#### *2.1.2.5 East African Community Protocols and Strategies*

Rwanda has been a member of the East African Community (EAC) since November 2006 when it was admitted along with Burundi. Consequently, it is signatory to its protocols including the Lake Victoria Basin Commission (LVBC), an organ of the EAC that is primarily charged with coordinating integrated development within the Lake Victoria Basin (LVB). It should be recalled that the LVB was declared an Economic Development Zone by the EAC Summit, and this includes about 80% of Rwanda's territory.

#### *2.1.2.6 Other Regional Partnership Frameworks*

Rwanda is strategically located within the Albertine Rift part of the great western rift valley that is characterised by high biodiversity including the endangered Mountain Gorillas. It has recently signed and is hosting the Secretariat for a Trans-boundary Partnership Programme with the Democratic Republic of Congo (DRC) and Uganda. This partnership has been formed in the context of protecting and conserving the endangered mountain gorillas, whose habitat transcend the borders of the 3 countries, and is the most important source of tourism revenue

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<sup>8</sup> Rwanda NEPAD, 2005. NEPAD Magazine, Issue No. 004, December 2005

<sup>9</sup> NBI was formed in 1999 with the principal objective of promoting sustainable socioeconomic development of the Nile Basin populations through equitable and wise use of the Nile basin's aquatic and terrestrial resources.

for the country. In the same zone, Rwanda is a member of the Great Lakes Economic Community (French acronym CPEGL) that includes Burundi and the DRC.

### **2.1.3 Sector and cross sectoral policies**

This section outlines salient issues in the ENR specific sectors as well as cross-cutting sectors.

#### *2.1.3.1 Key Sector Policies*

**1. The National Environment Policy and strategy:** The present national policy for the conservation and protection of environment was enacted in 2003 with the following objectives:

- to improve the health of the Rwandan people and promote their socioeconomic development through the sustainable management and utilization of natural resources and the environment;
- to integrate environmental aspects into all policies, planning and implementation activities carried out at the national, provincial and local levels, with total participation of the population;
- conserve and restore ecosystems and maintain dynamic ecology and systems health especially national biodiversity;
- optimize sustainable use of natural resources
- sensitize the population on environmental values and the relationship between environment and development;
- ensure participation of individuals and communities in activities aimed at improving the environment, with particular attention to women and young people; and to
- ensure that the basic needs of Rwandans today and those of future generations are met;

The epitome of environmental governance is laid in chapter 7 of the Environment Policy, which provided for the creation of various institutional and judicial arrangements, including:

- a) the National Environment Council – which is a top policy decision making organ created by law;
- b) the Environmental authority, the Rwanda Environment Management Authority (REMA) which was created in 2006 and is currently involved in implementing national environmental priorities including building institutional capacity for enhanced execution of national environmental priorities;
- c) The National Environment Fund (FONERWA) which is expected to be operationalized;
- d) The Environmental Tribunal as an instrument of conflict resolution; and
- e) Local Environmental Committees created from District down to Cell levels.

It is important to note, however, that these structures are still evolving and not yet sufficiently strong. Building sufficient capacities to enable these institutional organs contribute effectively to sustainable ENR management is a key sub-component of this strategic plan.

**2. The Land Policy 2003:** Despite the fact that land has been the most important economic, social and cultural asset of Rwandans, and has been the thrust of governance challenges for decades, the first comprehensive land policy was only elaborated in 2004. This has formed the basis of on-going land tenure reforms. The overall objective of the national land policy is to establish a land administration and land use management system that guarantees secure tenure for all users, promotes productive and sustainable use of rural and urban land resources and ensures protection of the environment. Very specifically, the land policy seeks to:

- Put in place mechanisms which procure security of land tenure for the promotion of investments in land.
- Promote proper allocation of land and proper use of land resources, according to their potential.
- discourage land fragmentation and promote consolidated use in order to optimize production, by establishing appropriate mechanisms and incentive systems;
- Orient land management towards a more profitable and sustainable production, by making good choices among methods of land development.
- Promote techniques that protect land resources from all forms of land degradation.
- Establish institutional frameworks and regulatory instruments which enable land to become more valuable as an economic asset;
- Promote research and public education on all aspects concerning land tenure, management, and transactions.
- Streamline and put in place orderly and equitable allocation of land, as well as in land transactions in order to control the pressure on land, inappropriate development and speculation in land markets.
- Sensitize the public and promote their active participation at all levels in decision making in order to ensure environmental protection and good practices in land management.
- Ensure the sustainable use of wetlands.

The policy objectives have been pursued through two broad areas: - land tenure reforms which include registration and titling, and improving land use through comprehensive land resources mapping and suitability assessment. The land policy is important for the sustainable management of environment and natural resources, and indeed the realization of the EDPRS and Vision 2020 aspirations because, it's the resource base on which all economic, social and environmental development activities are anchored.

**3. Water Policy:** Rwanda's water policy emphasizes equitable access to clean water by all; efficient and balanced use on economic production and ecosystem functioning. The GoR's water resources management vision and strategy envisage a decentralized and participatory management regime in line with the overall governance structure. Under the EDPRS, water resources utilization for growth is expected to increase, as more land will be put under irrigation; more hydro-power generation potential will be exploited; and more industrial activities is anticipated (especially the water-intensive washed coffee processing). Strategic natural water bodies will be exploited for recreation including hotels and other recreation



facilities. All these potentially imply more water abstraction that requires a rational management regime.

The Water sub-sector policy places emphasis on sustainable and integrated water resources management and development for multipurpose use including increased access to safe water and sanitation services by all and economic and recreational use. Specific areas of intervention over the period of the SSP will be:

- Improve water quality management;
- Improve natural water resource management;
- Reduce cost for delivering water services;
- Increase access to safe water supply for the rural and urban population;
- Increase water for production;
- Protect water sources;
- Improve water facility maintenance;

**4. Forest Policy:** The overall mission of the forest policy is to: a) develop forest resources so as to meet the timber and non-timber forest products needs of the population at domestic and industrial/ commercial levels; b) manage forests to optimize their ecological functions notably soil erosion control, climate regulation and biodiversity conservation; c) promote a forest product based industry to better contribute to the national economy through *inter alia* promotion of wood processing and non-timber products extraction technologies; and d) establish a strong institutional framework for technical support and supervision of forestry activities in order to improve and sustain the quality of products and services offered.

Specifically, the forest policy seeks to achieve the following 10 objectives, all of which are consistent with the overall national medium and long-term development aspirations:

- to increase area and diversity of national forestry resources
- to improve the sustainable management of forest resources
- to scale-up forestry extension and education
- to promote value addition to wood and non wood forest products
- to promote forestry and agro-forestry research
- to reduce consumption of wood by promoting efficient production and consumption technologies as well as step up adoption and use of wood alternatives;
- to strengthen the capacity of forestry management institutions responsible for functions;
- to quantify, document and disseminate the contribution of the forestry sub-sector to the national economy, and enhance the sub-sector's position within national priorities.
- to strengthen regional and international cooperation in forestry through active participation in international conventions.
- to promote gender and other cross-cutting socioeconomic issues into forest management.

The forest policy identifies high population growth rates as a threat to the sector's development as population density is a key driver of deforestation and declining land units available for forestry extension. It also highlights the importance of forestry and agro-forestry in agricultural transformation as forestry activities will be important in controlling soil erosion, increasing land productivity, and improving rural off-farm livelihoods through multiple benefits from agro-forestry and biodiversity conservation.

**5. Mining Policy:** Before the 1990s civil war, about 10 percent of the country's export earnings came from mineral commodities. The most important minerals are Colombo tantalite, Cassiterite, and Wolfram (National TDA 2006). After a slump in the mid nineties the sector has continued to grow and it accounted for more than 30% of the country's exports in 2008. In the context of the EDPRS, the National policy on mining puts emphasis on exploration for minerals, industrial processing of minerals and value addition to minerals as part of exports and national revenue diversification and job creation. Nonetheless, relying on old technologies, inadequate expertise and low investment in research, innovation and value addition, remain serious challenges undermining the expansion of the mining sub-sector. A new mining code which is more investor-oriented has been developed, in addition to the recent establishment of the Rwanda Geology and Mines Authority (OGMR) are part of the GoR's recent efforts to reform the mining sub-sector, through human resources and institutional capacity building; research and innovation. It is anticipated that investing in research and value addition through industrial processing; mineral mapping and exploration will transform Rwanda's mineral potential into a real economic sector. The mining policy recognizes the need to work with other closely interfacing sectors namely lands, forests, water and energy and environment, thereby strengthening institutional synergies in natural resources management. Thus, the operationalization of the policy will clearly contribute to sustainable national development.

#### **2.1.3.2 Key Cross-Sector Policies**

Environment and natural resources (ENR) in Rwanda form a backbone of most social and economic sectors viz: agriculture; trade, industry; health; education; population; good governance; gender and social protection, among others. A review of key sectoral policies and legislation related to environment and natural resources is summarized in the following texts:

**1. The National Population Policy 2003:** According to the EDPRS, overall population growth and the resulting pressure on land has inevitably placed land tenure and land use management at the center stage of land reform process. While the land resources have attracted particular attention in redistribution of resources to an ever growing population, other resources such as water and forest resources have posed challenges of resource use and distribution. The overarching challenge of the ENR sector, therefore; is how to meet the needs of an ever growing population, who depend on natural resources for virtually every provision – energy,

water, housing, and employment. Integrating environment and sustainable natural resources management principles, is one of the underlying strategies of the Population Policy which was reviewed in 2008. As population pressure one of the key drivers of environmental degradation and poverty (REMA et al 2007; MINITERE, 2004)<sup>10</sup>, the implementation of the population policy especially aspects that address high fertility rates, gender and reproductive health, migration and human settlements, constitute important triggers for sustainable natural resources management.

**2. National Agricultural Policy 2004 and Agricultural Transformation Strategy 2005/2008 revised 2008:** The National Agricultural Policy 2005 focuses on transforming the agricultural sector from a predominantly smallholder subsistence based to commercial-oriented sector that emphasizes high value non traditional crops and technology-intensive land use. This transformation is being pursued through crop intensification and diversification, land consolidation, and optimal utilization of all arable land through irrigation and fertilizer application. The value-addition objective will be realized through agro-processing and improving the agro-marketing systems. PSTA has been developed in 2005 and reviewed in 2008. Its 4 strategic objectives will be realized through 4 programmes, all of which have implications for ENR management, viz:

The PSTA II revolves around programme outcomes:

- intensification and development of sustainable production systems (physical resources and food production);
- professionalization of producers and other economic agents (producer organizations and extension);
- commodity chains and agribusiness development (entrepreneurship- market linkage);
- strengthening the public sector and regulatory framework for agriculture (institutional development).

The National Agricultural Policy and medium-term transformation strategy has the potential to impact significantly on the use of natural resources, notably land, water, energy and biodiversity, resource degradation and pollution if appropriate mechanisms are not put in place. On the other hand, PSTA will address issues including increasing rural household incomes, scaling-up agricultural and non-agricultural employment and reducing poverty, thereby improving capacity for sustainable natural resources management. There are ample opportunities, through the rural cluster; to coordinate the agriculture and the ENR sector activities to the benefit of sustainable agricultural productivity. The March 2009 Joint Sector Review (JSR) for the agriculture sector field visit reports gave clear evidence efforts towards

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<sup>10</sup> REMA, UNEP, UNDP, 2007. Bugesera Pilot Integrated Ecosystem Assessment. Final Report; MINITERE 2004) National Land Policy for Rwanda

improvements in ENR management as a significant component of agriculture intensification programme supported by PAPSTA<sup>11</sup> project. More pertinently, it will be important for the agriculture policy to recognize the role of ENR management to promoting agricultural productivity and deliberately allocate sufficient resources towards ensuring sustainable ENR use. This ENR sector strategy seeks to support implementation of the PSTA with a significant focus on rational utilization and management of ENR to the overall benefit of sustainable agricultural productivity.

**3. National Health Policy 2005:** According to the National Health Policy (MoH 2005), malaria and AIDS are the two major health problems in Rwanda with significant socioeconomic impacts. Malaria, whose prevalence has increased from 3.5% in 1982 to 48% in 2003, is the leading cause of outpatient attendance (about 50% of all health centre visits are due to malaria) and is the principal cause of morbidity in all provinces of Rwanda (PNLP 2005). Malaria epidemiology and the high incidences of diarrhoea and other water-related diseases, and therefore the health policy have significant implications for ENR management, because of the strong and complex links<sup>12</sup>. The MoH has elaborated an Environmental Health Policy which is an important recognition of the environment-health links, creating an opportunity for close cooperation between the ENR and health sectors. MINIRENA and REMA will provide technical support in the further refinement and implementation of the environmental health policy.

**4. Urbanization and Human Settlements Policy:** In the wake of increased land scarcity, and driven by the need to optimize productive land use, Rwanda's urbanization and human settlement policy 2002 envisaged 40% of the population to live in urban areas by 2020, and the entire population to live in organized clustered settlements (*Imidugudu*). This policy is expected to free up more land for production, promote rational land use and facilitate cost-effective service delivery to the population. The implementation of the National Settlement Policy (particularly the aspect of *Umudugudu*) has been revitalized under the Integrated Development Programme (IDP)/ Vision 2020-Umurenge, an important pillar of the EDPRS, and the sector level is the centre of focus. The IDP is an important pillar of the EDPRS. The reorganization of settlements into clustered villages (*Imidugudu*) encourages rational use of land and natural resources; and will facilitate cost-effective provision of services such as infrastructure, education, security and agricultural extension, and waste management. On the other hand, however, increased urbanization raises challenges of utility supplies (water, energy,

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<sup>11</sup> PAPSTA is a six year pilot project that supports the implementation of PSTA.

<sup>12</sup> The increasing malaria incidences have been attributed largely to climatic factors (rainfall, temperature) resulting from greater population density, population movements and intensive production such as rice farming, brick making and mining, which increase breeding areas for mosquitoes. Malaria is now evident in high altitude areas and other areas where the disease was not previously common, highlighting the link between ecosystem destruction and health.

and housing) as well as waste disposal, in as much as it will provide opportunities for alleviating pressure on rural land and biodiversity resources.

**5. Energy policy:** The National Energy Policy adopted in November 2004 is currently being updated and will set the long-term vision for development and subsequent management of energy resources at the national and local levels. MININFRA acknowledges that increasing access to energy, energy production, diversification of energy sources and improving energy efficiency will require close institutional coordination and partnerships. The energy sector closely coordinates with REMA to ensure environmental impacts (EIAs) are conducted for Energy Projects, although it is widely acknowledged that there is need to promote understanding of the role of EIA in sustainability of energy projects which goes beyond merely fulfilling the regulatory requirement. Moreover the Designated National Authority (DNA) for registering Carbon Credits (Certified Emission Reductions) derived from renewable energy projects under the United Nations Framework Convention on Climate Change is managed by REMA and therefore requires close coordination with MININFRA to ensure successful oversight over the qualifying projects. MINIRENA's collaboration with MININFRA in ensuring sustainable use of biomass by regulating the exploitation of forest resources and the partnership of the two Ministries in the development of the biomass energy sector is a clear demonstration of growing awareness of ENR in fostering sustainable development.

**6. Industrial policy and Investment code:** The overall aim of Rwanda's industrialization policy is to increase value addition to primary production in order to boost exports and create more jobs for the growing population. The main strategy is to develop the private sector (by attracting industrialists, and strengthening SMEs) and improving the operational environment for the business sector. The SSP recognises that in order for Rwanda's natural resources and environment to be sustainably managed, there is a need to adopt economic and business approaches that provide incentives for sustainability, raise revenue, increase employment as well as increase financial resources for the sector. This approach is based on the idea that the quality of ecosystems underpins sustainability of goods and services on which livelihoods and a big proportion of the country's foreign exchange earnings<sup>13</sup> depend.

The pivotal importance of natural resources to the economy should be reflected in policies, strategies and budgets of productive sectors notably agriculture, tourism and industry. These sectors (that depend on organic coffee, tea, horticulture, crafts and arts), and secondary sectors like hotel and hospitality services, should invest in maintaining the quality of biodiversity and ecosystems that support them. How? The first step is to formulate and implement incentive systems and instruments and ensure that they are adequately incorporated into the policies, plans and budgets. The Rwanda Investment and Export Promotion Agency (RIEPA), recently

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<sup>13</sup> Tourism earnings, mostly from national park visits, amounted to US\$..... in 2008, while export of arts and crafts including *Uduseke* baskets brought in US \$ ..... during 2007).

placed under the Rwanda Development Board (RDB)<sup>14</sup>, is empowered by law (No. 14/98) as the lead agency for promotion of investment and exports in the country – including encouraging industrial development. It is noteworthy that environmental compliance advisory (especially relating to Environmental Impact Assessment), has been included among the services provided by the RDB, which is an opportunity to promote sustainable ENR management. In order for this to be effective, the environmental compliance component will have to be perceived in terms of value addition, which indeed becomes clearly evident when long term cost- benefit- analysis is factored into business investment planning.

**7. Gender Policy:** Women constitute 53% of the Rwandan population, and in the post-genocide Rwanda, women are playing a critical role as household heads and economic managers. Women constitute the majority of agricultural workers. They are also most affected by shortage of natural resources such as water and fuel wood, highlighting the strong link between gender and natural resources.

## **2.2 The EDPRS strategic framework and the position of ENR**

### **2.2.1 General**

The EDPRS recognises that in order for Rwanda’s natural resources and environment to be sustainably managed, there is a need to adopt economic and business approaches that provide incentives for sustainability, where the sector is managed to raise public revenues, increase livelihood opportunities for communities, and generate incentives for public and private investment in sustainable management of ecosystems. This approach is based on the fact that the quality of biodiversity and ecosystems underpin the continued provision of goods and services on which livelihoods and about 80% of the country’s foreign exchange earnings<sup>15</sup> are anchored. This pivotal importance of natural resources in the economy should be reflected in policies, strategies and budgets of the economic sectors that depend on them. This means that policies, plans and budgets of productive sectors such as Agriculture and industry (that depends on organic coffee, tea, horticulture, crafts and arts), and service sectors like tourism and hospitality services including recreation and hotels, should contribute towards maintaining the quality of biodiversity and ecosystems that support them. How? Incentive structures/ systems and instruments will be formulated to undertake natural resources valuation and use the information to inform the planning and budgeting processes.

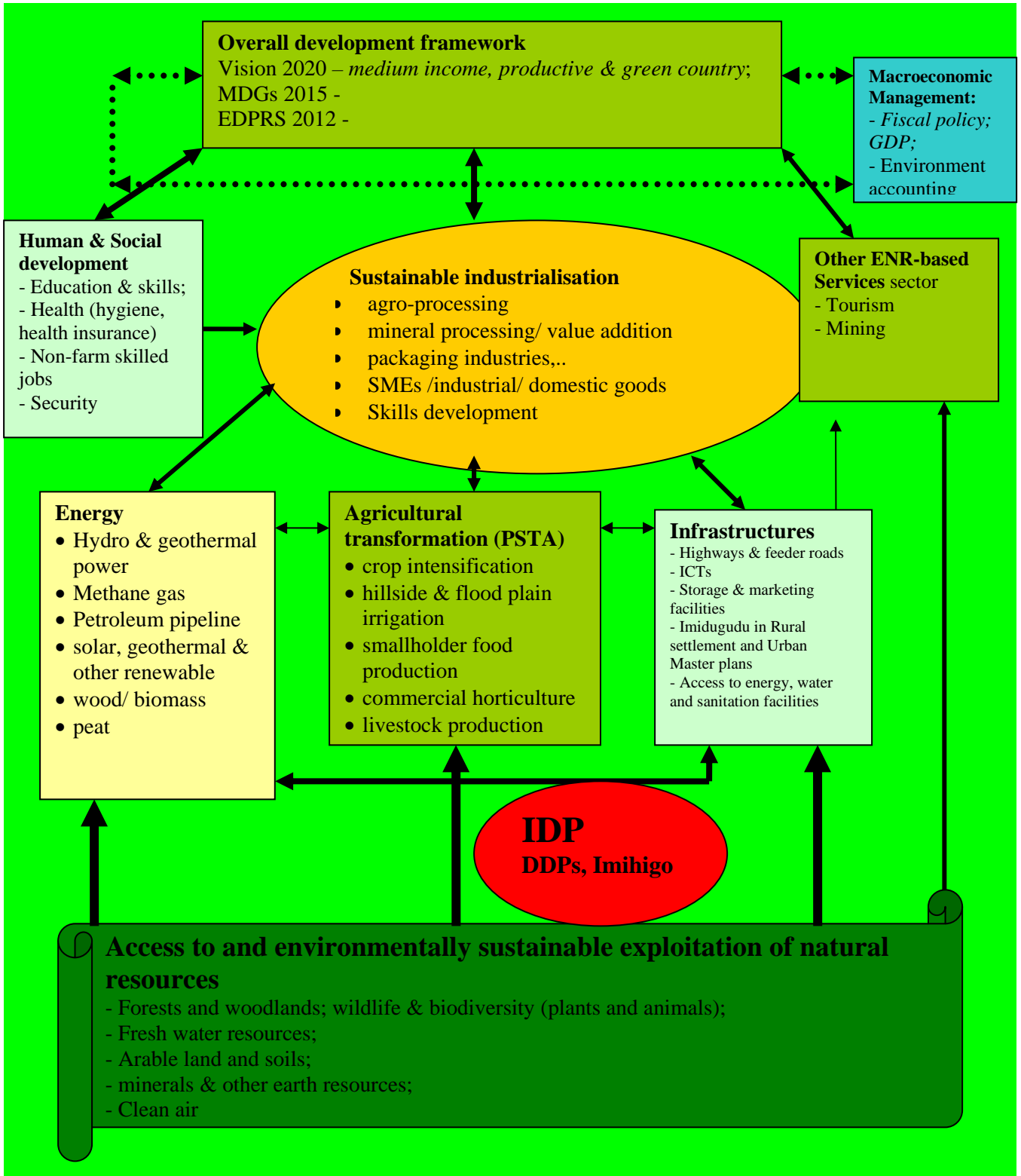
The figure 1 shows the position of ENR sector in the overall national development framework.

