

European Community's Poverty Reduction Effectiveness Programme
(EC-PREP) Research Project:

Streamlining Poverty-Environment Linkages in the European Community's Development Assistance

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Multi-level Poverty-Environment Analysis
Activity 4

Report and Recommendations – RWANDA



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Rwanda Environment Management Authority



REPUBLIC OF RWANDA

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Nº 041/DG/05



RWANDA ENVIRONMENT MANAGEMENT AUTHORITY (REMA)

Dear Madam/Sir;

The Rwanda Environment Management Authority is pleased to release this report along with the World Wildlife Fund for Nature. This document reports the findings from an intensive study of poverty-environment linkages within southeast Rwanda. These linkages create a cycle of impact: human activities impact the environment, and environmental degradation impacts socioeconomic wellbeing. We believe that similar linkages affect the rural poor throughout Rwanda, especially due to high pressure and dependence on limited natural resources.

If Rwanda is to meet the objectives outlined in the Vision 2020, Poverty Reduction Strategy Paper, and Millennium Development Goals, we must be conscious of and mitigate the environmental impacts of development projects. We hope that this report will serve as a tool for integration of poverty-environment linkages into all development projects in Rwanda. As outlined in the Environmental Law, it is the obligation of all institutions and organizations in Rwanda to manage the environment in a sustainable way. It is only through true collaboration that together we can achieve development while limiting environmental impacts, saving our precious natural resources for the next generation of Rwandans.

Sincerely,

Dr. Rose MUKANKOMEJE
Director General, REMA



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Executive Summary

This study is part of a larger review of the European Community's 9th European Development Fund (EDF) within African, Caribbean, and Pacific countries to evaluate the extent to which poverty-environment linkages are recognized and integrated into development financing. The Cotonou Agreement of 2000 identified three horizontal or "cross-cutting" themes for the success of development and poverty reduction:

- (i) Gender equality;
- (ii) Environmental sustainability; and
- (iii) Institutional development and capacity building.

Mainstreaming of environmental issues is not always tangible; most economic development comes at the expense of some natural resource. This study strives to come up with tangible recommendations to the European Community (EC) in Rwanda to mainstream environmental considerations into their support for rural development. Specifically this study examined the planned support of to the Government of Rwanda for the Decentralized Programme for Rural Poverty Reduction (DPRPR), a four-year, 32 million Euro project to give support to decentralized levels of government: cellule, sector and district level, and to the national level. Funds for the national level will support the Common Development Fund (CDF) within the Government of Rwanda (GoR), an institution within the Ministry of Local Government, which disseminates national funds directly to districts for project or budget support. Support for the CDF is pledged to the southeastern Kigali-Ngali and Kibungo Provinces.

Methods

Kibungo Province was selected as a study site for this project; three sectors within three districts were subsequently selected and visited. The approach used a multilevel analysis of economic, social, institutional issues set in the national policy context. At the local level, consultants conducted focus groups with community members in each of the nine sectors selected. During these focus groups, poverty-environment linkages specific to Kibungo were identified. Interviews were also conducted with authorities at the sector, district, province and national level to identify how environment mainstreaming is being addressed through the decentralized system.

Poverty-Environment Linkages

Rural livelihoods in Kibungo Province, and Rwanda in general, are intimately tied to the environment. More than 95% of the population in Kibungo relies on subsistence agriculture; all economic activities can be linked to land, forests, water resources (lakes and wetlands), and subsoil. Especially in the post-war and genocide period, the impact of human pressure on the natural environment has resulted in the scarcity and degradation of resources:

- (i) the drastic reduction of household land parcels and the loss of the fertility of arable land;

- (ii) the quasi-disappearance of forest resources and the lack of reforestation; and
- (iii) increased drought, drainage of lakes and exploitation of wetlands, and the beginning of a desertification process in some semi-arid zones of this province.