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<sup>14</sup> The Rwanda Development Board (RDB) was established by Law No. 53/2008 of 2<sup>nd</sup> September 2008, by amalgamating 6 Agencies or functions i.e.: RIEPA, RITA, ORTPN, CAPMER, Rwanda Commercial Registration of Service Agencies, HIDA and the EIA and Compliance Unit of REMA and the Privatisation Secretariat.

<sup>15</sup> Tourism earnings, mostly from national park visits, amounted to US\$..... in 2008, while export of *Uduseke* baskets brought in US \$ ..... during 2007).

**Figure 1: Visual illustration of the dependency of Key EDPRS sectors natural resources**



Secondly, the SSP also recognises that sustainable environmental and natural resources management hinges on adopting pro-poor approaches – that the poor must be part of and benefit from sustainable natural resources utilisation/management, and that they are shielded from the negative impacts of environmental and/or natural resources degradation. This is based on the well-known and increasingly recognised fact that most of Rwanda’s poor people (both rural and urban) rely heavily on natural resources for their livelihoods, health and security, and have limited alternative options<sup>16</sup>. What this strategic direction entails is the focusing on the poor through interventions that protect their asset base; continued investment in activities that increase or diversify livelihood opportunities for the poor (e.g. HIMO, SMEs,..); promoting collaborative natural resource management and co-investing with the poor (e.g. collaborative/joint management of protected areas, community-based tourism, extending urban water and sanitation services to poor areas, etc.); expanding rural infrastructure and opportunities for appropriate technology adoption, and compensating the poor and non poor who invest in sustainable environmental and natural resource management (especially upstream farmers who invest in soil conservation activities such as afforestation, supporting upstream districts and communities who settle in clustered settlements or Imidugudu, land consolidation and watershed protection programmes, among others). The REMA/PEI demonstration project in Rubaya sector, Gicumbi district is a key example of such programmes that will be rolled out.

Finally, the SSP recognises that sustainable ENR management is dependent on coordination, partnerships and alliances with other government sectors, development partners, the private sector and the civil society so that the links, goals and objectives are aligned, coherent and focused. The adoption of a Sector-Wide Approach (SWAP), which provides a framework for coordinating all institutions and resources supporting the ENR sector, is considered paramount. Considering the multiple interests and actors within the ENR sector, strengthening collaboration, partnerships, alliances and other innovative efforts of Government and non-government actors including donors, research institutions, cooperatives, civil society groups, and the private sector, will be a top priority.

Another important priority of this Plan, will be to strengthen sectoral coordination (intra and inter), develop adequate human institutional capacity to analyse policy issues, elaborate appropriate strategies and plans; mobilise sufficient funding; deploy resources appropriately and use and account for them efficiently; follow-up and guide the implementation of ENR activities. An important aspect of capacity building will be to empower local authorities to translate policies into tangible actions, and sustainable funding; and strengthening institutions

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<sup>16</sup> For example, services like water supply, regulation and purification provided by ecosystems contribute directly to the health of the poor (80% of the disease burden according to Epidemiological Surveillance records are water-related) while fuel-wood continues to provide energy and contributes to the poor income.



to empower local communities to participate in decision-making and sustainable ENR initiatives. Such activities will be vital for planning, policy formulation and implementation.

### 2.2.2 Legislative Frameworks

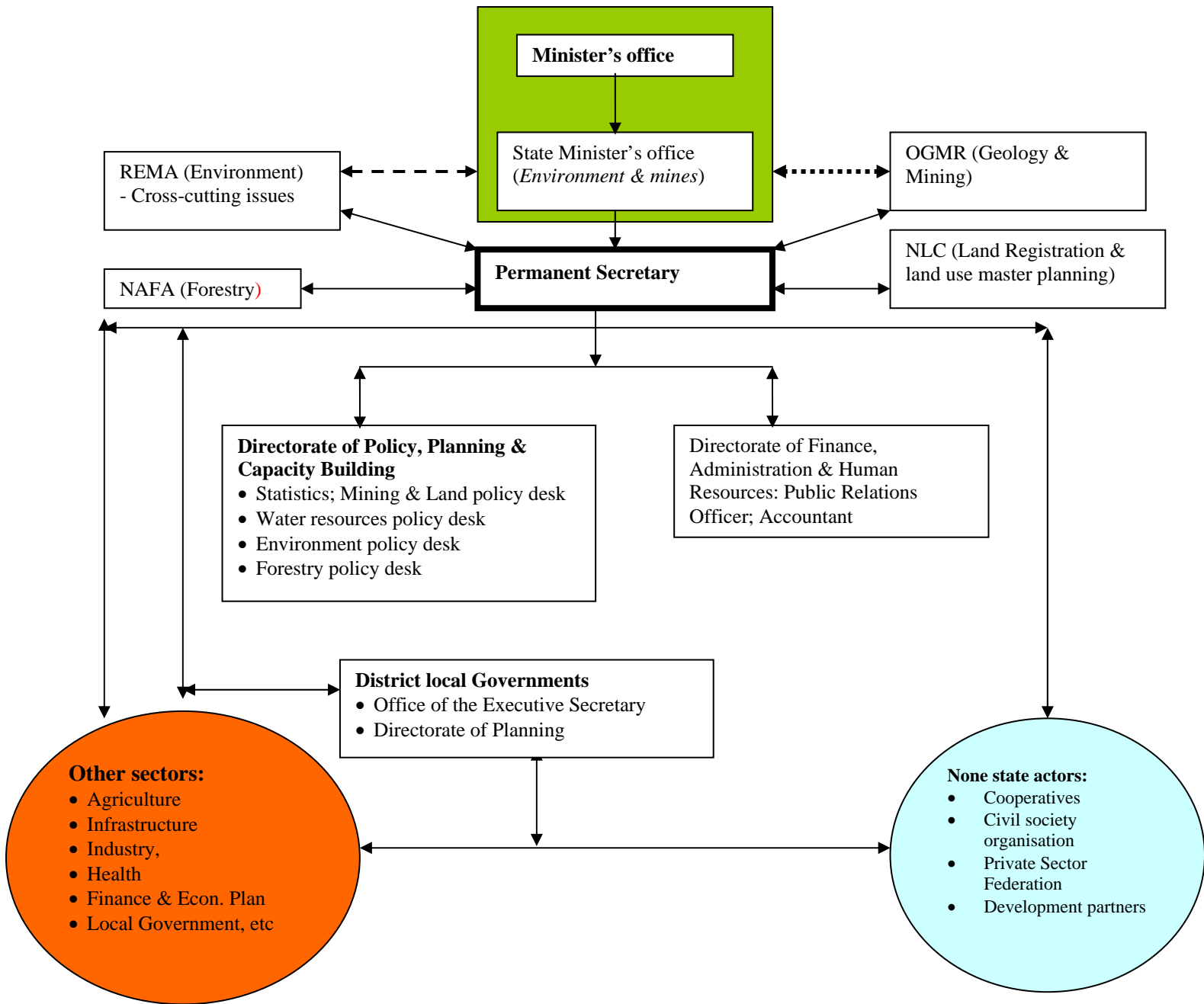
In the last 5 years, the GoR has undertaken fundamental legal reforms in environment and natural resources, which have major implications on their utilisation and management. The main legislations that have important bearing on the ENR include:

1. *The Organic Law determining the modalities for protection and/ or conservation of environment in Rwanda (Law No. 4/2005)* created the Rwanda Environmental Management Authority (REMA) and provided for an environment trust fund (FONERWA), among others.
2. *The Organic Law determining the use and management of land (N° 08/2005 of 14/07/2005)* categorized rural and urban land ownership between public and private, and makes provisions for registration, use and clearly defines land rights and transfer procedures. As part of the enforcement of ownership rights and rational and equitable development, a subsidiary law on expropriation in public interest (Law N° 18/2007) was enacted. Subsequently, land registration and titling; and land use master planning, are key on-going programmes to implement this law.
3. The Law N° 47/88 Governing forestry in Rwanda has been revised. A major change was the creation of the National Forestry Authority (NAFA) established in 2007.
4. Law on mining which regulates mining and mineral processing activities within Rwanda
5. Law on water resources management

### 2.3.3 Institutional Framework

The institutional framework for the ENR sector embraces several departments, agencies and institutions whose interrelationships and linkages are illustrated in the figure 2. Because of the fundamental importance of the ENR sector to the realisation of the EDPRS and Vision 2020 aspirations, the ENR sector's performance will depend very much on the degree to which it maintains functional links with other sectors as much as to its internal coordination. This is reflected by the inclusion of environment in the EDPRS as a cross cutting among only four cross cutting issues (gender, HIV and social protection are the others). The cross cutting nature of environment is reflected by the interlinked activities with other sectors where environmental priorities contribute to the achievements of the sectors in question as illustrated in Annex 5 below.

**Figure 2: Institutional linkages within the ENR Sector**



## 3.0 SECTOR AND SUB-SECTOR PERFORMANCE REVIEW

### 3.1 Status and Trends

#### 3.1.1 Backward looking analysis

Along with MINIRENA, more robust, sub-sector specific institutions have been created – REMA (Rwanda Environment Management Authority) in 2005 for environmental management; NLC (The National Land Centre) in 2006 mandated to undertake land registration, land use planning and management; OGMR (Rwanda Geology and Mines) Authority established in 2007 to carry out geological surveys and regulate mining and mineral development in the country; and NAFA (National Forestry Authority) in 2008 to plan, manage and regulate the forestry sector. In early 2008, the functions of water supply and sanitation were transferred to the Ministry of Infrastructure (MININFRA) and MINIRENA retained the policy and regulatory responsibilities for the water resources. Domestic Water Supply is just one of the demands, others being in industry, agriculture and livestock, energy, recreation, etc.

#### *Key sector achievements*

During the PRSP 1 and in the last 2 years (EDPRS transition period), the ENR sector has made some important achievements, particularly in the areas of:

- ✓ institutional capacity building – restructuring the ministries, creating new agencies, and increasing the human resource capacity across the Ministry as well as the affiliate agencies;
- ✓ putting in place a sound legal framework for ENR governance – in the areas of environmental management; land tenure and land use, forestry, water resources, and mining. These legislations are already being implemented with some impressive results in protection of environment, as well as in enhancing rational exploitation of natural resources in various domains. For instance, the land reform programme has improved security of tenure and facilitated market-based land transactions, thereby assisting to attract private investments in real estate, industry and land-based services, while mining regulatory framework has improved efficiency and value-addition in mining, which has resulted in increasing mineral exports; and the water resources programme has invested efforts in watershed management in collaboration with other major water users such as agriculture where water for irrigation is in high demand;
- ✓ implementing GoR commitments to international multilateral agreements (MEAs) and conventions. The initial communication to the Climate Change Convention Secretariat was made in 2005; reports were also made to the CBD (Biodiversity) and Desertification (UNCCD) Secretariats at different times. This was in addition to active participation in these international meetings/ Conventions' workshops;
- ✓ mainstreaming environmental issues into national and sectoral development plans. Environment is considered, in the EDPRS, as a cross-cutting and stand alone sector, as

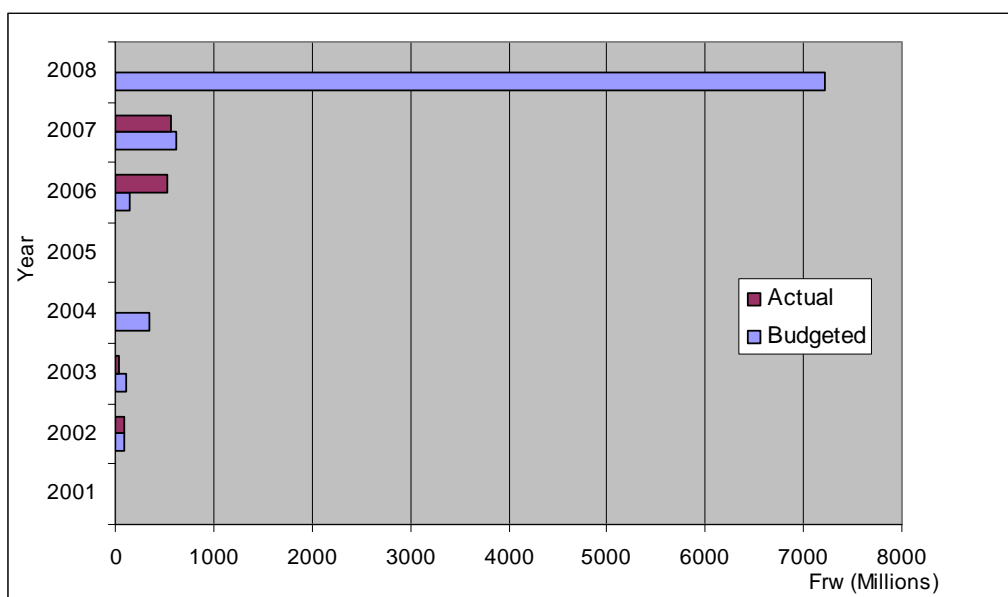
a result of intensive awareness, advocacy and networking efforts of the sector, especially through the Environment and Land use well as Water and sanitation sector working groups that have been active since the formulation phase of the EDPRS.

With these achievements, the basic tenets of environment and natural resources governance are, thus, firmly in place. However, translating these statements of intent into results is the major challenge that the GoR must now embark on. This Strategic Plan will consolidate and build on the achievements made to realise the EDPRS objectives and targets.

### *Financing and financial performance*

Public funding for the sector remains low but has increased slightly over the years, especially since the PRSP 1 period. For instance, the 2008 allocations for the Environment sector accounts for about 1.8% of the total budget of Frw 3,475 billion (MINECOFIN 2007a). This is a marked increase from about 0.2% during 2003. Figure 2 shows the trends in public expenditure allocations to environment since 2001 (note missing 2005 figures).

**Figure 3: Public expenditure on Environment over the period 2001-2008**



Data source: MINIRENA and Annual Progress Reports on PRSP I (2003-2005)

## **3.1.2 Forward Looking Analysis**

### **3.1.2.1 Status of the ENR sector based on selected key performance indicators**

It is envisaged, under the EDPRS, that natural resources utilisation will be enhanced to realise the economic and social transformation targets of various sectors, as summarised in the following table 3:

**Table 3: Key Vision 2020 Targets relevant to the ENR Sector**

Strategic Objective/ target	Indicator	2000	2010	2012 (EDPRS)	2015 (MDGs)	2020 (V2020)
General conditions	Total Population (million)	7.7	10.1			12.71
	GDP/capita (constant 2000 US\$)	220	400			900
	Level of Absolute Poverty (%)	64	40			30
Land productivity & land management	Fertiliser application (kg/ha/annum)	0.5	8			15
	Total land area under cultivation					
	Land titles	0.01%				
	Proportion of urban poor with security of tenure					
Forestry and Agro-forestry development	Area under tree/ forest cover	20.8%			30%	
	Farmland practicing agro-forestry					
	Fuel wood dependency (domestic)	94%				
	Fuel wood dependency (commercial/ industrial)			50%		
Ecosystem rehabilitation/ maintenance	Area of land protected from soil erosion (% of total land)	20	80			90
	% of land under forest cover	20.8%				
	% of land under Wildlife Protected Areas					
	Area of Marshlands reclaimed/ cultivated					
Population pressure on land	Working population deriving livelihoods from agriculture					
Water resources	Water quality					
	Water abstraction (m3 pa, million)					
	Agriculture; Hydropower development Industry.		372.7 ? 2.9		605.6 ? 4.5	838.5 ? 6.1
Housing and Settlements	% of urban population living in organised housing					

Source: MINECOFIN, 2003; MININFRA; MINIRENA  
[http://www.minirena.gov.rw/IMG/pdf/EDPRS\\_UEA\\_aout\\_2006\\_DRAFT\\_1.pdf](http://www.minirena.gov.rw/IMG/pdf/EDPRS_UEA_aout_2006_DRAFT_1.pdf)

In table 4, a selected set of key performance indicator baselines (for 2007) and target figures (for 2012) are documented.

**Table 4: Selected key EDPRS indicators and targets with implications on the ENR strategy**

Thematic area	Key Indicator	Baseline 2007	Progress 2008	Target for 2012
Income/ Economy	Real GDP growth	6.3%		8%
Livelihoods	Poverty	56.9%		46%
	Extreme poverty	36.9%		24%
	National investment (% GDP)	17%		27%
	Exports growth	8%		15%
	Private sector credit (% GDP)	10%		18%
Livelihoods	Employment in agriculture	80%		70%
Energy	Electricity generation	41 MWh		114 MWh
Infrastructure	Road network in good condition	41%		80%
“	ICT (composite network coverage)	4%		20%
Water	% access to clean water	64%		80%
Agriculture	Soil conservation (% agric. land terraced)	40%		80%
“	Use of mineral fertilizer (kg/ha)	8kg		12kg
“	Irrigation (ha of land)	130 ha		1,051 ha
Health	Infant mortality (percentage of live births)	8.6%		7.0%
“	Maternal mortality (per births)	0.75%		0.6%
“	Mutual health insurance coverage (% population)	43%		100%
“	Children immunized	75%		100%
Population growth	Women using modern contraception	10%		70%
Education & HD	Secondary net enrolment	10%		40%

*Source: Habimana A., June 2007. EDPRS Presentation*

### **The potential contribution of the ENR sector in achieving goals under EDPRS flagship programmes**

The expected contributions of the planned ENR strategic interventions to the realisation of the EDPRS flagship programmes can be illustrated using the following examples. It is important to reflect on the likely implications of other sectors' targets in the forward looking analysis in order to build a rationale for the programmes, plans and activities to be implemented.

*1) Natural resource base and agricultural transformation:* The performance of the Rwandan economy depends mainly on the production of the primary sector, which almost entirely depends on the natural resource endowments – agriculture, (agro-based.), tourism (based on protected areas), industry (agro-processing, mineral processing,..). Macroeconomic indicators are, for instance highly sensitive to food production and few cash crops (coffee, tea,..) which are the main exports. Inadequate and unreliable rainfall adversely affected the performance of the agricultural sector in 2003 and 2004. Again during 2006 and 2007, the performance of the sector was affected by weather and agro-input distribution challenges. The Strategic Plan for Agricultural Transformation (SPAT/PSTA) envisages large-scale irrigation to mitigate drought, and intensive use of external agro-inputs (fertilisers, pesticides) to address soil productivity and pests and diseases, respectively. These have direct bearing on the sustainable use of natural resources including prevention of point and non point pollution.

2) *Expanding and sustaining ENR-based non-agricultural employment*: the strategic vision of the GoR to reduce agricultural employment to 50% of the population (Vision 2020) will, in part, be met by expanding opportunities in the services and industrial sectors. In each of these, there will be substantial opportunities resulting from conservation and proper management of natural resources - tourism and recreation, ENR-based SMEs including waste recycling and artisanal mining, agro-based industries, etc. This ENR strategy includes strategic interventions to enhance such opportunities for current and future generations.

3) *Access to natural resources and links with reconciliation, peace building and conflict transformation*: the GoR's efforts at restoring justice and reconciliation in the aftermath of the 1994 genocide have registered impressive results, and one area where innovative governance approaches were used is access to land and natural resources, as well as establishing conflict resolution structures like Abunzi. The GoR recognises, nonetheless, that conflict around natural resources scarcity especially land, might undermine such hard earned results if not effectively and sustainably addressed. A comprehensive land governance framework (land registration as an instrument of land administration, land tribunals, land use planning,..) has been designed and will be consolidated under this SSP.

4) *Environment and health*: the link between environment and health is better reflected in the epidemiological records that show most health problems as caused by or related to environment factors (malaria, diarrhoeal diseases, malnutrition,). Ensuring access to clean water and to adequate and well balanced diets, is therefore as important to the health sector as it is a concern of the natural resources management. Thus, the health sector has a key role in addressing environmental challenges.

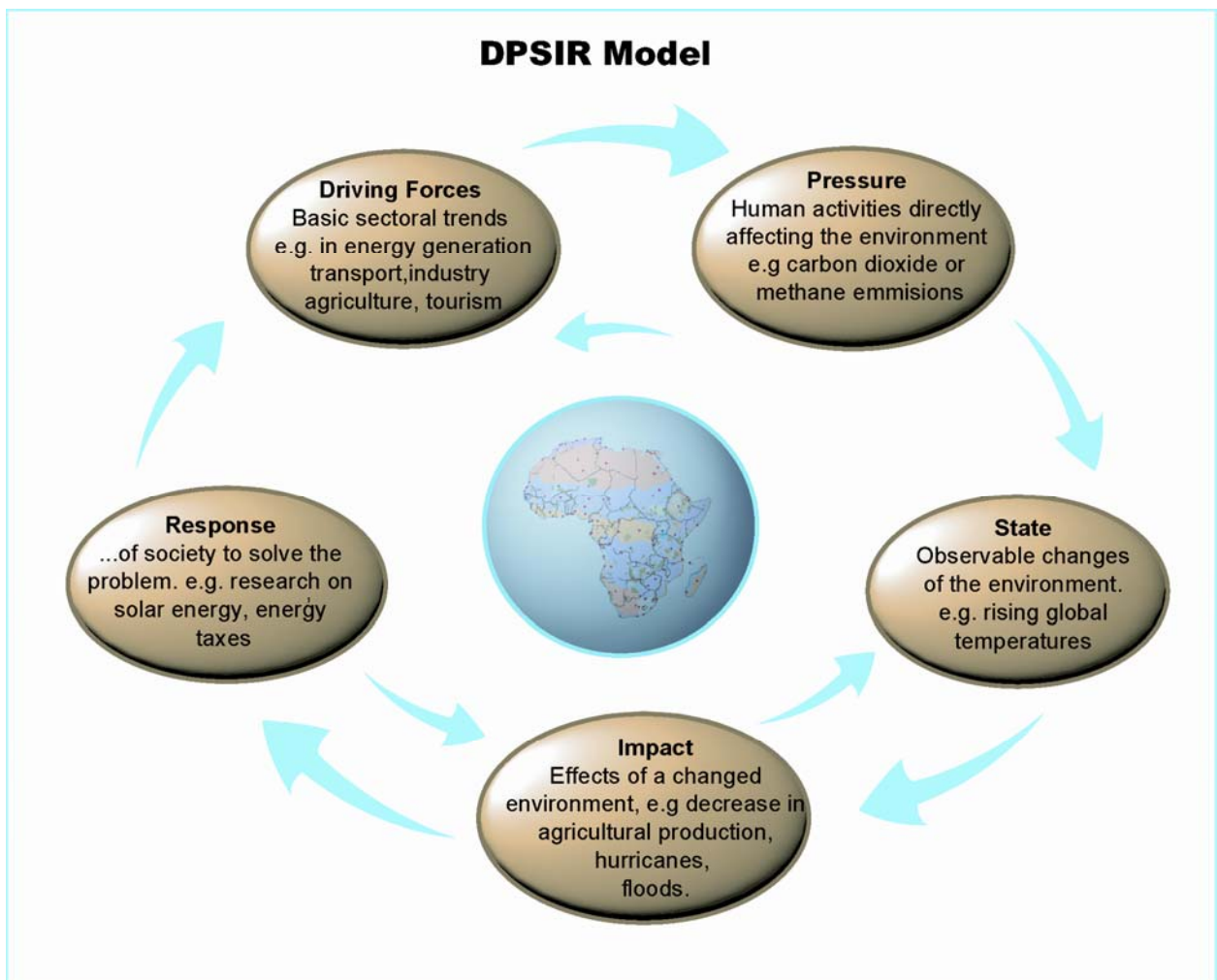
5) *Disaster prevention and mitigation*: In the recent past, the country's economy and livelihoods of the population in various parts (especially in the northern and western provinces), have been affected by disasters such as floods, earthquakes, landslides and drought, among others. The planned interventions under this SSP, viz: rehabilitating critical ecosystems; promoting optimal and productive land use including re-organising human settlements, afforestation and better water resources management, intensifying value addition to minerals, and integrating environmental sustainability issues in all sectors, are expected to address such challenges.



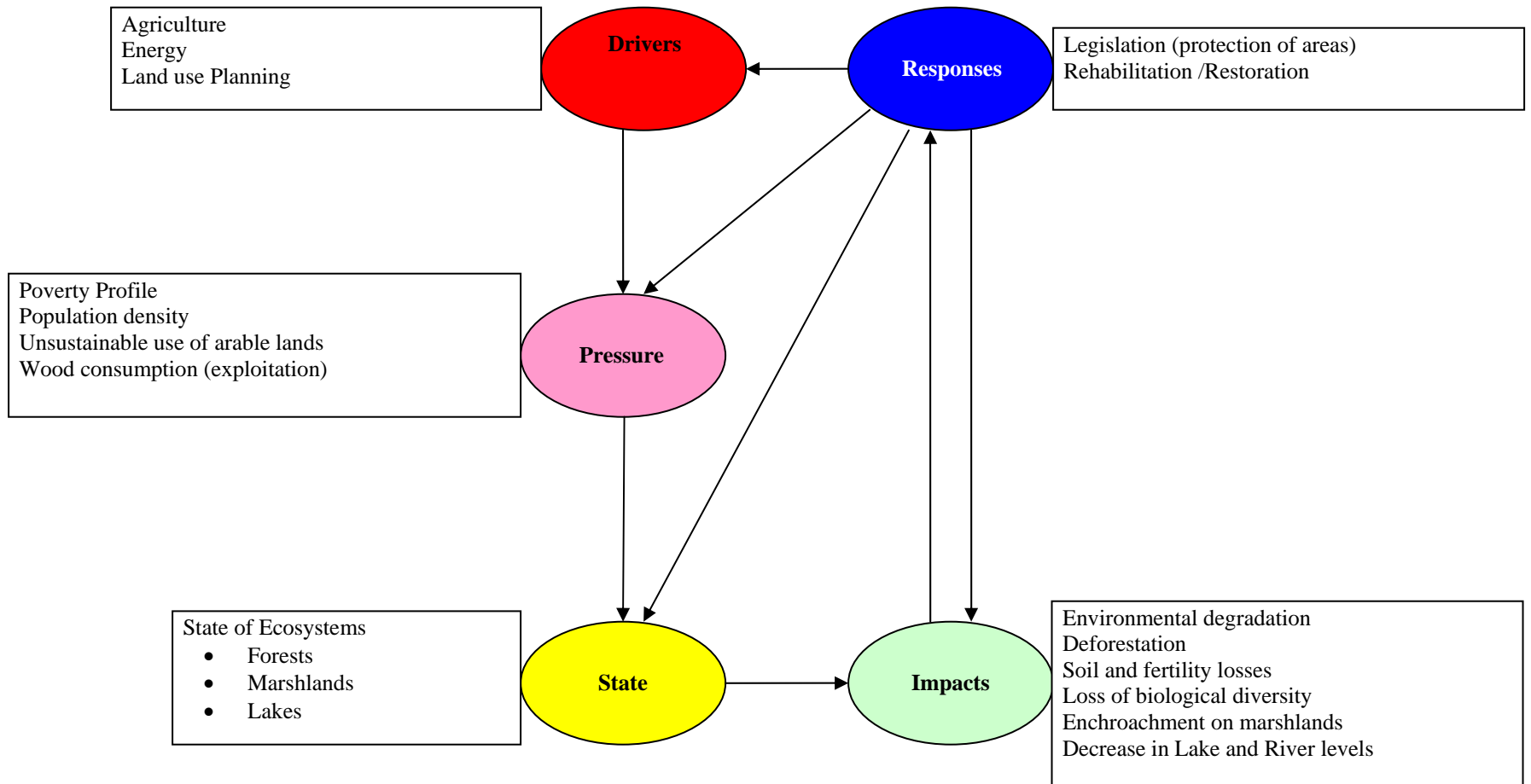
### 3.2 Sector SWOT Analysis

The Drive-Pressure-State-Impact-Response (DPSIR) model is used to establish causal links between economic activities and the environment and the impacts on livelihoods. The DPSIR model can be used as an analytical framework for assessing ENR issues. This allows a comprehensive assessment of the issues through examination of the relevant **Driving forces** and **Pressures** on the environment, the consequent **State** of the environment and its **Impacts**, and the **Responses** undertaken, and of the interlinkages between each of these elements as the diagrammatic scheme below illustrates. This model, therefore, is instructive in the SWOT analysis for the ENR sector. The indicators associated elements of the model viz: Driving forces, Pressure, State, impacts and responses are instrumental in the analysis of Strengths, weaknesses, opportunities and threats.

**Figure 4: Standard DPSIR model**



**Figure 5: DPSIR Model and implications for ENR in Rwanda**



### 3.2.2. A Summary of the strengths, weaknesses, opportunities and threats for the sector

The SWOT for the ENR sector is summarised in the following table

**Table 5: Summary of the SWOT for the ENR sector**

<p>Strengths</p> <ul style="list-style-type: none"> <li>✓ Strong political will</li> <li>✓ Appropriate institutions with policy &amp; legal backing</li> <li>✓ Growing public awareness of ENR issues</li> </ul>	<p>Weaknesses</p> <ul style="list-style-type: none"> <li>◆ weak institutional capacity (lack of appropriate systems &amp; structures);</li> <li>◆ weak coordination- state and non state institutions not coordinated</li> <li>◆ Inadequate human resources (skills)</li> <li>◆ Lack of sustainable financing strategy</li> </ul>
<p>Opportunities</p> <ul style="list-style-type: none"> <li>✓ Regional integration</li> <li>✓ Donor support</li> <li>✓ ENR Stakeholders desire to collaborate &amp; work in coordinated manner;</li> </ul>	<p>Threats/ Barriers</p> <ul style="list-style-type: none"> <li>◆ Unreliable donor funding commitments;</li> <li>◆ Low level of awareness about environment</li> <li>◆ Regional integration</li> </ul>

The proceeding subsections (3.2.2 and 3.2.3) expound on the main opportunities for the ENR SSP outlined in table 3 above, and the challenges that must be addressed for the sector plan to realise its objectives.

### 3.2.3 Major Strengths and opportunities

The ENR sector’s key strengths can be analysed from the broad national perspective as well as sector-specific issues:

*a) Strong political will and commitment to environmentally sustainable development:* there is strong and proven political commitment at the highest level of Government to address environmental and natural resources management concerns. This rare opportunity will be important for the realisation of the ENR strategic objectives, given that across the developing world, the need to realise economic growth has often resulted in difficult trade offs where long term environmental goals are sacrificed to realise economic returns.

*b) Solid institutions for ENR have been established:* over the last 5 years or so, the GoR has established and has been building capacity of national and decentralised public institutions with responsibilities for policy formulation, planning and implementation and monitoring of ENR sectors. REMA was put in place in 2004; ORTPN has been restructured creating separate agencies for wildlife management and tourism, and in September 2008 merged as part of the RDB; a National Forestry Authority (NAFA) was created in 2008 as was Rwanda

Geology and Mines Authority (OGMR). It is expected that a National Water Agency will be established. Other support agencies are the RBS and RURA on the regulatory side. These constitute a solid institutional framework for ENR governance if they are well coordinated. It is hoped that the current process of forming a board that will oversee management of natural resources with REMA remaining independent to exercise the regulatory mandate over the ENR will provide sufficient scope for effective implementation of stated objectives of the strategic plan.

*c) Existence of decentralised structures for policy implementation:* all ENR activities are decentralised, and there are formal and informal structures from district up to the lowest levels with responsibilities for management of natural resources e.g. environment committees; land tribunals; water user committees, mining cooperatives, etc.

*d) Legal framework for financial resource mobilisation – National Environment Fund* is legally established by the Organic Law on Environment, and if operationalised, Rwanda will have opportunity to mobilize sustainable funding.

*e) The recently established policy and legislative framework has already established a supportive environment and firm ground* for the ENR interventions to be implemented without structural barriers like conflicting interests from other sectors.

***f) There are already a number of on-going programmes and projects in the key ENR sub-sectors, on which future interventions must build.*** The major programmes/ projects are summarised as follows:

*i) Land tenure reform and land use planning:* MINIRENA through the National Land Centre has rolled out the land tenure reform programme covering land registration and titling of all rural and urban land in the country. Although still at pilot phase, it has already yielded some results. First, it has facilitated land transactions, which is a critical incentive for attracting investments and increasing productivity. Secondly, under the land reform programme, a comprehensive land use master plan is being formulated. It is comprehensive in that it includes detailed mapping through aerial surveys and soil suitability assessment. This will facilitate better planning and rational land allocation, as well as enable more optimal and productive use of land resources, that is pivotal to rural transformation and orderly urban development as envisaged in the Vision 2020.

*ii) Mainstreaming environment and natural resources sustainability into sectoral and decentralised planning processes:* The EDPRS emphatically points out environmental sustainability as an important prerequisite for realising the EDPRS and Vision 2020 objectives. Subsequently, environmental integration into planning, programme/ project design and budgeting frameworks, is now regarded a priority. REMA has, through various projects<sup>17</sup>, embarked on sensitisation and capacity building of sectoral and district planning units, to integrate environmental sustainability issues into their strategies; district

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<sup>17</sup> The UNEP/UNDP funded poverty environment initiative (PEI) has developed several guiding tools and is conducting a series of training and demonstration projects for sectoral and district officials in key areas of development. The training also covers some private sector and civil society representatives. DEMP (The Decentralization and Environmental Management Project) has assisted all the 7 districts of the Western province to establish local actions aimed at conserving natural resources including protection of river banks and lake shores around Lake Kivu.

development plans (DDPs), Performance Contracts (*Imihigo*) and their corresponding budgets. The main aim is to ensure sustainability of development programmes as envisaged in the MDGs (especially MDG 7) and Vision 2020.

*iii) Forest rehabilitation and strengthening the forestry sector:* The GoR has restructured the forestry sector and is strengthening its institutional capacity to increase production of timber and other wood products and to enhance forest services for catchment protection and change adaptation. A national forest inventory has been undertaken, and a tree planting programme is being implemented to increase forest and agro-forestry cover to at least 30% of the land area.

*iv) Water sector reform:* at the end of 2007, the water sector was restructured and water supply and sanitation functions transferred to the Ministry of Infrastructure (MININFRA) while MINIRENA retained the resources management and regulation functions. A new National Water Board has also been established and there are ongoing efforts to strengthen the policy and regulatory framework. This is necessary to enable the country manage the increasing multiple interests at local, national and trans-boundary levels. This plan will build on existing initiatives to strengthen water governance.

*v) Revamping the mining sector:* the EDPRS anticipates increased mineral output and more than double the returns from mineral exports under the EDPRS strategy of export diversification. To address these challenges, the GoR established the Rwanda Geology and Mines Authority (OGMR), has put in place a new mineral code and is reviewing the mining policy, to set clear targets for promoting productive and environmentally sustainable mining. Recognition of the mining sector among key foreign exchange earners is a remarkable achievement of the ENR sector. , but on the other hand also constitutes a challenge because of potential degradation and pollution.

*vi) Increased investment in innovative technologies including renewable energy, energy use efficiency:* the Kivu methane gas plant is expected to result in reduced electricity cost (from US Cents 24 to US Cents 14 per KWh); there are also efforts to invest in energy use efficiency, with a specific focus on biomass use (promotion of fuel-efficient cooking stoves,) and promoting biomass alternatives.

Major opportunities to be taken advantage of include:

- *Growing regional integration and transboundary resources management:* Having ascended to the East African Community (EAC) and at the same time being a member of the Economic Community of the Great Lakes Countries (CEPGL), Rwanda is strategically located to be a gateway to both the Eastern and Central Africa. This geographical and historical positioning is important for regional trade (that will facilitate creation of non agricultural employment). It is also an opportunity to address trans-boundary ENR issues as most of its important natural resources such as protected areas, water resources, forests,

wetlands and fisheries are located in or affected by trans-boundary ecosystems. Rwanda's EAC membership provides opportunity to tap into regional agricultural and natural resources research networks, as well exchange of knowledge and skills. Following ascension to the EAC, Rwanda has started integrating its systems and processes into the EAC structures, which have triggered, among others, legal, policy and institutional reforms. This strategic plan will contribute to ensuring that the regional integration reform processes relating to ENR issues, are successfully undertaken.

- *International recognition and good practices* - Rwanda's commitment to implementation of international environmental conventions and agreements, constitute an avenue for mobilizing resources for sustainable ENR management. Rwanda's location between two internationally known river basins (the Congo and the Nile) puts it in a unique position to participate more actively and powerfully in the resource governance processes.
- *Renewed international interest in sustainable development, which provides opportunity to mobilise and attract external financing as well as technical support in environment and natural resources management.* The clean development mechanism (CDM) a framework for industrialised countries to offset their carbon emissions was designed under the Framework Convention for Climate Change (UNFCCC). This CDM, which is becoming operational in Rwanda, has established carbon markets through which substantial funding for activities such as tree planting, cleaner and efficient industrial production, etc.
- *Ratification of international environment conventions:* Rwanda has ratified most international conventions on environment (Annex 4). Many of these international provisions have informed or been integrated in the environmental legislations.
- *Project financing opportunity from multilateral agencies.* Since 2003, there has been considerable increase in donor support to environment and natural resources sector (UNDP, UNEP, AfDB and GEF through UNDP and World Bank), Land Reform Programme (DFID). This notwithstanding, the resources provided are still too little, over short periods, which exacerbate the challenges of management, coordination and synergy among projects. Opportunities, however, exist for MINIRENA to improve coordination and policy guidance to enhance effectiveness and efficiency in ENR management.

### **3.2.4. Major Challenges**

The implementation of the ENR sector strategic plan is, however, likely to be undermined by a number of challenges:

*1. Inadequate financing:* sector budget allocations may be inadequate, resulting in cut-back of the programme priorities. External project funding, which constitute a sizeable proportion of the anticipated expenditure, may also not come forth as expected and could be so unpredictable that programme based planning for effective management of ENR may be hampered;

2. *Weak institutional capacities* (institutional systems, horizontal and vertical networks, human resources,..) may slow down the implementation of the planned programme activities. It may hinder mobilisation of resources and create a risk of funding backlash if the resources allocated to the sector are not absorbed.

3. *Support from other partners and stakeholders* – pressure from other natural resources-based sectors to realise their targets may affect the pace at which inter-sectoral collaboration is fostered.

## 4.0 THE ENR SECTOR STRATEGY 2009 - 2013

### 4.1 Mission and objectives

As the custodian of the country's natural resources, on which development in Rwanda is anchored, the ENR sector will provide policy guidance, strategic direction and technical support to all stakeholders to ensure that the country's natural resources are utilised and managed in a manner that ensures sound economic development, equitable and socially responsive development and ecological sustainability, cognisant of the aspirations of the present and of future generations.

**Sector Mission:** The mission of the Sector is *“to ensure the optimal and sustainable utilization of natural resources for economic development and poverty reduction in Rwanda by providing enabling framework, economic incentives, partnerships and capacities for action.”*

The **overall objective** of the ENR Sector Strategic Plan is to ensure that environment and natural resources are utilised and managed productively in support of equitable and sustained national development in line with the EDPRS targets and Vision 2020 aspirations.