The post-colonial history of Rwanda has been punctuated by periodic emigration and immigration of people. The need to resettle people in villages and *imidugudu* (resettlements) has had evident impacts on the environment. In addition to the clearing of natural areas like Gishwati Forest and Akagera National Park, these impacts include (i) uncontrolled cutting of trees for construction and soaring demand for charcoal and other forest products; and (ii) remoteness of the communal agricultural lands has led to increased production costs due to time spent traveling on foot to fields, theft of crops and destruction of crops by animals.

Unless environmental sustainability is integrated into appropriate policies, programmes and projects, vulnerable communities in Kibungo Province and elsewhere are likely to suffer far-reaching consequences as a result of environmental degradation. Some of the consequences may relate to (i) food insecurity due to poor soils; (ii) vulnerability to natural disasters especially landslides, floods and drought; and (iii) social insecurity due to conflicts over the limited resources.

Opportunities and Constraints to Mainstream Poverty-Environment Linkages

The current political framework of the EC and the GoR provide many opportunities to mainstream poverty-environment linkages:

- (i) Review of African, Caribbean, and Pacific (ACP) Cotonou Agreement;
- (ii) Review of the Rwanda Poverty Reduction Strategy Paper (PRSP);
- (iii) Implementation of Millennium Development Goals (MDGs);
- (iv) Development Partners Co-ordination Group; and
- (v) Common Development Fund.

There are also constraints to mainstreaming poverty-environment linkages:

- (i) Lack of understanding of linkages by decision-makers and communities;
- (ii) Inadequate capacity in valuation of natural resources; and
- (iii) Lack of poverty-environment indicators.

General Recommendations

The general recommendations for the GoR and its donor community are to implement a system of environmental integration. It is important to ensure the mainstreaming of poverty-environment linkages into the PRSP II and sectoral policies, plans, programs, and projects. In addition, support to the CDF is recommended, specifically to develop environmental guidelines to CDF project screening of projects and to build the capacity of implementing entities: decentralized entities, non-governmental organizations (NGOs), community-based organizations, and institutions.

The development of environmental and poverty-environment indicators are recommended to enhance impact monitoring for development objectives. It is also recommended that a formal GoR- Environmental Donor Group be established to enhance mobilization and coordination of donor support for the environmental sector. Additionally, the Rwanda Environment Management Authority (REMA) needs to be strengthened with the development of a strategic plan, environmental impact assessment (EIA) guidelines, and environmental quality standards. These guidelines and standards in turn will provide needed information for the CDF and local authorities in project assessment.

Decentralization is now considered to be crucial for effective public policy, democracy, and natural resource management. For decentralization to succeed, it is imperative that technical expertise is built to provide technical support to project development and to monitor the environmental impact of projects. Also, to achieve the bottom-up approach as espoused under CDF (mobilization and empowering of communities to take ownership of the rural development initiatives), it is important that capacities of community organizations and institutions are strengthened.

Specific Recommendations for the EC Rwanda Delegation

The results from this study encourage the EC to mainstream environment into budget support for Rwanda. The GoR encourages budget support by donors to ensure that the national priorities identified in the PRSP are implemented. Through this support the EC, through the Country Strategy Paper (CSP), could apportion at least a certain percentage of the budget support for projects and activities that contribute to the improvement of the environment. This will ensure that all projects whether under rural development, macro support, or good governance/institutional support mainstream environmental considerations in all their activities. It is also recommended that the EC and other development partners consider direct support to REMA and decentralized entities for enhanced environmental law compliance and enforcement. Because of the unprecedented demand and expectations on these institutions, it is important that they are supported financially and technically to ensure good environmental management. This may not be achieved with the limited grants from the GoR through the national budget.

It is recommended that a Strategic Environmental Assessment (SEA) be completed for the 9th EDF with a view of integrating environmental considerations into the 10th EDF. Supplementary to the SEA, an elaborate environmental impact monitoring program should be established. It is also recommended, through the CDF, that special attention be given to the transfer and adoption of environmentally sound technologies that will help to mitigate environmental impacts such as pollution, raw material wastage, and waste production.