#### **Specific objectives:**

1. To promote equitable, productive and sustainable use and management of land resources by controlling land degradation, enhancing security of tenure and improving productivity and administration through technological and market-based systems;
2. To ensure that the country's water resources are conserved and sustainably managed in an integrated and equitable manner for the continued and balanced support to economic, social and ecological needs at local, national and transboundary levels;
3. To ensure adequate and sustainable supply of forest and biomass resources to meet the growing multiple demands for food, fibre, fodder, fuel as well as environmental services, by increasing forest and tree cover, improving utilisation efficiency and promoting alternatives to wood and non wood forest and tree products;
4. To promote productive, equitable and environmentally friendly utilisation of the country's mineral and other earth resources, by promoting efficient and value-adding technologies, raising awareness and skills of key actors about the consequences of unsustainable mining, and options for sustainable minerals exploitation;
5. To restore, conserve and sustainably manage key ecosystems to ensure continued and enhanced integrity and functioning of Rwanda's diverse ecosystems in terms of productive and regulatory services provided at local, national and international levels;
6. To promote sustainable development by raising awareness of and integrating environment and natural resource management principles and techniques across all key social and productive sectors of the EDPRS;
7. To strengthen policy and legislative frameworks for sustainable management of environment and natural resources, by harmonising policies, legal and regulatory instruments within/ across sectors and with regional and international frameworks; as well as putting in place incentives for effective implementation and oversight;
8. To increase human and institutional capacity, at national and decentralised entities, within civil society and private sector, as well as community levels, for effective planning, coordination, implementation and monitoring of ENR activities;



## 4.2 Sector Strategies, Actions and expected outcomes

In order to realise the objectives stated in 4.1, and in line with the EDPRS this SSP has identified a number of strategic interventions in the ENR sector and across other key sectors, outlined below. The detailed programmes and targets are in Annex 2 and Annex 3.

*1. Promote sustainable land management by consolidating land tenure and land use reform in both urban and rural areas:* the ENR sector plan will support the popularisation and implementation of the land sector strategic plan, especially in the areas of land tenure reform; and land use planning to enhance productive and sustainable use of land resources;

*2. Promoting integrated water resources management (IWRM):* under this strategy, the focus will be on developing institutional capacity to conserve water resources by taking stock of available water resources *vis à vis* the needs; protecting the watersheds to ensure quality and sustainability; monitoring the quality and rates of abstraction (utilisation) and reconciling the multiple interests of water resource uses. The IWRM strategy will enable holistic and coordinated management of water, and is in line with the new mandate of MINIRENA, i.e. to concentrate on water resources management.

*3) Rehabilitating critical degraded ecosystems:* the achievement of the EDPRS objectives will depend on how healthy Rwanda's diverse ecosystems and their unique biodiversity are maintained. Ecosystem degradation threatens to undermine the national targets in tourism, food and ecological services. The ENR sector will undertake to rehabilitate degraded ecosystems to restore their productivity levels and put in place and implement measures for sustainable conservation.

The analysis of these strategies, their anticipated outcomes, specific activities and likely risks are discussed in a logical flow in the attached matrix (see Annex 1).

*4) Intensifying and sustaining forestry and agro-forestry activities:* to increase forest and agro-forestry cover to at least 30% of the land area, a vision 2020 target; a number of activities will be undertaken:

- a) Afforestation programmes in all districts including protection of critical micro catchments;
- b) Adaptive research for suitable agro-forestry and farm forestry species, and agro-forestry extension services;
- c) Fuel wood efficiency improvement and technologies to provide alternatives to wood and tree products;

*5) Improving the Mining sector:* The EDPRS targets to realize a fourfold increase in mineral exports from US\$ 38 million in 2005 to US\$ 106 million by 2012, and increase employment from 25,000 to 37,000 of which up to one-third being women.

*6) Mainstreaming ENR sustainability principles into sectoral strategies, plans and budgets as well as in District Development Plans (DDPs) and Action plans (Imihigo);*

7) *Promoting environmentally sound and sustainable macroeconomic management practices through appropriate policy and legislative reforms in fiscal policies and others;*

8) *Strengthening institutional capacity for effective sector coordination at national and decentralised levels:*

- Review and harmonize legislations (sector and sub-sector laws, regulations,..);
- Strengthen institutional performance for effective coordination framework in support to ENR implementation at central and decentralized levels. This is particularly critical in ensuring the integration of ENR priorities in productive sectors such as agriculture and Energy.
- Establishing a SWAp (Sector-wide approaches) framework for the ENR sector that ensures participation of non-state actors in contributing to the ENR sector performance;
- Strengthening the M&E framework towards successful implementation;

The key targets and sub-programmes for the above objectives are summarised in the proceeding sections.

### **4.3 Sector Programmes and sub-programmes**

This section presents the actual programmes, plans and activities to translate the strategies proposed in 4.2 above into results. These programmes are outlined in the proceeding sections and detailed in the logical framework matrix in Annex 1. It should be noted, however, that detailed discussions and presentation of activities will be in the respective sub-sector plans.

#### **4.3.1 Integrated Land Management Programme**

Productive, equitable and rational use of the scarce land resources is a key priority of the GoR for realising the poverty reduction and economic targets of the EDPRS. The priority interventions under this programme are geared towards addressing barriers associated with land to enhance productive use of land use will include the following:

1) *Reforming the Land tenure and land administration* - registration and titling of public and private land so as to improve security of tenure; strengthening land tribunals; and improving commercial land transactions;

2) *Land use planning and sustainable land management*– will focus on implementing the land use master plan, including urban development master plan, with the overall objective of optimising productive land use and combating soil erosion.

#### **4.3.2 Integrated Water Resources Management (IWRM) Programme**

Under the EDPRS, water will be an important resource in the economic growth agenda (hydropower production, irrigated agriculture, transport, industry, recreation and tourism), as well as social development (e.g. hygiene) and ecological functioning. To realize the EDPRS targets for integrated water resources management, this SSP has included the projects and activities, under the following sub-programmes:

1. *Institutional & legal framework* for integrated water resources management (IWRM).

This is of particular priority from three perspectives:

- a) increasing interests in water for economic growth under the EDPRS (water for irrigation, power generation, recreation, industry);
- b) trans-boundary interests especially in the Congo, Nile, Lake Victoria and Kagera Basins in which Rwanda is a key upstream country;
- c) addressing emerging challenges related to ecosystem functioning and sustainability including desertification and other climate change concerns;

The water law reform and regulatory setting will include, among others, setting user fees for commercial water abstraction; regulatory water quality standards to promote efficiency by encouraging commercial farmers, industrialists, hotels and other large scale water users to adopt such measures as water recycling and efficient technologies in irrigation, cleaning, etc.

2. *Assessment and monitoring* of water resources (quality & quantity monitoring): Infrastructure and human resource capacities will be developed to enable regular and continuous monitoring of the country's ground and surface water resources, and ensure that this information is fed into the decision making process.

3. *Assessment of Water balance* and regulating water use by different economic and social sectors;

4. *Watershed & water catchment* protection/ conservation targeting densely populated, intensively cultivated and upstream areas;

### **4.3.3. Forest Management and Afforestation Programme**

The forestry sub-sector programme will address the EDPRS priorities for increasing forest cover to 30% of the national land area (for mostly protective and regulating functions) and to provide adequate and sustainable supply of wood and non wood products; and reducing wood dependency (and associated pressure on forest resources). This will be done by implementing the following sub-programmes and activities:

- a) Afforestation and reforestation programmes in districts, targeting:
  - bare hills, drought-prone areas and other fragile landscapes;
  - public land in all districts, sectors and cells, including that held by institutions such as schools, research institutions, disciplined forces (prisons, police, army);
  - farm forestry (private wood lots), institutional forests/ woodlots;
  - ornamental forestry – homesteads, along roads, designated urban green spaces;
- b) Rehabilitation of existing natural and planted forests through enrichment planting; silvicultural operations; and forestry protection mechanisms, as in critical micro-watersheds;

- c) Promotion of wood use efficient technologies and alternatives to wood products (focusing on adoption of institutional, industrial and domestic users) both in construction, energy and other uses, to reduce pressure on forests and tree resources;
- e) Agro-forestry programme to integrate multipurpose tree species in farming activities – owing to the land shortage constraint;
- f) As a support sub-programme, innovations in adaptive research and extension services will be promoted to identify and propagate high yielding, fast growing and environmentally compatible tree and shrub species;

#### **4.3.4. Sustainable mining and increased mineral production development**

To translate the strategies in 4.2 above for the mining sector, the Rwanda Geology and Mines Authority (OGMR) will undertake the following activities, to realize the EDPRS targets for the mining sub-sector:

- Intensify minerals exploration and mapping;
- Invest in modernizing facilities that will facilitate applied research on mineral prospects, value addition and environmentally sustainable mining and mineral processing technologies;
- Capacity of artisanal miners for value addition , efficient and environmentally friendly mining operations;
- Support to private sector in processing (value addition and quality assurance),
- Build institutional capacity for ongoing improvements in mineral processing, regulation and monitoring of mining, and export activities.

#### **4.3.5 Cross-cutting Interventions/ activities**

As environment is also a key issue that cuts across all key development sectors of Rwanda, a key priority for this plan is to mobilize the different sectors to, not only consider environment in their plans and activities but to actively monitor significant benefits to sector performance in terms of resource use efficiency, resource conservation, reduction in inputs and overall revenue enhancements resulting in sustainable productivity. Various tools were developed in the course of the EDPRS formulation to facilitate effective integration of environmental priorities in sector activities<sup>18</sup>. Interventions to be undertaken in this respect include:

***1. Environmental education and awareness across national and local levels:*** REMA will implement a comprehensive environmental education and awareness strategy, entailing:

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<sup>18</sup> Mainstreaming guidelines were developed as part of the studies under poverty Environment Initiative with the objective of identifying sector specific interventions to enhance environmental sustainability. Various tools for integrating environment as a cross cutting issues at the sector and local levels were further developed in participatory forums in the course of the EDPRS formulation. One of the tools is here included as appendix 5.

- formulation and implementation of environmental education curriculum in formal and non formal education (adult literacy and functional literacy programmes);
- multi-media strategy of information, education and communication (IEC) including production of audio and visual documentaries; publications and publicity materials;
- organizing shows and exhibitions on environmentally friendly production, distribution and service provision by traders, farmers, cooperatives, industrialists, hoteliers, micro, small and medium enterprises (SMEs) promoting good practices in environmentally sustainable/ compatible business, commercial and industrial development.
- public environmental education and training including application of Environmental and Social Impact Assessment (ESIA) and Strategic Environmental Assessment (SEA) and green accounting; as well as links with conflict, gender and social vulnerability.

**2. Institutional Capacity strengthening:** REMA and MINIRENA will conduct capacity building activities for public and private institutions; civil society organizations; private sector agencies and other stakeholders, to enable them integrate environmental issues into their policies, plans, strategies and budgets. This capacity building will include provision of tools, techniques and, where necessary and appropriate, resources to effectively undertake environmental integration:

- MINIRENA's institutional capacity for policy formulation, planning, budgeting and coordination, M&E and follow-up;
- Decentralized ENR offices (district environment, forests, agriculture,).

Capacity Building will also be conducted across the various ENR sub-sectors

**3. Law enforcement and monitoring:** REMA will provide technical support to the Justice, Law and Order institutions to establish or strengthen the environmental crime detection, prevention and enforcement in the context of the Organic Law on Environment and relevant subsidiary legislations and standards.

**4. Cross cutting issues with mining:** All mining projects must be assessed for environmental impacts and environment management plans developed to support sustainable mining operations. Investment and employment with gender and youth sensitivity including putting in place measures to prevent employment of children and a strategy for prevention of communicable diseases (eg AIDS), particularly for large scale mining operations will ensure that nationally recognized cross cutting issues within the context of the EDPRS are duly recognized and will contribute to improved performance of the sector.

## **5. THE SSP IMPLEMENTATION FRAMEWORK**

### **5.1 Institutional Roles and Responsibilities**

The degree to which this plan gets translated into results will depend on the robustness of and functional coordination between the implementing institutions. Clarifying institutional roles is an essential first step in enhancing coordination. This section outlines the roles and responsibilities of the key ENR institutions in the implementation of the ENR SSP.

#### **5.1.1 Central Government Ministries and Agencies**

##### *ENR Ministries and Agencies*

**1. MINIRENA** is the central Government Ministry responsible for ENR policy formulation and implementation, coordination and monitoring. MINIRENA has 4 main roles i.e.:

- 1) Providing leadership through policy formulation and sector coordination to all actors;
- 2) Ensuring that sustainable natural resources and environmental management principles are mainstreamed in all policies and programmes;
- 3) Programming, Information and Communication for better utilisation and development of natural resources and environment;
- 4) Monitoring and Evaluation of Natural Resources and Environmental Programmes.

The Directorate of Policy, Planning and capacity building will be responsible for monitoring and follow-up, providing technical and operational support to district offices. It will also, through sub-sector professionals, liaise with specialised agencies including REMA in the follow-up and monitoring of specific programmes or sub-programmes. There are active discussions on the modalities new arrangements in which a board will be formed to oversee natural resources management and only REMA will remain an independent agency to ensure regulation of the environment and natural resources use to ensure sustainable utilization of the ENR.

The main institutions/ agencies linked under MINIRENA oversight which have specific responsibilities for the implementation of this strategic plan are summarised as follows:

1. **National Land Centre (NLC)** is responsible for land administration and land use planning both in the urban and rural areas. Pilot land registration activities have been undertaken in 3 districts, and the exercise will be fully rolled out during the next 2 years. The NLC is also coordinating the land use planning process, which is a comprehensive process expected to develop a framework for optimal, productive and sustainable management of land resources – a key outcome of this strategic plan.

2. **National Forestry Authority (NAFA)** was established in 2007. NAFA is a semi-autonomous institution responsible for policy, planning and promotion of forest activities. However, the law formally establishing NAFA has only recently been elaborated, NAFA is ready to fulfill its mission. Under the present forest sector strategic plan, The National Forestry Policy 2004 established Provincial Forest Commissions to promote and oversee forestry activities in decentralised entities. It also creates the RAFNET (Rwanda Agroforestry Network) as a forum to promote dialogue among national and decentralised level stakeholders, in civil society, private sector and civil society around forestry activities of common interest. A National Land and Forest Research Centre (LFRC) has been created with responsibility to undertake forest research alongside the Institute for Research in Agronomic Sciences (ISAR). The LFRC will specifically be responsible for inventories and statistics; research on wood technology and utilization; forest economics and forest products marketing, among others. However, this new initiative (both NAFA and LFRC) is expected to face major human resources challenges as the country still faces severe shortage of professionals in specialized fields like forestry. Increasing the human resource capacity in the forestry sub-sector is one of the key priorities for this strategic plan.

3. **Rwanda Geology and Mines Authority (OGMR)** was established in 2007 as a national agency responsible for implementing policy; research and mapping of mineral resources; developing and monitoring standards for large scale commercial and artisanal miners, and generally ensuring that the mining sector develops and contributes productively to the realisation of the EDPRS and Vision 2020 objectives. The principle goal of the mining agency is to enhance revenue generation through strategic approach to value addition of mineral resources.

4. **Rwanda Environment Management Authority (REMA)** is the overall national authority responsible for overseeing the implementation of environmental policy and law. Strategies used include education and sensitisation on environmental conservation through formal and informal education as well as through practical demonstration; law enforcement and monitoring, as well as capacity building support to other institutions.

#### *Ministries and Agencies outside the ENR sector*

Whilst MINIRENA has a responsibility to ensure that key ENR issues are integrated into sector strategies and plans which depend on ENR or which have implications on environment and natural resources sustainability, this will be largely at advocacy and technical support levels. Actual integration – from planning, budgeting and monitoring will be a responsibility of respective ministries/ agencies/ sectors, and such issues have to be reflected in their sector priorities, strategies and budgets. The key ministries and agencies in this respect include:

1. *MININFRA* – road infrastructure development, energy infrastructure, urban planning and human settlements are under the policy direction of MININFRA and have significant implications on the natural resources and environment. Issues of alternative energy and efficient energy consumption; sustainable urbanisation and human settlements; environmental impact of infrastructure development, are priorities in the sector that have important bearing on ENR. The ministry will take overall responsibility for integrating ENR issues in these priority areas.

2. *MINAGRI and agencies* (RADA, RARDA, RHoDA and ISAR) which will be constituted into appropriate boards under emerging institutional arrangements have a statutory mandate to develop agricultural, livestock and fisheries sectors. RADA and RARDA are particularly expected to integrate sustainable ENR management principles into agricultural innovation and extension services including improved seeds, soil conservation, while ISAR is expected to address natural resources sustainability issues through applied and adaptive research activities especially in areas of agro-forestry, new crop varieties that are adaptive or resistant to water stress, pests and diseases, and/ or are high yielding and fast growing, in addition to post harvest management. Implications of biotechnology especially as it relates to environmental, social and socioeconomic safety are important issues to be addressed.

3. *MINICOM and agencies* –sustainable industrial development, including adoption of cleaner production technologies, tourism development (which is largely nature-based) are key strategies where the trade, tourism and industry sectors link with ENR. Some of these responsibilities have been reconstituted under RDB and this arrangement will hopefully ensure efficient service delivery to the benefit of investors. The cooperative development, which is a major strategy for rural development largely revolves around agro-produce and agri-business, and thus constitutes an important entry point to integrate sustainable ENR management principles. The Rwanda Investment and Export Promotion Agency (RIEPA) and the Rwanda Private Sector Federation (RPSF) are the key facilitating institutions for the private sector programme.

4. *Ministry of Health (MoH)* – environmental health concerns, nutrition and management of medical wastes, are important ENR issues to be addressed from the health sector. The MoH has formulated an environmental health policy, is implementing an integrated malaria control programme and early childhood illnesses programme – all of which address ailments resulting essentially from poor environment conditions.

5. *Ministry of Scientific Research and Technology* (in the Office of the President) will be responsible for integrating environment and natural resources issues into the overall national research and technology development strategy. The July 2007 International Conference on Biodiversity organised in Kigali by the Office of the President signifies its interest in



environment and natural resources management and the consideration of their relative importance in sustainable development.

6. *Ministry of Foreign Affairs (MINAFFET)* – to support the monitoring and reporting on international conventions and protocols, as well as providing policy guidance to regional and international cooperation.

7. *Ministry of East African Affairs* – regional protocols regarding the management of trans-boundary ecosystems within the EAC. The main area of collaboration is in the implementation of the LVBC protocols and programmes.

8. *Ministry of Local Government (MINALOC)* - overseeing decentralisation of sectoral and fiscal functions; coordinating the Vision 2020 *Umurenge*, a key flagship programme of the EDPRS; sets criteria and coordinates the Local Governments' Performance Contracts monitoring; and responsible for community development and social protection. MINALOC will particularly play a key role in ensuring integration of environmental sustainability issues into the social protection and community development programmes.

9. *Ministry of Finance and Economic Planning (MINECOFIN)* – is responsible for macroeconomic management, resource mobilisation and allocation for public investments, planning and coordinating economic activities across sector Ministries and more recently ensuring population issues are integrated into sector priority setting. In the respect of environment as a cross cutting issue, MINECOFIN plays a crucial role of ensuring other sectors integrate environment into sector planning and budgeting towards effective implementation of EDPRS.

10. *Justice Institutions (essentially MINIJUST)*: MINIJUST has responsibility for technical guidance and coordination of legislation initiated from line ministries. Non traditional justice institutions – particularly the *Abunzi* (Community mediators) are playing a key role conflict resolution at community level, including resolution of land related conflicts.

### **5.1.2 Local Governments and other Decentralised Entities**

This SSP is being implemented in a decentralised governance framework, whereby area-based action planning and implementation of projects and other activities, will be undertaken by local governments, district and community-based organisations. District offices responsible for ENR sub-sectors (water, environment, forestry, lands and mines) will be supported to coordinate implementation and day-to-day follow-up of the planned activities. The District Planning Units will be strengthened to coordinate decentralised planning and budgets for environment and natural resources management, as well as collect, analyse and disseminate information for evidence-based implementation and monitoring.

### **5.1.3 Civil Society organisations (NGOs, CBOs,..)**

Civil society organisations will be mobilised and supported to design thematic and/or area specific action plans and activities to implement the programmes and sub-programmes within their areas of operation. Where capacity gaps are identified, interventions will be undertaken for key identified CSOs to facilitate them to develop such needed skills, institutional support and logistical resources for the implementation of specific actions of this plan. More importantly, CBOs, informal associations and other grassroots based CSOs are expected to support the implementation of the community driven ENR activities. As part of the ENR sector coordination enhancement, detailed mapping of CSO operations will be undertaken, needs assessed/ identified, and strategies to support them implemented at all levels.