Résumé

Cette étude fait partie de la révision globale du 9^e Fond Européen de Développement (EDF) constitué par la Communauté Européenne pour financer les projets dans les pays en Afrique, des Caraïbes et Pacifiques. Elle analyse à quel point les considérations environnement-pauvreté sont reconnues et intégrées dans le financement des projets de développement. L'Accord de Cotonou signé en 2000 a identifié trois thèmes parallèles qui peuvent contribuer à la promotion du développement et à la réduction de la pauvreté :

- (i) Égalité du genre
- (ii) Durabilité de l'environnement
- (iii) Appui institutionnel et renforcement des capacités

L'intégration des considérations environnementales dans la réduction de la pauvreté n'est pas toujours tangible ; le progrès économique dépend souvent des ressources naturelles. Cette étude vise à soumettre des recommandations tangibles à la Représentation de la Communauté Européenne (EC) au Rwanda afin d'intégrer les considérations environnementales dans les programmes de développement rural. Concrètement, cette étude examine le projet de financement octroyé à l'Etat Rwandais à travers son Programme Décentralisé pour la Réduction de la Pauvreté en Milieu Rural (DPRPR). Ce financement de 32 millions d'Euros est destinés à appuyer les projets de développement dans les unités décentralisées : cellule, secteur, district et nation. Au niveau national, les ressources financières seront utilisées pour appuyer les Fonds Commun de Développement (CDF) au sein du Ministère de l'Administration Locale, créés par le Gouvernement Rwandais (GoR). Ces CDF sont distribués directement aux districts pour financer les projets ou les budgets. L'appui aux CDF est octroyé pour financer les interventions étant prévues dans les provinces du Sud-Est, à savoir Kigali-Ngali et Kibungo.

Méthodologie

La province de Kibungo a été choisie comme site pilote de ce projet. Ainsi, trois-neuf secteurs dans chacun des 3 districts ont été choisis et visités. L'approche adoptée consiste en une analyse à plusieurs niveaux des aspects économiques, sociaux et institutionnels perçus dans le cadre de la politique nationale. Au niveau local, les consultants ont organisé des discussions en groupes avec la population locale dans chacune des neuf secteurs choisis. Au cours de ces échanges en groupes, les considérations pauvreté-environnement de la province de Kibungo ont été identifiées. Les interviews avec les autorités au niveau des secteurs, des districts, des provinces et au niveau national ont été organisés afin d'examiner comment les considérations environnementales sont abordées dans les unités décentralisées.

Les considérations pauvreté-environnement

Les conditions de vie de la population rurale dans la province de Kibungo comme ailleurs au Rwanda dépendent de l'environnement. Plus de 95% de la population de la province de Kibungo dépend de l'agriculture pour la survie; toutes les activités socio-économiques dépendent des ressources du sol, de la forêt, de l'eau (les lacs et les marais) et du sous-sol. Dans la période de l'après guerre et génocide surtout, l'impact de la pression humaine sur l'environnement a occasionné la dégradation des ressources naturelles:

- (i) la réduction des dimensions des lopins des terres appartenant aux familles et la perte de la fertilité des terres arables;
- (ii) la quasi-disparition des ressources des forêts et l'absence des activités de reboisement; et
- (iii) une augmentation progressive de la sécheresse, le drainage des lacs et l'exploitation des marais, le début d'un processus de désertification dans certaines régions semi-arides de cette province.