### **5.1.4 Private Sector Agencies**

In accordance with the GoR's policy of private sector-driven economic development<sup>19</sup> and indeed as highlighted within the EDPRS, the private sector has critical roles to play in the implementation of the ENR SSP. Private sector agencies will be mobilised and sensitised, through the Private Sector Federation (PSF) and its district offices, to integrated sustainable ENR management principles into their activities and strategies for development. Specific incentives to encourage best practices in environmental sustainability and value adding investments in the ENR sectors, will be developed and made available to the sector actors, subject to budget provisions. An important category of private sector that will be engaged more proactively are the cooperatives which are interacting with the farming, trade and industrial sectors at increasing scales. These will be trained and facilitated to undertake extension and inspection work among its members.

### **5.1.5 Donors and other Development Partners**

Beyond providing financial support, development partners (donors, international NGOs,..) are expected to participate very actively in the implementation of the SSP. As a part of the refined focus and support to the implementation of the EDPRS, the implementation of the ENR sector plan will draw from the experience of EDPRS formulation and rely on the participatory partnerships that included development partners with UNDP acting as a co-chair to the ENR sector. Key development partners in the sector (both at the level of funding and technical operations) are outlined in annex 5. MINIRENA will streamline and revamp the ENR related clusters (Land and Environment (included Forestry and Mining); Water and Sanitation) that served productively as dialogue forums and technical working groups during the EDPRS formulation process. In order to ensure that development partners actively participate in these

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<sup>19</sup> The Vision 2020, the Seventh Year Government Strategy and the EDPRS clearly state that the private sector will be an engine of economic growth while Government remains with a facilitating and regulatory role.

forums, MINIRENA will undertake an institutional and stakeholder mapping, which will also form part of the platforms for launching the ENR SWAp.

## 5.2 Monitoring and Evaluation Framework

### 5.2.1 Overview of the M&E Framework

Monitoring and Evaluation (M&E) of implementation progress of this SSP takes into consideration the fact that ENR service delivery is decentralised and that the sector is a facilitator or holding ground<sup>20</sup> for other sectors. This implies that strong vertical and horizontal linkages will have to be developed with and across natural resource-dependant ministries and agencies, as well as with sub-national levels (Districts and lower levels). There is also a third tier that links with non state actors – civil society and private sector, who are actively involved or have strong interest in natural resources. The key attributes for this M&E system include:

- It builds on and is integral to the overall EDPRS M&E framework and the national integrated M&E system;
- It captures and takes consideration of other environmental reporting systems – the integrated reporting system
- It is anchored on decentralised M&E initiatives (*Imihigo* reporting, DDP reporting arrangements), indicating that District and lower level stakeholders will be key actors in the implementation framework.

A comprehensive structure of the M&E system for the SSP is presented in Annex 1 but the proceeding sections highlight key aspects.

### 5.2.2 Key Performance Targets and Indicators

The key performance targets and the main indicators to be used in tracking performance are outlined, along with the baseline figures in the table 6 below.

Table 6: Key sector targets for the ENR SSP

Strategic/ Key Results Area	Key Performance Indicators & targets	Baseline 2007	Progress 2009	Progress 2010	Progress 2011	Progress 2012	Target 2013
1.Sustainable land management	<b>Outcomes:</b> 1.% privately held land registered/ titled; 2.Proportion of issued land titles held by women 3.Integrated land use (urban & rural land use based on land suitability/ capability);	5% 0% 0	100% %				100% 40%? 1
	<b>Outputs:</b> Land market transactions (turn around time for land transfer)						

<sup>20</sup> Most sector targets will rely on the availability and supply of natural resources e.g. hydro-power generation and irrigation will depend on water resources; tourism will depend on the quality of biodiversity in protected areas; agricultural production will depend on soil productivity and availability of water for irrigation; etc.

Strategic/ Key Results Area	Key Performance Indicators & targets	Baseline 2007	Progress 2009	Progress 2010	Progress 2011	Progress 2012	Target 2013
	Agricultural land use based on land suitability						
2. Integrated Water resources management	<b>Outcome:</b> - Percentage of water resources complying with water quality standard - Annual recharge of underground water (Km3/ha)	30%					70%
	<b>Outputs:</b> - Periodic water resources inventory undertaken						
	Proportion of wetlands conserved/ sustainably used						
	Functional hydrologic and limnometric stations operational						
	Critical water catchments identified & protected (Ha)						
	Water use in industry (million m3)	1.3			2.9		
	Water use in agriculture:						
	Area/ length of lakeshores and river/ stream banks protected or sustainably managed (Km2 or Ha)						
	Area of watersheds protected						
3. Sustainable management of forest and biomass resources	Forest cover as percentage of total land area	20.0%	21%	21.6%	22,3	23	24,3%
	Agro-forestry coverage: Proportion of farmed land under agro-forestry	?	?	?	35%	40%	50%
	Access to forest and biomass products	?	?	?	85%	90%	95%
	Alternatives to wood and biomass products(% of HHS using fuel-efficient technologies)	?	?	?	20%	30%	50%
	Income from carbon trade grants	0	0	0	US \$ 5	US \$ 10	US\$ 20 m
4. Ecosystems conservation & improved functioning	Area of degraded ecosystems rehabilitated (%; Ha )	8%	8.4%	8.8%	9.2%	9.6%	10%
	Biodiversity hotspots protected/ conserved (Ha)						
	Protected areas as a proportion of total land area to maintain biodiversity : • <i>proportion of protected forest areas;</i> • <i>proportion of ecologically sensitive wetlands protected</i> • <i>proportion of lakeshores &amp; river banks protected</i>	8%					10%
5. Sustainable mining and increased mineral production	Outcomes: - Total revenue from exports of mineral products (in millions USD)		72	75	89	106	120
	<b>Outputs:</b> 1. Number of large scale(1/50 000) geologic/ mineral maps produced	National coverage of 1/100000 geological maps					10 geological maps of 1/50 000 in areas with mineral anomalies
	2. Number and categories of minerals and quarry	2 tins	2 tins				2 tin

Strategic/ Key Results Area	Key Performance Indicators & targets	Baseline 2007	Progress 2009	Progress 2010	Progress 2011	Progress 2012	Target 2013
	processing industries operational	smelters (not operational)	smelters (not operational)				smelters, 1 wolfram smelter, 1 rock cutting and polishing factory, 1 ceramic artisanal factory and 1 peat carbonization plant operational
	3. Number of mining projects having an environment management plans	10 medium scale projects					All mining projects
	4. Number of Mining Cooperatives well equipped and using modern technologies	0	2				All mining cooperatives
	5. Number of mining entities obtaining certification for mineral production and trading.	0	0	3			10 Companies
6. Mainstreaming Environment across sectoral policies, programmes & projects	Key target sectors which have prioritized and made sufficient budget allocations to ENR issues		PER review				
	Level of environmental education & awareness						
	Civil society, Cooperatives & private sector agencies which have prioritized environmental issues						
	Public-private partnerships formed in environmental conservation & natural resources development						
	% of sectoral projects that have completed EIA before implementation						
7. Policy, legal & regulatory framework for ENR management	- All ENR sector policies, laws and regulations reviewed to respond to other sectors' needs, EDPRS, MDGs and Vision 2020 aspirations - Appropriate policies & legislations put in place to operationalise relevant provisions of the Constitution, organic law on environment and land	Applied SEA to the Energy policy review 6 sector specific EIA guidelines and 1 EIA general guidelines developed	100 % of Sector policies reviewed				
	ENR legal & regulatory regimes harmonised with other EAC Countries	0					100% of regulations harmonized
	Legal & regulatory measures to implement International Conventions that have been ratified	?					

Strategic/ Key Results Area	Key Performance Indicators & targets	Baseline 2007	Progress 2009	Progress 2010	Progress 2011	Progress 2012	Target 2013
	by Rwanda						
8. Institutional Capacity of ENR Governance	Improving sector programming & sectoral coordination (ENR SWAP developed & operationalised)	Formation of sector working group			SWAp operational		
	M&E framework from central & decentralised level (access to and use of ENR information in decentralised planning & budgeting); Web-based management information system (MIS)		Western Province Districts have environmental profiles	Karongi as a pilot District for environmental data system			All 30 Districts have environmental data systems in place
	Financing for & financial management in the ENR sector (% of activities receiving reliable funding; extent of application of green accounting principles)			PER baseline to be set			
	Districts supported to operationalise/ implement ENR laws and regulations						ENR laws and regulations operational in all 30 Districts

The detailed sub-programmes and indicators and targets are in Annex 2.

### 5.2.3 ENR Data Management Framework

The Permanent Secretary, who will be overall chair of the ENR sector, will have responsibility for coordinating information flow in the sector with respect to the SSP implementation.

Electronic data storage and sharing systems will be developed. In this regard, the sector will build on existing or ongoing efforts including:

- 1) *Landnet* – which is coordinated by the land sub-sector, and is a web-based mechanism for sharing news and information on the progress on the land tenure reform process. Landnet has provided the cheapest and most convenient mechanism to reach different stakeholders, especially in Kigali, with information on land tenure reform process, and to seek feedback
- 2) *Environmental Information System (SISE)* - is being developed to capture, store and share data and information on all issues of environment.
- 3) *MINIRENA and REMA websites* ([www.minirena.gov.rw](http://www.minirena.gov.rw) and [www.rema.gov.rw](http://www.rema.gov.rw)) –These websites will be used to store and access reports on progress in the implementation of the sector strategy.

4) *EDPRS monitoring system* – like all other sectors under the EDPRS, MINIRENA has developed a comprehensive M&E framework that is linked to the integrated national M&E framework. The implementation of this strategy will rely on the effectiveness of sector M&E framework for data collection and indicator tracking.

#### **5.2.4 Analytical and Reporting Arrangements**

As the SSP will be implemented in a decentralised setting and has multiple stakeholders, data analysis and reporting will be done at district, national (sectoral as well as integrated) level. Data sets will be generated and analysed in a bottom-up arrangement, and horizontally across sectors. The M&E systems should support data aggregation from districts (locally generated data) up to national level, as well as comparison and cross-reference across sectors.

#### **5.2.5 Communication and Follow-up mechanisms/ Arrangements**

One area where this ENR SSP clearly breaks ranks with the previous strategies is the emphasis on communication and reporting as a pillar of mutual accountability within and without the sector. To ensure that all reports generated on the implementation of this SSP are communicated and used to inform the planning, budgeting and follow-up actions towards realising the EDPRS and Vision 2020 for the ENR sector. The multiple and sometimes conflicting interests in the ENR sector presents dilemmas that could complicate the reporting and communication systems. This strategy recognises these challenges and has accordingly proposed innovative ways to simplify communication at all levels in the implementation process. The communication protocol and follow-up actions will entail the following:

- annual sub-sector progress reports disaggregated by district to be published in all official languages and simplified to a level easily used by non-technical decision makers at policy (ministerial) and operational levels (district levels). MINIRENA Directorate of Planning will provide a specific communication guide building on the general EDPRS reporting guidelines;
- establishing or re-activating information networks that embrace stakeholders with electronic (internet based) and non electronic media, so that central and local levels; national-based NGOs and field-based CBOs and SMEs can access information on the state of natural resources and environment. Examples of existing ones to build on are the Rwanda Environmental Information Network (REIN supported by UNEP and linked to African Environmental Information Network (AEIN)) being initiated in REMA and the LandNet coordinated by the National Land Centre (NLC);
- regular review/ consultative meetings – whereby each sub-sector holds monthly, quarterly, etc. meetings to share challenges and successes, and to learn from each other on progress. The monthly meetings between Forest Officers and the MINIRENA

leadership could be streamlined to take on detailed partnerships (to include all agencies under the Ministry) and follow-up actions.

- Analysis and synthesis of and generally translating data and information into simple graphical and other user friendly formats (pictures, figures, graphs, photographs,..) for grassroots-based stakeholders like cell leaders and farmers;
- Publishing reports on websites and ensuring regular updates.
- Networking, training and facilitation of media practitioners to pick interest in and publish and disseminate ENR related information especially around achievements in the ENR sector. REMA has initiated some links with media houses and the experiences so far realised, should inspire or inform the media strategy in each sub-sector.



## 5.3 Implementation Strategy

### 5.3.1 Action Planning

To simplify the planning process, ensure efficient resource allocation and effective implementation of the activities, annual and quarterly work plans will be formulated by the sub-sectors based on this ENR SSP programmes:

Coordinated planning and implementation among the sub-sectors and actors will be realised through:

- joint planning sessions (ENR sub-sectors as well as key cross-cutting sectors)
- decentralised planning structures (CDCs, JAFs);

### 5.3.2 Sector-wide Approaches and Sector Coordination

The ENR sector is diverse, encompassing sub-sectors (mines, forestry, water, lands, environment,..) and linked in complex ways to other sectors (health, agriculture, energy, tourism, housing, macroeconomic management, gender and social development, etc). One of the main challenges that could constrain effective implementation of the sector strategy is poor coordination – of programming, funding and activity implementation. In order to bring about coherence and synergy in the programming, resource mobilization and deployment, and in monitoring the implementation strategy, a sector-wide approach (SWAP) framework will be developed. It is expected that the ENR sector SWAp will assist to bring together all sector actors as well as other stakeholders, and improve cross-sectoral collaboration. This will facilitate the ongoing efforts in mainstreaming environment and sustainable ENR especially among key sectors that depend on natural resources (agriculture, energy and infrastructures, industry and tourism, health..). The SWAp will also significantly reduce the costs of networking and advocacy, as target stakeholders are likely to be brought into one framework than having to pursue each sector separately.

In terms of financing, the SWAP process is expected to contribute to the realization of donor harmonization and alignment commitments under the Paris Principles, by facilitating strategic shift from short term, project based funding mechanisms, to more comprehensive programme-based arrangements, and eventually into sector budget support. Recent experiences in the water sub-sector will provide some useful lessons, as will other sectors such as agriculture and health where the SWAP processes are already underway or operational. The SWAP will build on the existing sector working groups in the ENR sector: land and environment (which includes forestry and mining) as well as water and sanitation, and drawing from key cross-sectoral clusters as agriculture and rural development, industry and trade, energy and infrastructures. It is planned that the SWAP preparation process will be initiated in the first year of the SSP and be fully adopted in the fourth quarter of 2009. Discussions are already underway and some

activities are slated to commence immediately following the validation of the ENR sector strategic plan. A multi-sector working group will be put in place and facilitated by MINIRENA and UNDP (ENR WG Chair and Co-chair respectively) to follow-up sub-sector and cross-sectoral activities leading up to the SWAp.

### **5.3.3 Information Management Strategy**

A key aspect of the ENR strategic plan is to intensify networking and advocacy to mainstream environment and sustainable natural resources management principles both within the ENR sector as well as across other sectors. To do this effectively, innovative approaches to gathering, storage, packaging and dissemination of information, especially on lessons learnt and good practices in sustainable ENR management will be adopted. The strategy, targeting all levels and all stakeholders, will, *inter alia*, entail the following:

- Taking advantage of existing dialogue platforms and communication frameworks – e.g. the quarterly performance contract evaluations/ review (*Imihigo*), local gatherings (e.g. *Umuganda*);
- Disaggregating the information by districts or ecosystem levels, so as to encourage local actions and local reporting;
- Engaging media through sound and long term partnerships to communicate ENR issues to different audiences, and empowering the media personnel with requisite skills and incentives e.g. short term courses, study visits, etc. ;
- A clear framework for feedback and regular interactions of central government agencies, and between central and local levels, so as to improve data accuracy policy analysis by ensuring that issues are focussed and practical;
- Support the Joint Action Forums (JAFs) in the districts to prioritise and follow-up on ENR sustainability concerns within planning and other forums;
- Mobilise and empower sub-district level structures (sector, cell and Umudugudu levels), including cooperatives and associations to analyse and communicate ENR information to farmers and other grassroots based stakeholders. In this regard, the information management capacity of Sector offices will be developed to coordinate information dissemination activities at levels closer to the population.

### **5.3.4 Institutional Capacity Building Support**

The ENR sector is among the youngest in terms of public institutional framework, and it faces enormous institutional and human resources capacity constraints. A sub-component of institutional capacity building support is embedded in each of the programmes for the sector. Also, considering the dismal performance of past public sector capacity building interventions, innovative approaches – that include regular performance assessment; avoiding supply oriented and adopting demand driven capacity building support; and performance based incentives, will

be pursued – both for central and decentralised entities. Capacity support will also be provided to strategic implementation partners in the civil society and private sector, as well as to organised grassroots based groups who demonstrate interest in designing and implementing community-driven local actions in or with bearing on the ENR sector. A holistic package of capacity building activities will also be designed, subject to resource availability and paying special attention to institutional coordination at policy and operational levels. Some of the detailed capacity building activities are outlined in the sector programme matrix/ log frame (Annex 1), while others will be designed after a comprehensive capacity needs assessment has been undertaken. The publication of the MINIFOTRA skills audit report will guide the comprehensive skills assessment in the sector. Another strategy to be employed in building institutional capacity will be to harmonise ongoing efforts under different projects to facilitate better beneficiary targeting and focus on impact creation.

### **5.3.5 Resources Mobilisation and Management Strategy**

Experience in the last 5 years demonstrate that public funding into the ENR sector increased progressively as institutional capacity is developed, although this has been slow and the increase rather modest. Reliable and adequate financing and human resources are important for achieving the sector targets, but remain a major challenge. A three-pronged strategy will be employed to mobilize and ensure availability of sufficient resources for the sector:

- Clear demonstration of the links between sustainable ENR management with outcomes in the key EDPRS targets, especially for ENR dependant sectors;
- Ensuring effective absorption (utilization and accountability -both technical and financial), and to undertake clear performance assessment that indicates the returns on investments in terms of the results. This will particularly target mobilizing more resources from the public vote (Budget);
- Design of large scale, integrated ecosystem-wide programmes with a medium to long-term scope rather than small short-term projects.

## 6. Costs, Financing and Financial Management

### 6.1 Costs and costing of Planned Activities

The total amount of funds required to implement all the planned activities in this ENR strategic plan is Frw191, 937,617,895. This includes some Frw. 85,841617,895 from the budget, and Frw 106, 096 million from project funding. The distribution of the funds by programme is summarised in table 7. It should be noted, however, that this budget is under-estimation as it has largely been based on aligning the planned activities with the MTEF and PIP allocations.

**Table 7: Sector Budget by programme and annual distribution (Frw)**

Budget Programme	Financial Year of Expenditure				Total 2009-2013
	2009 (mini)	2009/10	2010/11	2011/12	
Programme 1: <i>Sustainable land management</i>	669,238,933	1,549,659,440	1,674,358,970	2,159,395,994	6,052,653,287
Programme 2: <i>Integrated Water Resources Management</i>	1,070,719,105	750,260,000	872,992,019	945,769,875	3,639,740,999
Programme 3: <i>Sustainable management of Forest &amp; Biomass resources</i>	599,572,241	1,603,514,490	1,651,619,924	1,839,522,015	5,694,228,670
Programme 4: <i>Ecosystems conservation &amp; improved functioning (Ecosystem Rehabilitation)</i>	412,775,156	735,296,514	774,724,150	812,595,667	2,735,391,487
Programme 5: <i>Sustainable mining</i>	180,694,560 (239,291,730); figures in blue indicate total planned budget including salaries	366,995,941 (553,405,795)	391,369,822 (659,941,000)	357,934,228 (770,147,999)	1,296,994,551
Programme 6: <i>Environmental sustainability of development policies &amp; programmes (Environment mainstreaming across sectors programmes, projects, plans &amp; budgets)</i>	-	-	-	-	-
Programme 7: <i>Policy, legal &amp; regulatory framework for ENR management</i>	412,775,156	735,296,514	774,724,150	812,594,667	2,735,390,487
Programme 8: <i>Institutional Capacity of ENR Governance</i>	1,194,002,561	2,572,470,121	2,489,472,165	3,101,604,343	9,357,549,190
<b>Total (from General Budget)</b>	<b>4,127,002,556</b>	<b>7,578,196,506</b>	<b>7,854,537,906</b>	<b>9,216,820,266</b>	<b>28,776,557,234</b>

Source: MINIRENA Budget Spreadsheet 2008.

Detailed sub-programme costings based on the MTEF are presented in Annex 3.

### 6.2 Financing Mechanisms

Funding for the ENR SSP is expected to come from two main sources viz 1) general budget support; and 2) project support. With continued investor confidence building strategies and overall growth in private sector participation in the sector, the role of private sector in financing the sector will be increasingly expected and will likely position itself as the third main source of financing to the sector.

In order to realise reliable and sustainable financing, however, additional funding mechanisms will be explored during the SSP period.

1) *The General budget allocation to the sector* is the main source for the bulk of the activities. The anticipated risk lie, however, in the inadequate allocations.

2) *Project support to specific sub-sectors within the ENR.* On-going projects under MINIRENA and other agencies, will provide funding for some of the activities included in the SSP. This implies that the on-going and planned projects within the sector will have to align with the priorities in the SSP, since these are based on the overall national priorities enshrined in the EDPRS.

3) *General budget and project support to other sectors* in which sustainable ENR management is a key component. The main strategy to ensure this will be to step up awareness raising, advocacy and networking activities, to engage the sectors in question and demonstrate how ENR issues are important in their sector, and support them to mainstream sustainable ENR issues into their SSPs, action plans and budgets. Initiatives in this regard will build on ongoing efforts by MINIRENA (IMCE) and REMA (through project (PEI, DEMP, PAB and AEIN) interventions. The main sectors targeted are infrastructures (Under MININFRA); tourism, trade and industry (under MINICOM), agriculture and animal resources (under MINAGRI), health (under MINISANTE), economic management (MINICOFIN and associated agencies) and decentralised governance (MINALOC). Table 4 below shows the anticipated amounts by source.

4) *Sector budget support through a basket fund* for the ENR sector. This is expected to be operational once the ENR sector SWAp is adopted.

**Table 8: Anticipated funding for the SSP by Source and amount estimates**

	Source of funding	Commitments (Frw)	Total funding estimates (Frw )	Gaps (Frw)
1	General Budget (MINECOFIN allocation)	28,776,557,233	85,841,617,895	57,065,060,662
2	Projects aligned to the sector	106,096,000,000	106,096,000,000	0
3	Cross-cutting sectors (ENR mainstreaming)	-	-	-
	<b>Total</b>	<b>134,872,557,233</b>	<b>191,937,617,895</b>	<b>57,065,060,662</b>

Source: MINIRENA & MINECOFIN records<sup>21</sup>; and Public Investment Plan 2008.

In table 8 above, resources from cross-cutting sectors will be identified during the detailed public expenditure review (PER) for the sector that is planned. Also, project funds are not aligned to the sector and therefore not easily transferable or earmarked to specific programme activities. This alignment will be undertaken under the SWAp development programme.

A comparison of funding estimates for the programme and budget commitments to the sector (both from the budget and projects) indicate that there is a funding gap of approximately Frw 57 billion .

**Table 9: Funding Gaps (based on budget requests Vs Budget Commitments)**

	Funding request/ commitment by year (Frw)					Total cost 2009-2013
	2008	2009 (mini)	2009/10	2010/11	2011/12	
Programme cost (request from budget)	-	10,938,692,412	25,678,904,872	24,283,798,199	24,940,222,412	85,841,617,895
Committed funding		4,127,002,556	7,578,196,506	7,854,537,906	9,216,820,266	28,776,557,234
<b>Funding Gap</b>		<b>6,811,689,856</b>	<b>18,100,708,366</b>	<b>16,429,260,293</b>	<b>15,723,402,146</b>	<b>57,065,060,661</b>

Data source: MINIRENA & MINECOFIN records.

### 6.3 Resources Allocation and Financial Management Arrangements

The allocation of funds to the programmes, sub-programmes and activities has been guided by the priorities set for each of the 5 sub-sectors constituting the ENR sector. Expenditure will be incremental, and based on annual action planning and expenditure management. Within the priorities reflected in the sector log frame (see Annex 1), the following tools constitute major instruments for priority expenditure and resource allocation, as well as accountability:

It is important to note that all the 8 programmes planned under this strategic plan directly contribute to the realisation of the 3 EDPRS flagship programmes viz: Vision 2020 Umurenge; sustainable growth for job creation; and Good governance.

#### 6.3.1 Medium Term Expenditure Framework (MTEF)

The three-year rolling expenditure plan is one of the key instruments guiding the expenditure priorities for the sector. Like all other sectors, although this plan sets clearly how the priorities for each sub-sector will be implemented during the five years, priority re-setting is expected subject to the size of the resource envelope, sector expenditure ceilings set by MINECOFIN

<sup>21</sup> MTEF, and MINIRENA Sector Budget.

and any unanticipated changes that might affect the priority arrangements. One of the initial exercises in the preparation of this strategic plan, was to align the sub-sector priorities identified to realise the EDPRS targets, with the MTEF. This strategy is, therefore, fully aligned with the MTEF 2008-2010.

Linking the MTEF with the sector programme is still a challenge and will have to be worked on, for a number of reasons, the principal one being the fact that the budgets and MTEF were formulated before the strategic plan.

### 6.3.2 Annual Performance Assessment

The ENR SSP will be reviewed quarterly and annually to review progress towards the set targets. Quarterly reports will be prepared and shared with different stakeholders. It is proposed that as part of the monitoring and performance assessment process, the different sub-sectors will take advantage of/ use the events and activities in table 10. below to review their progress and assess performance. The advantage with these events is that:

- a) they are already institutionalised and embedded in the lead institutions' normal work plans, such that getting political “ buy-ins” will be relatively easy;
- b) some resources are already earmarked for such events such that there is little likelihood of requiring extra financing;

A new idea introduced by this strategy will be to collect and synthesise information reflecting status and progress towards the sector targets<sup>22</sup>.

**Table 10: Important events/ activities for sub-sector performance review**

	Subsector	M&E event/ activity	Frequency	Present status	Responsible/ lead agency
	Environment	State of environment (SoE) reporting	biennially	First SoE launched in 2009	REMA
		World Environment week	Annual		REMA
	Forestry	Annual tree planting day			NRB <sup>23</sup> (NAFA)/REMA
	Water	World Water day	Annual		
	Geology & Mines	Mining day	Annual		RNRB (OGMR)
	General ENR management	Africa Statistics week	Annual	Observed but environmental statistics not yet considered	NISR/ REMA
		National Accountability day		Held regularly but confined to Local Govt	MINALOC

Source: Various documentations

### 6.3.3. Public Expenditure Review (PER)

The first ever public expenditure review (PER) for ENR sector will be undertaken at the start of the implementation of this plan, and the terms of reference (ToRs) for this task have already been formulated under the UNEP/UNDP funded PEI project. This will provide a baseline against which to benchmark and measure the fiscal performance and assess value for money.

<sup>22</sup> An example is to analyse and publish disaggregated information on the state of forests and tree resources during the annual tree planting day, so that the country can collectively reflect on the actual progress made towards the EDPRS and Vision 2020, in terms of forest coverage, effects on climate change and recommendations on new efforts and strategies needed to keep or get on track. Published information will be discussed in decision making forums – essentially parliament and local councils.

<sup>23</sup> NRB: Natural Resource Board is envisaged to be the institutional set up during the implementation of the sector strategic plan.



## **7. Results Matrix/ Logical framework**

The logical flow of expected outcomes, outputs and required inputs are summarized in the matrix in Annex 1. It should be noted, nonetheless, that the column of baselines is largely unfilled because baseline figures did not exist at the time of preparing this strategic plan, and setting baselines for each of the target outputs is part of the priority actions to be undertaken in the first phase of the strategy implementation.

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## **8. Annexes**

Annex 1: Results Management Framework for the ENR Sector Strategic Plan

Annex 2: Linking Sector priorities and Targets to MTEF (through Budget Programmes)

Annex 3: Linking Programme Budget estimates to MTEF

Annex 4: Status of International Conventions, Treaties and Protocols in Rwanda

Annex 5: Integration of environment into EDPRS sector logframes

## Annex 1. Results Management Framework for the ENR Sector Strategic Plan

Key Results/ Narrative summary	Key Performance Indicators and targets	Baselines (2009) and targets (2013)	Means of verification/ monitoring strategy	Critical Assumptions
<b>Overall Sector Goal: Rwanda's natural resources managed equitably and sustainably for socioeconomic transformation</b>				
<b>Outcome 1: Equitable, sustainable and productive management of land resources</b>				
Output 1.1: Land tenure security increased	<ul style="list-style-type: none"> <li>% land registered/ titled;</li> <li>% of women-owned land titled/ registered</li> <li>incidences of land related conflicts</li> </ul>			
Output 1.2: Land Market transactions	<ul style="list-style-type: none"> <li>“Turn-around” time for land ownership registration/ transfer reduced to maximum 30 days to reduce transaction costs on investments ;</li> <li>Extent of use of land titles as collateral to access bank credit</li> </ul>			Coordination with programmes to attract investors
Output 1.3: Integrated and sustainable land use	<ul style="list-style-type: none"> <li>Comprehensive National land cover &amp; land use maps;</li> <li>Proportion of rural land use that is based on approved master plans (National and/ or district);</li> <li>Proportion of urban land use that is based on approved master plans (national and/or district)</li> <li>Urban &amp; rural land use based on scientifically derived land capabilities;</li> <li>No. of equipped laboratories providing services in soil analysis &amp; agro-chemical testing</li> </ul>		<ul style="list-style-type: none"> <li>National Land Centre (NLC) Records/ documents</li> </ul>	
Output 1.4: Arable land protected from erosion and exhaustion	<ul style="list-style-type: none"> <li>% annual increase in land secured against erosion</li> </ul>	40% to 80%	Annual reports (JSR – MINAGRI) Land office Records Assessments	Safeguards in practice Buy-in from landholders Commitment from partners
<b>Outcome 2: Water resources managed in an integrated, equitable and sustainable way</b>				
Output 2.1: Strategic framework for integrated water resources management in place and operational	<ul style="list-style-type: none"> <li>Integrated Master plan for water resources</li> </ul>	•	<ul style="list-style-type: none"> <li>Reports/ documents</li> <li>Minutes of meetings</li> </ul>	<ul style="list-style-type: none"> <li>Political support continues;</li> <li>Institutional reforms favourable</li> </ul>
Output 2.2: Inventory of the country's surface and groundwater resources	<ul style="list-style-type: none"> <li>Water resources &amp; infrastructure</li> <li>Spatial databases on surface &amp; ground water resources;</li> </ul>	•	<ul style="list-style-type: none"> <li>Publications, Interviews environment reports; water resource maps</li> </ul>	<ul style="list-style-type: none"> <li>High staff turnover</li> </ul>

Key Results/ Narrative summary	Key Performance Indicators and targets	Baselines (2009) and targets (2013)	Means of verification/ monitoring strategy	Critical Assumptions
Output 2.3: Water quality standards & monitoring framework	<ul style="list-style-type: none"> <li>No. of functioning water quality stations &amp; laboratories</li> <li>Spatial databases</li> <li>No. of water quality monitoring sites set-up</li> <li>National water quality standards</li> </ul>		<ul style="list-style-type: none"> <li>Physical inspections of equipped laboratories; interviews</li> </ul>	
Output 2.4: Implement protection of riverbanks and lake shores degradation	<ul style="list-style-type: none"> <li>Level of downstream siltation and sedimentation</li> <li>% farmers sensitized on importance of riverbanks and lake shores protection</li> </ul>		Documents, siltation records	Unclear boundaries of wetland ecosystems, river banks and lakeshores.
<b>Outcome 3: Forest and biomass resources developed and sustainably managed</b>				
Output 3.1: Degraded forests in important watersheds and catchment areas rehabilitated and new ones planted	<ul style="list-style-type: none"> <li>Area of micro-catchments planted with trees</li> <li>No. of sectors &amp; cells with well maintained tree nurseries (not easy to monitor)</li> <li>No of hectares of rehabilitated forests</li> <li>No of hectares of new planted forests</li> <li>Local capacity developed in catchment management (water sector)</li> </ul>	Bas.08: ? Targ. 12: 100%  Bas 08: 2000 ha Targ. 2012: 100 000 ha Bas 08: 19 579 ha Targ.2012: 78 316 ha	Survey reports, physical inspections	Inadequate supply of suitable tree species, inadequate follow up of planted trees
Output 3.2: Forestry and Agro-forestry resources used efficiently to provide energy, generate income & support livelihoods	Annual wood consumption reduced by 30% (8,900,000 m <sup>3</sup> in 2002 to 6,200,000 m <sup>3</sup> ) % of women and vulnerable groups engaged in forestry and agro-forestry <ul style="list-style-type: none"> <li>% of tree farmers benefiting from carbon trade</li> </ul>	Bas 08: ? Targ. 12: 30%  Bas 08: ? Targ. 12: 30%  Bas 08: 0 Targ 12: 20%	Records on forestry and agro-forestry •MININFRA/ RURA and District-level records •Survey reports	Continued Government commitment to developing alternative energy
<b>Outcome 4: Mineral resources sustainably utilized</b>				

Key Results/ Narrative summary	Key Performance Indicators and targets	Baselines (2009) and targets (2013)	Means of verification/ monitoring strategy	Critical Assumptions
	<b>Outcome:</b> - Total revenue from exports of minerals products(in millions USD)	US\$106M	•	•
Output 4.1: Productivity and value addition in the mining sector enhanced and based on environmentally sustainable practices.	<p>Number of large scale(1/50 000) geologic/ mineral maps produced</p> <p>Number and categories of minerals and quarry processing industries operational</p> <ul style="list-style-type: none"> <li>• Number of Mining Cooperatives well equipped and using modern technologies</li> </ul>	<p>National coverage of 1/100000 geological maps</p> <p>10 geological maps of 1/50 000 in areas with mineral anomalies</p> <p>2 tins smelters ( not operational)</p> <p>2 tins smelters, 1 wolfram smelter, 1 rock cutting and polishing factory, 1 ceramic artisanal factory and 1 peat carbonization plant operational</p> <p>0 -All mining cooperatives</p>	<ul style="list-style-type: none"> <li>• <b>Mineral exploration and exploitation databases</b></li> <li>• <b>OGMR Reports</b></li> <li>• Minerals export records</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Market prices remain stable</b></li> <li>• Availability of financing</li> </ul>
Output 4.2: Point source pollution from mining effectively controlled	Number of mining projects having an environment management plans	<p>10 medium scale projects -</p> <p>All mining projects</p>	<ul style="list-style-type: none"> <li>• Licensing documents</li> <li>• OGMR reports</li> <li>• Company records</li> </ul>	
Output 4.3: Legal, regulatory and institutional frameworks strengthened	Number of mining entities obtaining certification for mineral production and trading.	0-10 Companies	<ul style="list-style-type: none"> <li>• OGMR and Local Government institutions records</li> <li>• <b>Certificate issuing institution</b></li> <li>• Partnering institutions</li> </ul>	<ul style="list-style-type: none"> <li>• Sufficient financial and human resources, legal expertise &amp; technical support</li> <li>• Companies willing to participate in the certification process</li> </ul>

Key Results/ Narrative summary	Key Performance Indicators and targets	Baselines (2009) and targets (2013)	Means of verification/ monitoring strategy	Critical Assumptions
<b>Outcome 5: Environmental issues mainstreamed into policies, programmes, plans, budgets and activities for public and non public agencies</b>				
Output 5.1: Comprehensive Strategy & Action Plan for public Information, Education and Communication (IEC) formulated & effectively implemented	<ul style="list-style-type: none"> <li>• Level of population awareness on/ understanding of environment &amp; development links</li> <li>• Extent to which ENR sustainability principles are applied in key ENR-dependant sectors &amp; economic management institutions</li> </ul>	<ul style="list-style-type: none"> <li>- Field visits</li> <li>- Records of media publications &amp; audio-visual archives; Reports</li> </ul>	Negative public opinion	Institutional & cross-sectoral collaboration
Output 5.2: Measures for industrial, municipal & domestic pollution control in place & implemented	<ul style="list-style-type: none"> <li>• % of industries and commercial activities located in wetlands of trans-boundary importance</li> </ul>		Field visits; Documentation	-Compensation of people, industries & commercial activities in wetlands;
	<ul style="list-style-type: none"> <li>• % of industries using cleaner production technologies</li> <li>• % of hotels &amp; institutions with waste water treatment facilities</li> <li>• % of urban population with access to solid waste management facilities</li> </ul>		Study reports, inspection reports; EMP documents Garbage bins, Fact finding tours, visit to landfills	- Industries cooperate to switch to cleaner production technologies
Output 5.3: Measures for agricultural pollution control in place & effectively implemented	<ul style="list-style-type: none"> <li>• Incidences of chemical pollution from farming activities</li> </ul>	Research reports, field visits; State of Environment Reports District annual reports		
Output 5.4: Measures for controlling pollution from non point sources in place & effectively implemented	<ul style="list-style-type: none"> <li>• Rate of sedimentation at selected points of major rivers &amp; streams (Akagera, Akanyaru);</li> <li>• Amount of couliform in water samples</li> </ul>	Water quality monitoring reports		Capacity for water quality analysis
Output 5.5: Equitable & sustainable use of water for production enhanced	<ul style="list-style-type: none"> <li>• Smallholder irrigation schemes in water scarce areas of Bugesera, Umutara, Muhanga &amp; Huye</li> <li>• % of Coffee washing stations with water recycling</li> <li>• Proportion of area under flood irrigation</li> </ul>		<ul style="list-style-type: none"> <li>• Records; commissioned studies</li> <li>• Field visits, records of downstream siltation</li> </ul>	Water resources leading to conflicts
	<ul style="list-style-type: none"> <li>• Rain water harvesting/ reservoirs established in erosion-prone areas</li> </ul>		Field visits, records	Siltation of wetlands in the valley bottoms
	<ul style="list-style-type: none"> <li>• % of trans-boundary important wetlands protected</li> </ul>		Field visits, records of siltation levels, maps	
	<ul style="list-style-type: none"> <li>• Number of ground water aquifers mapped &amp; protected</li> </ul>		Water resources databases; state of environment reports;	
	<ul style="list-style-type: none"> <li>• % of farmers cultivating drought-tolerant &amp; low water consuming crop varieties</li> </ul>		Annual Crop Assessment reports by MINAGRI	
Output 5.6: Capacity building for improved use of meteorological &	<ul style="list-style-type: none"> <li>• Quarterly update of meteorological/ climatic data for ENR planning</li> </ul>		Records Publication/ broadcasting of	Inadequate technical skills among

Key Results/ Narrative summary	Key Performance Indicators and targets	Baselines (2009) and targets (2013)	Means of verification/ monitoring strategy	Critical Assumptions
climate data & information	<ul style="list-style-type: none"> <li>Emissions of carbon dioxide (CO2) per inhabitant</li> <li>Functional disaster management system</li> </ul>	0.0295 Gg/inhab. (2002)	weather information	Meteorological staff
<b>Outcome 6: Critical Ecosystems rehabilitated and protected to enhance conservation and sustainable utilisation of biodiversity</b>				
Output 6.1: Protected Areas effectively managed and biodiversity therein conserved for ecological, social, economic and cultural benefits.	<ul style="list-style-type: none"> <li>Area of critical habitat protected</li> <li>Annual update on number and status of rare or endangered species</li> <li>National revenue from tourism products</li> </ul>	8%	Reports; field visits; commissioned studies Biodiversity inventories Field visits and documents	
Output 6.2: Biodiversity outside protected areas assessed, mapped and conserved	<ul style="list-style-type: none"> <li>Inventory of biodiversity outside protected areas</li> <li>Strategy for conservation of biodiversity outside protected areas;</li> <li>Vermin &amp; problem animal control mechanisms</li> </ul>	0	Field visit ; reports	
Output 6.3: All wetlands inventoried, mapped & conserved for optimal ecological & economic benefits to local, national & transboundary interest groups	<ul style="list-style-type: none"> <li>Inventory &amp; database of wetlands in place &amp; regularly updated;</li> <li>Wetlands management structures at all levels</li> <li>Legal &amp; regulatory instruments</li> </ul>		Records Field visits	
Output 6.4: Increased number of people deriving their livelihoods from off-farm NR-based activities	<ul style="list-style-type: none"> <li>Proportion of women and youth enterprises based on ENR activities;</li> <li>% Contribution of handicrafts to GDP;</li> <li>No. of labour-intensive schemes set-up;</li> </ul>		Reports	Provide fiscal & monetary incentives for financial service providers
<b>Outcome 7: Policy, legal &amp; regulatory framework for ENR management</b>				
7.1 ENR policies & legislative regimes are effective & supportive to equitable and environmentally sustainable utilization of resources	<ul style="list-style-type: none"> <li>Number of policies reviewed for SEA application in key ENR- related sectors (forests, water, energy, Agriculture, Industry, etc.)</li> <li>Joint Sector Reviews (JSR) reporting performance improvements as a result of environmental management</li> </ul>		Reports (JSR)	Inadequate skills in undertaking SEA
	<ul style="list-style-type: none"> <li>Functioning water use regulatory regime</li> <li>Degree of enforcement of “Polluter pays” principles</li> </ul>		Documents, field visits, law enforcers from up and downstream, MoUs	Advocate for the institutionalization of water use regulation
	<ul style="list-style-type: none"> <li>Existence &amp; enforcement of provisions for collaborative forest management with local communities</li> </ul>		Records	
	<ul style="list-style-type: none"> <li>% of Districts &amp; sectors with bylaws on specific environment degrading activities – waste disposal, bush/grass burning, mining pollution,</li> </ul>		Documents, Reports	