L'histoire du Rwanda après la période coloniale a été marquée par des émigrations et immigrations périodiques des personnes. La nécessité d'installer les gens dans les villages et les sites *imidugudu* a eu des impacts incontestables sur l'environnement. En plus du défrichage des forêts naturelles comme Gishwati et le Parc National Akagera, ces impacts incluent (i) la coupe incontrôlée des arbres pour la construction et le besoin toujours croissant ressenti par la population d'obtenir la braise et autres ressources de la forêt ; et (ii) la distance qui sépare les champs des villages est longue et a occasionné la hausse des prix car les gens doivent marcher pendant des heures, sans oublier le vol des récoltes et les animaux qui détruisent les récoltes.

Si les politiques, les programmes et les projets n'intègrent pas les considérations environnementales, les communautés vulnérables de la province de Kibungo et d'ailleurs risquent de souffrir de graves conséquences suite à la dégradation environnementale. Ces conséquences peuvent être liées à (i) l'insécurité alimentaire due aux sols pauvres ; (ii) la vulnérabilité face aux calamités naturelles surtout les éboulements, les inondations et la sécheresse; et (iii) l'insécurité sociale causée par les conflits suscités par le manque de ressources.

Opportunités et contraintes pour intégrer les considérations Pauvreté-Environnement

Le cadre politique actuel de la EC et du GoR offrent plusieurs opportunités d'intégrer les considérations pauvreté-environnement:

- (i) Révision de l'Accord des pays de l'Afrique, Caraïbes et Pacifiques signé à Cotonou;
- (ii) Révision du Document de Stratégie de Réduction de la Pauvreté du Rwanda (PRSP);
- (iii) Les Objectifs de Développement du Millénium (MDGs);

- (iv) Groupe de coordination des partenaires en développement; et
- (v) Fonds Commun de Développement (CDF).

Mais, cette nécessité d'intégrer les considérations environnementales dans les programmes de réduction de la pauvreté se heurte aussi à certains contraintes dont:

- (i) Les décideurs et les communautés locales ne comprennent pas la pertinence des ces considérations;
- (ii) L'insuffisance de compétence en matière d'évaluation d'impact environnementale; et
- (iii) Le manque d'indicateurs pauvreté-environnement.

Recommandations Générales

Les recommandations générales pour GoR et ses bailleurs visent à mettre en œuvre un système d'intégration environnementale. Il est important d'intégrer les considérations pauvreté-environnement dans PRSP II ainsi que dans les politiques, les plans, les programmes et les projets sectoriels. Par ailleurs, l'appui aux CDF est recommandé, concrètement pour développer les orientations environnementales à l'intentions des projets des CDF et pour renforcer les capacités des organes chargés de les mettre en application: les unités décentralisées, les organisations non gouvernementales (NGOs, les associations des membres des communautés locales, et les institutions.

Il faut développer les indicateurs environnementaux et de la pauvreté-environnement pour renforcer le contrôle de l'impact en se référant aux objectifs de développement. Il faut créer aussi un groupe avec des représentants du GoR et des bailleurs qui collaborent pour la protection de l'environnement. Ce groupe visera à renforcer la mobilisation et la coordination des activités que les bailleurs financent pour protéger l'environnement. De plus, il faut renforcer Rwanda Environment Management Authority (REMA) en lui dotant d'un plan stratégique, des orientations pour l'évaluation de l'impact sur l'environnement (EIA), et des normes pour juger de la qualité de l'environnement. Ces orientations et ces normes fourniront à leur tour les données nécessaires que les CDF et les autorités locales auront besoin dans leur évaluation du projet.

Désormais, la décentralisation est considérée comme une chose essentielle l'ordre public, la démocratie, et la gestion des ressources naturelles. Pour que la décentralisation puisse réussir, il faut renforcer l'expertise des techniciens qui appuieront le projet de développement et contrôler l'impact que les projets auront sur l'environnement. Par ailleurs, pour réaliser l'approche verticale adoptée par les CDF (mobilisation et renforcement des capacités des communautés qui sont appelées à assumer la responsabilité des interventions qui visent le développement rural), il faut renforcer les capacités des associations et institutions créées par les communautés locales.