Key Results/ Narrative summary	Key Performance Indicators and targets	Baselines (2009) and targets (2013)	Means of verification/ monitoring strategy	Critical Assumptions
Output 7.2: All ENR sector policies, laws and regulations reviewed to respond to other sectors' needs, EDPRS, MDGs and Vision 2020 aspirations	<ul style="list-style-type: none"> <li>• Appropriate policies &amp; subsidiary legislations put in place to operationalise relevant provisions of the Constitution, organic law on environment and land</li> </ul>			
Output 7.3: Rwanda's environmental policies, legislative & regulatory regimes harmonised with other EAC Countries	<ul style="list-style-type: none"> <li>• Extent of legal harmony with EAC countries</li> <li>• Joint projects implementation;</li> </ul>			
Output 7.4: capacity for implementation of international environmental conventions & treaties	Legal & regulatory measures to implement international Conventions & treaties that have been ratified by Rwanda			
<b><i>Outcome 8: An effective and sustainable governance framework for Environment and Natural Resources management established</i></b>				
Output 8.1: Effective policy coherence and coordination: (ENR SWAp developed & operationalised	<ul style="list-style-type: none"> <li>• Sector programming &amp; financing based on SWAp</li> <li>• At least 75% of ENR financing is programme-based and channeled through ENR basket (SWAp-based);</li> <li>• Regular Joint sector planning &amp; review involving districts &amp; non state actors;</li> </ul>	- None in 2008; 100% operational effective 2010; -		
Output 8.2: Robust and effective Monitoring, evaluation and learning system & culture	<ul style="list-style-type: none"> <li>• Operational M&amp;E framework integrating central &amp; decentralized levels</li> </ul>		<ul style="list-style-type: none"> <li>• Reports; Publications, awareness materials</li> <li>• Workshops &amp; meetings</li> <li>• Progress Reports produced at district &amp; ministerial/ sector levels;</li> <li>• Operational database</li> </ul>	
Output 8.3: Sustainable financing mechanisms & financial management arrangements	<ul style="list-style-type: none"> <li>• % of ENR activities receiving adequate funding;</li> <li>• Extent to which donor funded projects/ programmes use GoR PFM system;</li> <li>• % of donor funds provided through the budget</li> <li>• Operational Environment Fund (FONERWA)</li> </ul>		Records / reports	
Output 8.4: Total Economic valuation of selected natural resources undertaken and used to facilitate green accounting	<ul style="list-style-type: none"> <li>• Extent of incorporation of environmental costs into national accounts;</li> <li>• Operational Environment Fund</li> </ul>		National account records Economic valuation reports Sector Annual Budgets	
Output 8.5: Increased human resources & institutional capacity of	<ul style="list-style-type: none"> <li>• Institutional systems</li> <li>• % of personnel with full vacancy occupancy</li> </ul>		Records	

<b>Key Results/ Narrative summary</b>	<b>Key Performance Indicators and targets</b>	<b>Baselines (2009) and targets (2013)</b>	<b>Means of verification/ monitoring strategy</b>	<b>Critical Assumptions</b>
ENR agencies & ministries	<ul style="list-style-type: none"> <li>• Level of skills in SEA and EIA</li> </ul>			
Output 8.6: Civil society and private sector participation in ENR policy formulation & implementation enhanced	<ul style="list-style-type: none"> <li>• Participation of civil society in ENR cluster &amp; SWAps</li> <li>• Partnerships between ENR institutions &amp; CSOs</li> <li>• Public-private partnership in ENR management</li> <li>• Level of compliance with EIA and related legislation</li> </ul>		Attendance lists	
Output 8.7: ENR sustainability principles integrated into higher education teaching/ training & research programmes	<ul style="list-style-type: none"> <li>• Level of skill in applied scientific &amp; technological research</li> <li>• No. of research publications on ENR issues</li> <li>• Rate of annual intake of MSC &amp; PhD students in ENR-relevant disciplines</li> <li>• No. of collaborative graduate research projects commissioned</li> </ul>		Publications, reports, manuals, books Reports, Dissertations,	High turnover due to low pay & other work conditions
Output 8.8: Increased application of science & technology information in ENR policy formulation & operational decision making	<ul style="list-style-type: none"> <li>• Programmes linking research to policy</li> <li>• Research &amp; technology demonstrations in ENR sustainability</li> <li>• Private-public partnerships in innovative technologies</li> <li>• Regional &amp; international collaborative research networks</li> </ul>		Publications, visits Records	- Strategy for more resource mobilisation -

## Annex 2: Linking Sector priorities and Targets to MTEF (through Budget Programmes)

### Budget Programme 1: Sustainable Land Resources Management

Sub-programme(s)	Output statement	Key Performance Indicator	Baseline 2007	Target 2009	Target 2010	Target 2011	Target 2012	Target 2013
Land administration improved and simplified to improve tenure security	Land administration simplified to protect land rights and facilitate investments in land	- % of privately owned land registered/titled; - Operational Land Information management System and land data base management Systems - No. of Districts with fully functional Land Bureaus						
Land use planning and management processes in place for improved and sustainable land use	Land use master plans developed and operational to guide land use management decisions at national and decentralized levels	Annual percentage of land used in compliance with land use Master plan	0%	0%	2%	10%	30%	

### Budget Programme: 2: Water Resources Management

Budget Sub programme	Output statement	Key performance Indicators	Baseline 2007	Target 2009	Target 2010	Target 2011	Target 2012	Target 2013
Integrated and sustainable Management of Water Resources	Water resources are managed sustainably and in an integrated manner	No. of LWA committees formed in the Akagera Basin and its sub basins No of operating pilots in the Nyaborongo and Muvumba basins  Length (Km) of river banks protected on Nyabarongo and Muvumba rivers % of water spring catchments protected according to national standard.		0 0  0 25	2 0  10 65	2 1  80	2 1  90	2   100
Access to water for economic purposes	Water for economic purposes to all user institutions Increased	No. and nature of policies, laws and bye-laws in place to regulate water use for economic purposes			1	1	1	1
	Sector Planning, Management information systems strengthened for M&E and informed decision-making	No. of hydrological and limnometric stations (operational) No of published report on hydrological data accessible to public		5	20	35	50	65
	Human resources and institutional capacities in water resources management improved	No of personnel in water resources management recruited and trained	5	5	10			

**Programme 3: Sustainable Management of Forest and Biomass Resources**

Sub-programme(s)	Output statement	Key Performance Indicator	Baseline 2007	Target 2009	Target 2010	Target 2011	Target 2012	Target 2013
Forest resources managed for economic productivity and ecosystem services	National forest plan developed by 2009 and implemented by 2011	Forest and agro-forest coverage as a percentage of total surface land area increases (532,260 hectares in 2006 to 640,150 in 2011)	-	20.70%	21,40%	22,10%	22,80%	23,50%
Forestry and Agro-forestry resources used efficiently to provide energy, generate income & support livelihoods	In collaboration with MININFRA secure income from carbon trade grants through adoption of carbon neutral energy sources by 20% of the population	Annual wood consumption reduced by 30% (8,900,000 cubic meters in 2002 to 6,200,000 cubic metres)	-	8,3 Million m <sup>3</sup>	7,7 Million m <sup>3</sup>	7 Million m <sup>3</sup>	6,4 Million m <sup>3</sup>	6,2 Million m <sup>3</sup>

**Budget Programme 4 : Environmental Management Programme**

Sub-programme(s)	Output statement	Key Performance Indicator	Target 2009	Target 2010	Target 2011	Target 2012	Target 2013	Data source
1 Ecosystems sustainably managed for income generation	Local community involvement and incomes of population employed in the “new” ecotourism sector/other off-farm activities increased	Five (Gishwati, Mukura, Rugezi, Kamiranzovu, Nyabarongo – Akagera network) critically degraded ecosystems mapped, assessed and rehabilitated to contribute electricity supply and irrigation potential	8.4%	8.8%	9.2%	9.6%	10%	REMA/MINERENA Reports
Sub-programme 3 Pollution management improve	Database of all regulated substances updated annually and accessible to public	Environmental inspection checklists distributed to cell level in all districts						
	Greenhouse Gas Inventoried	Quantity of emitted CO2	7493 Gg of CO2					NAPA
	CDM Projects implemented	Reduction of CO2 emission	7517 Gg of CO2 sequestered by forest					

## Budget Programme 5: Mining

Sub-programme	Output statement	Key performance indicators	Target 2009	Target 2010	Target 2011	Target 2012	Target 2013
1. Performance, productivity and value addition in the mining sector enhanced and based on environmentally sustainable practices	Total revenue from exports of mineral products increases	Export revenues from minerals increased to US \$ 120 million	72	75	89	106	120
	Number of jobs created by the mining sector increase from 25,000 to 37,000 with at least 30% being women	Number of jobs created Proportion of minerals sector jobs held by women				37000	37,000 30%

## Programme 8: Policy and Legislative framework for sustainable management of Environment and Natural Resources

Sub-programme(s)	Output statement	Key performance indicators	Target 2009	Target 2010	Target 2011	Target 2012	Target 2013
7.1 Land administration policy, legal and regulatory framework	Land administration simplified to protect land rights and facilitate investments in land	Proportion of area of privately owned land held under written title.	5%	40%	60%	80%	100%
		Portion of issued land tiles owned by women	2%	10%	20%	30%	40%
7.2 Legal, Policy, Regulatory and Institutional Framework for Water Resources Management	Legal, Policy, Regulatory and Institutional Framework for Water Resources Management in place and operational	<ul style="list-style-type: none"> <li>- National Water resources (IWRM) Master Plan established and approved</li> <li>- Water resources management sector policy developed and approved</li> <li>- Water Law approved and operational</li> </ul>	0	Draft 1	1		
			0	1			
			1	1	1	1	1
7.3 Legal, policy, regulatory and institutional framework for forest management strengthened	Forest management plans (to acceptable national standard) developed and implemented in districts	At least one local-level organization per district is involved in forest management partnerships with Districts by 2009	6	12	18	24	30
7.4 Legal, regulatory and institutional framework for the mining sector strengthened	Exploration and exploitation of mineral resources compliant with national mining laws and regulations	At least 75% of local-level mining operations are meeting environmental standards	15%	30%	45%	60%	75%
7.5 Effective legal, regulatory and policy systems and institutional frameworks for management of the environment and natural resources implemented	Increase in number of projects compliant to national environmental standards and reduce approval period for EIA certificate per project	All environmental regulations and guidelines functioning at central and decentralized institutions to benefit national investment	8	8			

### Annex 3. Linking Programme Budget estimates to MTEF

#### Programme 1: Sustainable Land Resources Management

Sub-programme	Output statement	Key Activities	Estimated budget allocation 2009-13 (RwF millions)			Implementing agency
			Recurrent	Capital	Total	
1. Land administration policy, legal and regulatory framework	Land administration simplified to protect land rights and facilitate investments in land	1. Systematic and Sporadic land registration	602.210.366 <sup>24</sup>	24.435.901.727 <sup>25</sup>	25.038.112.093	NLC, donors
		2. Operationalisation of Land Database & Information Management System for effective land administration and Management (LIMS/LDBMS)	1.106.394.466	193.940.460 <sup>26</sup>	1.300.334.926	NLC, ICF MINIRENA
		3. Intensive Policy and law awareness and sensitization	84.058.755	86.648.500	170.707.255	MINIRENA, NLC, ICF
		4. Capacity building of Land Management Institutions	255.215.158	1.528.119.540 <sup>27</sup>	1.783.334.698	MINIRENA, NLC, ICF
		5. Set up laws and secondary legislation implementing the organic land law	36.180.765	0	36.180.765	MINIRENA, NLC, ICF
		8. Development of land registration procedures	36.180.765	0	36.180.765	National Land Centre
2. Sub-programme Land use planning and management	Land use master plans developed and operational to guide land use management decisions at national and decentralized levels	1. Development of National Land Use Master Plan	2.691.495.842 <sup>28</sup>	0	2.691.495.842 <sup>29</sup>	MINIRENA, NLC
		2. Monitoring Land use Master plan	224.000.000	320.000.000	224.000.000	NLC
		3. Development of Detailed land use plan (District level)	2.905.875.000	1.051.428.571	2.905.875.000	NLC
		4. Land demarcation and redistribution				
		• Gishwati	25.000.000	177.000.000	25.000.000	NLC
		• Eastern Province	84.058.755	0	320.000.000	NLC
		• Districts			1.051.428.571	NLC
		4. Relocation of the population living in high risky zones		0	177.000.000	NLC
		5. Intensive awareness and sensitization on land use	255.215.158		84.058.755	MINIRENA
		6. Capacity building in land use and management			255.215.158	MINIRENA, NLC

<sup>24</sup> From MTF

<sup>25</sup> From SRM different from BD MTF

<sup>26</sup> From ICF

<sup>27</sup> From ICF

<sup>28</sup> We considered the total cost of main contract with Swedesurvey in place of the BD MTF

<sup>29</sup> We considered the total cost of main contract with Swedesurvey in place of the BD MTF

Grand total du Programme LAND = 36 098 923 828 frw

Programme 2: Water Resources Management

Sub-Programme 1	Output Statement	Key Activities	Estimated budget allocation 2009-2013(RwF millions)			Implementing Agency
			Recurrent	Capital	Total	
Legal, Policy, Regulatory and Institutional Framework for Water Resources Management	Legal, Policy, Regulatory and Institutional Framework for Water Resources Management in place and operational	- Promulgation of Water Law.	400.000.000		400.000.000	MINIRENA
		- Promotion of water law to the public	800.000.000		800.000.000	MINIRENA
		- Water resources management sector policy developed and approved	200.000.000		200.000.000	MINIRENA
		- Water Resources Master Plan	4.554.000.000		4.554.000.000	MINIRENA
		- Creation of water resources management Agency	2.000.000.000		2.000.000.000	MINIRENA
Integrated and sustainable Management of Water Resources	Water resources are managed sustainably and in an integrated manner Water for	-hydrological limnometric (operational)	5.880.000.000		5.880.000.000	PGNRE
		- Great rivers basins studies	17.666.000.000		17.666.000.000	MINIRENA/PGNRE
		- Groundwater quality and quantity studies	7.22.000.000		7.22.000.000	MINIRENA/NUR
		-Establishment of Akagera Basin committee	124.215.000		124.215.000	MINIRENA
		- Protection of Water bodies against water Jacinth	1.071.000.000		1.071.000.000	MINIRENA
		- Water quantity and quality Analysis	489.839.725		489.839.725	MINIRENA
Access to water for economic purposes	Economic efficiency in water increased among all institutional users	- Rain water harvesting	4.026.000.000		4.026.000.000	CUEP/MIRENA
		- Groundwater exploration and exploitation.	7.228.000.000		7.228.000.000	LWI/MINIRENA
		- Availability of Water resources to increase coverage for safe potable water supply.	2.692.000.000		2.692.000.000	WP/MINIRENA
	- HR & Institutional capacities in water resources management improved	- Training and study tours	64.000.000		64.000.000	MINIRENA
	Sector Planning, Management information systems strengthened for M&E and informed decision-making	- Monitoring and Evaluation of activities related to Water Resources Management	302.923.113		302.923.113	MINIRENA/PGNRE
		-Water resources Information system network	3.150.466.594		3.150.466.594	MINIRENA/NUR
		Hydrological map	200.000.000		200.000.000	MINIRENA/PGNRE

**Budget Programme 3 : Forestry**

			<i>Estimated budget allocation 2002-2012</i>			IMPLEMENTATIO N AGENCY
<b>Sub-Programme(s)</b>	<b>Output statement</b>	<b>Key activities</b>	Recurrent	Capital	Total	
1. Forest resources managed for economic productivity and ecosystem services	National forest plan developed by 2009 and implemented by 2011	1. To disseminate the national forestry policy	405 541 882		405 541 882	MINIRENA
		2. To develop and disseminate standards of rational forestry management on national level	43 234 436		43 234 436	MINIRENA
		.3. Sensitization of the population and decision makers on forest policy, law and instructions	73 727 200		73 727 200	NAFA
		4. Support the private sector in wood transformation and value addition industries and establish the bamboo transformation and training unity	154 181 400		154 181 400	NAFA
		5. Good management of wooded areas	120 181 600	165 000 000	285 181 600	NAFA
		6. Complete forest inventory by adding forests under 0.5 ha; and Elaborate a reliable National Forestry Management Plan		240 000 000	240 000 000	Netherlands Embassy
<i>Sub-programme2:</i> Forestry and Agro-forestry resources used efficiently to provide energy, generate income & support livelihoods	In collaboration with MININFRA secure income from carbon trade grants through adoption of carbon neutral energy sources by 20% of the population	1. Disseminate the national forest plan	49 520 000		49 520,000	MINIRENA
		2. Plant 54 145 ha of forests on the bare hills; 10 000 km along the roads, on the river or lake banks ( transfer to district for planting forestry trees & agro-forestry trees)	5,878 502 315	821 800 000	6,700,302,315	NAFA
		3. Control exploitation and transport of tree products	41 857 992		41 857 992	NAFA
		4. Reduce annual wood consumption on account of energy by encouraging wood saving stoves in the country;		100 000 000	100 000 000	PAFOR
		5. Develop standards in order to organize the competition on forest harvesting techniques.	138 608 740		138 608 740	MINIRENA
		6. Undertake skills training and apprenticeship for wood processors to reduce wastes and improve quality and productivity;	50 000 000	100 000 000	150 000 000	MINIRENA
<i>Sub-programme 3:</i> Legal, policy, regulatory and institutional framework for forest management strengthened	Forest management plans (to acceptable national standard) developed and implemented in districts	1. Disseminate the updated forestry law	100 186 110		100 186 110	MINIRENA
		2. Elaborate Ministerial decrees for implementation of the forest law and regulations and law governing the small natural forests scattered in the country	34 472 640		34 472 640	MINIRENA

**TOTAL: 3,516,814,315**



**Environment Conservation and Protection Programme**

Sub-programme	Output statement	Key Activities	Estimated budget allocation 2008-12 (RwF millions)			Implementing agency
			Recurrent	Capital	Total	
Sub-programme 1 Effective legal, regulatory and policy systems and institutional frameworks for management, protection and conservation of the environment and natural resources implemented	Increase in number of projects compliant to national environmental standards and reduce approval period for EIA certificate per project	Developing regulations, improving and implementing policies and laws to ensure the Organic law is operational and effective	121830000	0		MINIRENA
		Institutional strengthening and capacity building of MINIRENA / REMA and all sectors in the following areas:	540164000	REMAProjects		MINIRENA/REMA
		▪ Implementing international environmental conventions	140264000	Conventions projects		MINIRENA
		▪ Strategic Environmental Assessment (SEA)	0	PEI/DEMP		REMA
		▪ Environment Impact Assessment (EIA)	93015000	PEI/DEMP		REMA
		▪ Integrated Ecosystem Assessment (IEA)	0	PEI/DEMP		REMA
		▪ Monitoring and Evaluation (M&E) of environment and Natural Resources	14100000	0		REMA
		▪ Research and planning to facilitate evidence-based environmental management	6200000	0		REMA
		▪ Establish environmental information management systems+ Geographic Information Systems (GIS)	159685000	0		REMA
		Institutional strengthening and capacity building at sectors and decentralized institutions for environmental stewardship	188600000	IMCE/PAB/PEI		REMA
		Support initiatives of civil society grassroots' community participation with special focus on women and the youth in environment protection and management	89000000	0		REMA
Build knowledge, awareness and sensitization through formal education and informal mechanisms. Public awareness and sensitization on environmental protection and conservation	108268250	REMA Projects		REMA		
Sub-programme 2 Ecosystems sustainably managed for income generation	Local community involvement and incomes of population employed in the "new" ecotourism sector/other off-farm activities increased	Design and carry out rehabilitation activities of key degraded wetlands such as Gikondo and Rugezi, Nyabarongo and Akagera watersheds and forests including Mukara, Gishwati and other natural forests	3302433750	IMCE		REMA
		Protected areas: rehabilitating original surface areas and reducing further degradation of Volcanoes, Nyungwe and Akagera National Parks	0	PAB		REMA
		Mapping, inventorying, classifying and demarcating boundaries of critical wetlands as Protected Wetlands for biological diversity, ecosystem research, ecotourism, etc.	0	IMCE		REMA