Recommandations destinées à la Représentation de l'EC au Rwanda

Les résultats de cette étude encouragent l'EC à intégrer l'environnement dans son programme d'appui au Rwanda. GoR encourage l'appui des bailleurs dans la mesure où les priorités de l'Etat mentionnés dans PRSP peuvent être mises en application. A travers le Document de Stratégie de Coopération et Programme Indicatif pour le Rwanda (Country Strategy Paper, CSP), l'EC peut considérer comment répartir un certain pourcentage du budget pour financer les projets et les activités qui contribuent à la protection de l'environnement. Cet appui garantira si toutes les activités des projets du développement rural, de l'appui macro, de la bonne gouvernance ou de l'appui institutionnel tiennent compte des considérations environnementales. On recommande également que l'EC et d'autres partenaires oeuvrant dans le domaine du développement fournissent leur appui direct à REMA et aux entités décentralisées pour la mise en application de la loi sur la protection de l'environnement. En tenant compte des demandes et des attentes de ces institutions, une aide financière et technique s'avère nécessaire pour une bonne gestion de l'environnement. Ceci ne peut pas être réalisé avec les maigres subsides du GoR octroyé par le budget national.

Nous recommandons qu'une évaluation stratégique de l'environnemental (SEA) soit faite pour les 9^e EDF en vue d'intégrer des considérations environnementales dans le 10^e EDF. En plus de le SEA, il faut mettre en place un programme de contrôle de l'impact sur l'environnement. Nous recommandons également qu'à travers les CDF, une particulière attention soit accordée au transfert et à l'adoption des technologies qui sont compatibles avec l'environnement, elles contribueront à atténuer l'impact sur l'environnement des facteurs tels que la pollution, les déchets des matières premières et la production des déchets.

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List of Abbreviations

ACP	African Caribbean and Pacific
ANP	Akagera National Park
CDC	Community Development Committee
CDF	Common Development Fund
CDP	Community Development Plan (Plan de Développement Communautaire)
CEPEX	Central Public Investments and External Finance Bureau
CSP	Country Strategy Paper
DED	German Development Service
DEMP	Decentralization and Environmental Management Program
DFID	Department for International Development
DPCG	Development Partners Co-ordination Group
DPRPR	Decentralized Programme for Rural Poverty Reduction
EC	European Community
EDF	European Development Fund
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GoR	Government of Rwanda
GTZ	German Technical Cooperation
HARPP	Harmonization & Alignment in Rwanda of Projects and Programmes
ISAR	Institute Superior de Agricultural Recherche
LWF	Lutheran World Federation
M&E	Monitoring & Evaluation
MDGs	Millennium Development Goals
MINAGRI	Ministry of Agriculture and Livestock
MINALOC	Ministry of Local Government, Community Development & Social Affairs
MINECOFIN	Ministry of Finance and Economic Planning
MINICOM	Ministry of Commerce, Industry, Investment Promotion, Tourism, and Cooperatives
MINITERE	Ministry of Lands, Environment, Forestry, Water, and Mines
MIS	Management Information System
MPO	Macroeconomics Program Office
MTEF	Medium Term Expenditure Framework
NGO	Non Governmental Organization
ORTPN	Office Rwandaise du Tourisme et des Parcs Nationaux
PEAMR	Projet d'eau et Assainissement en Milieu Rural
PER	Public Expenditure Review
PMU	Project Management Unit
PRS	Poverty Reduction Strategy
PRSP	Poverty Reduction Strategy Paper
RBS	Rwanda Bureau of Standards
REMA	Rwandan Environmental Management Authority
RNE	Royal Netherlands Embassy
RNIS	Rwandan National Institute for Statistics
SEA	Strategic Environmental Assessment
SEAGA	Socio-Economic and Gender Analysis Programme
SIDA	Swedish International Development Cooperation Agency
SOPEM	Societe des Pêcheries de Mutara
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
UWSS	Urban Water Supply and Sanitation
WWF	World Wildlife Fund for Nature