		Establishing public / private partnerships for ecosystem restoration / protection / marshland management for income generating uses. Mainstream Integrated Ecosystems Assessments (IEA) approach in the District Development Plans.	1500000	PEI		REMA
Sub-programme 3 <b>Pollution management improved</b>	Database of all regulated substances updated annually and accessible to public	Developing and implementing regulations and standards to control and manage solid and liquid waste and other pollutants from domestic, industrial, agricultural and trade sources	179568250	0		REMA
		Promote the adoption of cleaner production to control and manage industrial and commercial pollution – Establish Rwanda Cleaner Production Center (RCPC)	0	REMA		REMA
		Developing and efficiently disseminating detailed guidelines on the conduct of SEAs and EIAs	0	REMA/PEI		REMA
		Instituting measures to improve the exploitation of natural resources to minimize negative environmental pollution and other impacts	76702500	0		REMA
		Promote partnership efforts to adopt efficient pollution (fuel wood, solid waste, invasive species etc.) management technologies	29120000	0		REMA
		Support the operation of the National Designed Operational Entity (DOE) for the Clean Development Mechanism (CDM) and Promote CDM projects''. Implement the National Action Plan for Stockholm Convention on Persistent Organic Pollutants (POPs)	0	REMA/ UNCCC Project:		REMA

#### MINING Programme

Sub-programme	Output statement	Key Activities	Estimated budget allocation 2008-12 (RwF millions)			Implementing agency
			Recurrent	Capital	Total	
Sub-programme 1 Performance productivity and value addition in the mining sector enhanced and based on environmentally sustainable practice	Increasing production of the mineral substances in a sustainable practice	1. Geological mapping and mineral exploration	297 938 000	-	<b>297 938 000</b>	OGMR
		2. Technical support to and supervision of all mining & quarrying activities	203 140 000	-	<b>203 140 000</b>	OGMR
		3. Monitoring of natural hazards	24.000.000	-	<b>24 000 000</b>	OGMR
		4. Promoting peat as a supplement source of energy for mining	89 800 000	-	<b>89 800 000</b>	OGMR
		5. Promoting value addition of mineral and quarry and Kigali Mineral campus	10 760 143	-	<b>10 760 143</b>	MINIRENA
		6. Promoting investments in the mining sector				MINIRENA
		7. Monitoring & Evaluation of the mining sector				MINIRENA

Sub-programme 2 Legal, regulatory and institutional frameworks strengthened	Exploration and exploitation of mineral resources compliant with national mining laws and regulations	1.Drafting rules and regulations for the new mineral code and sensitising the stakeholders in the law	40 735 339	-	<b>40 735 339</b>	<b>MINIRENA</b>
		2.Purchasing equipment to start and to strengthen the laboratories	211 885 133	-	<b>211 885 133</b>	<b>OGMR</b>
		3.Strengthening small scale and artisan miners	21 679 566	-	<b>21 679 566</b>	<b>MINIRENA</b>
		4.Technical training of staff and other workers in the sector	181 000 000	-	<b>181 000 000</b>	<b>OGMR</b>
					<b>1 275 258 615</b>	

#### Annex 4: Status of International Conventions, Treaties and Protocols in Rwanda

Convention	Date signed/ ratified	Implementation progress
UN Convention on Biological Diversity (1995);	29 <sup>th</sup> May 1995	2000. September 2007
The Cartagena protocol on Biosafety to the Convention of Biodiversity signed in Nairobi from May 15, to 26, 2000 and in New York from June 5, 2000 to June 4, 2001	was authorized to be ratified by Law n° 38/2003 of 29 December 2003;	Prepared a National Biosafety framework and submitted it to GEF/ UNEP in 2006.
United Nations Framework Convention on Climatic Change (1998);	18 <sup>th</sup> August 1998	Submitted initial communication in June 2005; prepared a national plan of action with projects worth about US \$ 8.11 million. The GoR is also preparing second communication report.
The Kyoto Protocol to the Framework Convention on Climate Change adopted at Kyoto on March 6, 1998.	It was authorised to be ratified by Law n° 36/ 2003 of 29 December 2003.	
United Nations Convention on Desertification Control (1998)	22 <sup>nd</sup> October 1998	First reported in 2000, and most recent report submitted in December 2004. The GoR has developed a National Desertification Control Strategy and action plan.
Vienna Convention for the Protection of the Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer (2001);		Have implemented the implementation plan since 2003. Established a focal point office in REMA.
Stockholm Convention on Persistent Organic Pollutants/POPs (2002);		Developed a database on POPs.
The Ramsar International Convention of February 2, 1971 on Wetlands of International importance, especially as waterfowl habitats was authorised to be ratified by Law n° 37/2003 of 29 December 2003;	Authorized to be ratified by Law n° 37/2003 of 29 December 2003;	
The Bonn Convention On Conservation of Migratory Species of Wild Animals opened for signature on June 23, 1979	ratified by Rwanda on 29 December 2003 under Law n°	

	35/2003	
The Montreal International Convention on Substances that Deplete the Ozone Layer, signed in London (1990), Copenhagen (1992), Montreal (1997), Beijing (1999), especially in its Article 2 of London amendments, and Article 3 of Copenhagen, Montreal and Beijing amendments	Ratified by Rwanda on 29/12/2003	
Convention on the Prior Informed Consent (PIC) Procedure for certain hazardous chemicals and pesticides in international trade (2003);		
The Rotterdam International Convention on the establishment of international procedures agreed by states on commercial transactions of agricultural pesticides and other poisonous products, signed in Rotterdam on 11 September 1998 and in New York from 12 November 1998 to 10 September 1999	Approved by Presidential Order n° 28/01 of 24 August 2003 approving the membership of Rwanda;	
Recalling the Washington Agreement of March 3, 1973 on International Trade in endangered species of Wild Flora and Fauna.	Authorized for ratification by Presidential Order n° 211 of 25 June 1980	
BASEL Convention on the Control of Transboundary Movements of Hazardous wastes and their disposal as adopted at BASEL on 22 March 1989.	Approved by Presidential Order n° 29/01 of 24 August 2003	

Source: Various publications from REMA

### **Annex 5: INTEGRATION OF ENVIRONMENT INTO THE EDPRS SECTOR LOGFRAMES (Checklist)**

<b>Objectives/Outputs</b>	<b>Objectively verifiable indicators (outcomes or impacts)</b>	<b>Activities</b>
<b>All sectors</b>		
Support the preparation of the biennial State of the Environment Report	Biennial State of the Environment Report.	<ul style="list-style-type: none"> <li>- Contribute to the preparation of the biennial State of the Environment Report</li> <li>- Conduct a strategic environment Assessment (SEA) for the sector and an environmental impact assessment (EIA) for specific projects</li> </ul>
<b>1. INFRASTRUCTURES</b>		
Security of affordable energy supply of the country is ensured through production enhanced production and rational energy consumption	<ul style="list-style-type: none"> <li>- Number of households and institutions (schools, prisons, Hospitals, Tea factories,...) using improved energy technologies for cooking</li> <li>- Power (Mwh) produced by new micro-hydro power built in rural areas</li> <li>- Number of household using electricity in the rural areas</li> </ul>	<ul style="list-style-type: none"> <li>- Promoting efficient utilization of wood-fuel and creating alternative energy sources to address over-reliance on wood fuel.</li> <li>- Investing in rural electrification by extending the current grid to rural areas, and exploring the potential for mini / micro-hydro and solar energy potentials</li> </ul>
The volume and the quality of the infrastructures of the	- Proportion of urban area and the grouped habitat in the rural area in the total of the country surface	- Elaborate urban plan for cities and Imidugudu

<b>Objectives/Outputs</b>	<b>Objectively verifiable indicators (outcomes or impacts)</b>	<b>Activities</b>
<b>Habitat and Urban planning</b> in Rwanda is improved over the period 2007 to 2011.	- % of rural/Urban land that is registered/ titled	- Operationalize land registration services at district & Umurenge level
	- Proportion of the population with a decent housing	- Built houses for homeless people
	- Number of people living in Imidugudu villages.	- Promote the Villagisation Policy in rural areas and mainstream environmental issues into Villagisation programmes. - Sensitise the population on the National Housing Policy and National Land Policy.
		Undertake an EIA for each proposed Imidugudu site.
The meteorological data are regularly available	- Meteorological data available and included in UNFCCC reporting, climate change studies and SoE reporting. - Number of hydro meteorological stations according to the climatic zones in Rwanda	- Built and Rehabilitate hydro meteorological stations to provide information into the early warning systems for the adaptation on the climate change - Regular publication of meteorological data
2. All projects	An EIA <sup>30</sup> undertaken for each infrastructure development project	Undertake an EIA for each infrastructure development project
<b>2. WATER AND SANITATION</b>		
Water resources are managed sustainably and in an integrated manner	- Percentage of the underground water catchments and surface water compared to the quantity of total water - Biochemical oxygen demand (BOD) in the water masses - Concentration of faecal bacteria coliformes in fresh water	- Research on the quantity and quality of underground water and surface water
	- Number of rain water harvesting systems constructed (Households) - Number of Households with harvesting rain drainage systems	- Construct water harvesting and rain drainage systems
	- Quantity of Water conserved in the water conservation facilities in the urban and rural areas.	- Develop water storage and conservation infrastructure for multiple purposes.
	- National water information system in place and used for planning and decision making.	- Establish a water information system.
Access to sanitation services meeting hygienic standards increased	- Number of households/institutions with improved latrines - Number of households/institutions with improved sanitation facilities	- Popularize improved technologies of latrines starting with VIP, ECOSAN and using PHAST and HAMS methods
Improve the management of waste	<ul style="list-style-type: none"> <li>• Number of Households and institutions with management systems of worn water;</li> <li>• Legislation and policy on waste management in place.</li> </ul>	<ul style="list-style-type: none"> <li>• Construct system of worn water for households and institutions</li> <li>• Formulate legislation and a policy for the management of waste in collaboration with MININFRA and MINISANTE</li> </ul>

<sup>30</sup> Environmental Impact Assessment

Objectives/Outputs	Objectively verifiable indicators (outcomes or impacts)	Activities
	<ul style="list-style-type: none"> <li>• Certification system for waste management sites established and being implemented;</li> <li>• EIA's and environmental audits undertaken for waste management facilities;</li> <li>• Number of households with solid waste facilities</li> <li>• % of industries &amp; other commercial entities with waste water treatment facilities;</li> <li>• % of industries which have undergone environmental audit.</li> </ul>	<ul style="list-style-type: none"> <li>• Undertake EIAs and environmental audits for waste management sites.</li> <li>• Promote the establishment of a certification system for safe waste management facilities.</li> </ul>
<b>3. EDUCATION, SCIENCE, TECHNOLOGY and R&amp;D SECTOR</b>		
Education system responsive to individual and national needs.	Number of graduates in environmental studies - Standardized environmental training modules developed. - Number of teachers trained.	Develop environmental courses and studies at Tertiary Level. - Develop teaching training manuals for teachers working at Primary, Secondary and Tertiary Levels. - Train teachers on environmental issues.
	Number of environmental clubs.	Develop an education kit for environmental clubs that will help them identifying and implementing club activities.
Curriculum revised to be responsive to individual and national needs.	Environment integrated in the curricula and teacher training	Integrate Environmental education in the curriculum and teaching training programmes at all levels incl. adult education.
Improved EMIS system developed and functional	Update information from the CGIS-NUR available in the NISR	Provide informations from the CGIS-NUR to the National Institute of Statistics of Rwanda.
Opportunities and solutions to development based on scientific research	- Report on the Economic Analysis on environment degradation - Reports on the Ecosystem services and Human wellbeing - Reports on the of greenhouse gazes inventory, vulnerability, mitigation measures and adaptation on climate change	Undertake research on the link between environment and economic Development
<b>4. AGRICULTURE</b>		
Soil conservation	- Ha of soil with best quality for productivity - Map of each ecological zone by district	- Elaborate a regional pedological map and improve agricultural productivity in accordance with ecological zone
	- Ha of existing terraces protected and rehabilitated. - Ha of newly constructed terraces. - Ha of Trenches constructed and rehabilitated - Ha affected by desertification	- Develop and implement programmes for construction and rehabilitation of terraces (including radical terraces) across the country. - Develop program for fighting against desertification
Irrigation and Marshland development	% of agricultural development projects in marshlands for which EIA has been undertaken.	Cultivate marshlands only after adequate planning and approval of EIA.
Productivity of Animal resources	- % of household practicing zero grazing practices.	- Promote improved animal husbandry and zero grazing
	% of HH income from livestock per year	- Improve Animal Production and Productivity (milk, meat, honey,

Objectives/Outputs	Objectively verifiable indicators (outcomes or impacts)	Activities
		fish)
Develop and implement Fertilizer strategy	Agricultural extension staff at the district level trained on the use of pesticides.	Training of farmers in techniques of phytosanitary protection.
	Public awareness campaign carried out.	Build awareness on the use, dangers and handling of pesticides.
	Number of farmers using alternatives to the pesticides	Using of alternatives to pesticides with a particular accent to the natural pesticide (pyrethrenoides)
	% of organic per hectare per year. % of mineral fertiliser per ha per year	Promote the sustainable use of organic and mineral fertiliser, and soil improvement chemicals (e.g. lime) through training of farmers.
	Amount of fertiliser used per hectare per year.	Control the use of easily absorbed mineral fertilisers near springs, water sources, and water harvesting points in order to avoid the danger of pollution.
	Area and volume of water resources used for irrigation	Identify area and volume of water resources available to be used for irrigation
Food availability and vulnerable management	Land productivity (tones of food / ha/ annum)	- Support farmers to have access to use inorganic & organic fertilizers
	% of HHs' income from agriculture per year	- Support farmers to have access and to use improved seed - Support farmers in practicing soil conservation technologies
<b>5. PRIVATE SECTOR</b>		
Strengthen capacity to control the import and export of protected species	Import and export standards formulated and applied.	- Empower the Rwanda Bureau of Standards in the development and enforcement of regulatory standards. - Formulate import and export standards for products that form a potential threat to the environment.
	<ul style="list-style-type: none"> <li>• All police officers and officers from the Customs Department trained on the import and export of protected species.</li> <li>• Number of cases related to legal and illegal trade in protected species registered.</li> </ul>	Train law enforcement agents such as the Rwanda National Police and the Customs Department, on the protection of protected species.
Control the application of bio-technology	Biotechnology inventory completed. Monitoring system in place.	- Make an inventory of the bio-technology applications that are being applied or studied in the country. - Put in place a system to monitor biotechnology development in the country. - Investigate the kind of support research institutions and other parties involved in bio-technology require from the Government.
Assess the need for environmental rehabilitation of old mine sites	Action plan for the rehabilitation of priorities sites formulated.	Ensure that each mine project will have an approved mine closure plan before operate can commence.
	<ul style="list-style-type: none"> <li>- Rehabilitation fund operational.</li> <li>- Number of mine sites (ha) rehabilitated.</li> </ul>	- Increase the mine royalties and use the additional revenue for environmental rehabilitation.
Transformation of crops for adaptation on climate change.	- Number of SMEs for agro industry	- Develop the agro industry for the transformation and conservation of crops for the adaptation on climate change

<b>Objectives/Outputs</b>	<b>Objectively verifiable indicators (outcomes or impacts)</b>	<b>Activities</b>
To reduce the pressure on land due to the intensity of the agricultural activities	- Number of off-farm SME created around protected areas and degraded areas.	- Promote non farm income generating activities around the protected areas and degraded areas.
Strengthen the protection of protected areas and forests	- Number of ha of land around protected areas transformed into buffer zones. - Surface area of protected areas. - Number of communities involved in the management of protected areas. - Number of tourist visiting protected areas.	- Support the establishment of economically profitable buffer zones around protected areas. - Develop and put in place mechanisms for benefit sharing from National Parks for the local communities. - Ensure participation of communities in the management of protected areas.
Access to financial services to priority sectors improved <i>for all Rwandans</i>	- Amount of credit provided to investors in environmental projects - Number of banks involved in financing environmental projects	- Financing projects investing in environmental protection
Appropriate prioritized infrastructure for private sector development	- N° of New projects having an EIA approved by REMA.	- Conduct an EIA for each investment project especially for new industries and mining.
<b>6. HEALTH, NUTRITION AND POPULATION</b>		
To reduce prevalence and incidence of communicable and child diseases, in improving promotion, prevention, care and treatment (Malaria, ARI, TB, Diarrhea, HIV/AIDS/STI, PEV).	- Rate of morbidity and mortality due to malaria and , water-borne diseases. Number of health facilities that dispose their waste at a certified waste management site.	- Public awareness on the prevention of diseases due to the insufficient hygiene and malaria vectors, using PHAST and HAMS methodologies, - Improve the collection and disposal of hospital waste through the construction of certified waste management facilities.
To strengthen Family Planning Policy, Strategy and related Activities in order to reduce the population Growth and Birth Rate – <b>NEW</b>	- Number of trainers trained. - National birth-rate. - Population density by district.	- Develop public awareness materials on family planning. - Training of trainers in family planning. - Sensitization of the population on the impact of the high density of the population in the land degradation.
Reduce the number of people with respiratory diseases as a result of indoor pollution	- Number of people with respiratory diseases.	- Create awareness on the sources of indoor pollution, the threat that they pose to human health, and how it can be avoided.
Ensure the availability & affordability of quality drugs, vaccines, and consumables	- Rate of morbidity and mortality due to meningitis	-insure treatment for persons affected by meningitis effect of long dryness due to the climate change
Sensitize the general public	Number of target sectors sensitized on the use and disposal of	Implement a sensitisation programme on the use and management of



<b>Objectives/Outputs</b>	<b>Objectively verifiable indicators (outcomes or impacts)</b>	<b>Activities</b>
on the use, distribution, storage and disposal of pesticides and other hazardous materials	hazardous materials that are used within the different sectors.	hazardous materials for target sectors (e.g. agriculture, textile factories, and tea plantations).
<b>7. DECENTRALISATION AND CITIZEN PARTICIPATION</b>		
Public and private sector, civil society and DPs at central and local level effectively engaged in process of decentralisation	Number DDPs that address environmental issues.	Integrate environmental issues in the DDPs.
	Number of Districts that have formulated and that are implementing Environmental Action Plans.	Develop awareness programmes for environmental management promotion.
	Number of local master plans and land use plans formulated and implemented.	Promote the formulation of local master plans and land use plans
	- Number of water systems with a community organisation for management	- Promote the participation of communities in water management. - Sensitize the population on the importance of conservation and management of water.
Capacity (institutional, organizational, and operational) at national and local level strengthened to manage decentralized public service delivery and local development	- All district and local governments trained in land administration and land-use planning and management. - Awareness on National Land Policy built at all levels in society. - Awareness on conducting an environmental impact assessment and an integrated ecosystem assessment	Strengthen and improve the capacity of decentralized authorities in land administration, land-use planning and management. - Sensitize the population on the national land policy and how it will be implemented. - Train the decentralized entities in the environmental impact assessment and an integrated ecosystem assessment.
<b>8. CAPACITY BUILDING AND EMPLOYMENT</b>		
Supporting and stabilizing macroeconomics management in order to ensure rapid growth	Cost of environmental degradation as a % of GDP.	Structure accounting and financial management systems to facilitate analyses of benefits /achievements and costs of environment and natural resources.
	- N° of new jobs created in the area of environment - N° of employees by HIMO in the projects of environmental protection.	- Create opportunities to attract investments and jobs creation in the area of environment - Use HIMO approach in the projects of environment protection.

Source: Inputs into the EDPRS: publications from REMA