1.0 Introduction

1.1 Background

Rwanda is a small country in the Great Lakes Region of Africa, covering 26,338 km² for a population of 8,128,553 inhabitants (National Census Service 2002). The country's relief consists of a chain of mountains along the Albertine Rift whose altitude varies between 2500 and 3000 m and constitutes the Congo-Nile Divide, a central valley ranging in altitude from 1500 m to 2000 m, the low plains of the Southwest (Bugarama) at 900 m of altitude and the savannas of the East with minimum relief of 1100 to 1500 m of altitude). The country is covered by an extensive network of rivers, wetlands, and lakes situated astride two river basins (Congo and Nile Rivers).

The climate of Rwanda is moderate continental tropical, without drastic variations of temperatures (averaging 16°C to 24°C), varying by altitude and successive dry and rainy seasons. Vegetation varies according to the relief and the distribution of precipitation. Diverse species exists among the dense forest of the western mountain chain and the semi-arid savanna of the East. Likewise, Rwanda supports a diversity of agricultural crops.

Since the 1960s, the human environment in Rwanda has been punctuated with violence, immigration, and emigration. For example, during and after the genocide of 1994, an estimated 2 million people fled to neighboring Zaire (now the Democratic Republic of Congo) and Tanzania. The war (1990-1994) and genocide (1994), has left a permanent mark on the country. Over the last 10 years, Rwandans (some refugees since the 1960s) have returned to their home country bringing with them different cultures and languages; today's Rwanda is a mosaic of people with vastly different family histories. Currently, Rwanda is transitioning from a period of recovery and reconstruction after the war and genocide to a period of development and growth. Although reconciliation remains as a priority for the people and the GoR, Rwanda now looks for opportunities for industrial growth, social development, and poverty reduction.

Rwanda's economy has experienced high population growth in recent years, however economic transformation has lagged behind. The Rwanda Poverty Reduction Strategy Paper (PRSP) identifies both external factors and policies have contributed to this. Through out the 1980's agricultural productivity *per capita* and crop yields declined steadily and economic policy did little to encourage agricultural transformation. In addition the country suffered a substantial terms of trade shock when international coffee prices fell. As a result per capita income dropped sharply during the 1980's and early 1990's.

During the Mid 1990's the genocide and continued insecurity within Rwanda created extreme social and economic upheaval further contributing to declining per capita income, as households were unable to engage in their normal economic activities. Structurally this poses several macroeconomic problems such as (i) low agricultural

productivity; (ii) low human resource development; (iii) limited employment opportunities and an oversupply of unskilled workers relative to their demand; (iv) high population density and growth; (v) environmental degradation and declining soil fertility, poor water management and deforestation; and (vi) high cost of fuel and other transport costs on account of Rwanda's land locked position.

1.2 The State of the Environment in Rwanda

Rwanda's stock of environmental resources primarily lies in the land, wetlands, forests, and water. In most cases, environmental degradation in Rwanda has occurred not by massive exploitation of resources, but by the cumulative effects of subsistence exploitation by an ever-increasing population. Of the 26,338 km² of land in Rwanda, only 52% of it is suitable for agricultural production (MINITERE 2003env). The average size of a family plot is 0.76 ha, because of the high population density (322 people/km²; National Census Service 2002) on land that is only partially arable. The pressure put on land, and subsequent degradation of soils is already a troubling situation. As a consequence, the limited amount of available land has forced farmers to reduce periods of fallow and also to move to marginal agricultural lands on steep slopes and the increased agricultural activities within wetland areas. Cultivation of steep slopes has led to the deterioration of soil fertility as a result of increased soil erosion. The Ministry of Agriculture and Livestock (MINAGRI) estimates that Rwanda loses the capacity to feed 40,000 people each year due to soil erosion that takes each year an estimated 945,200 tonnes of organic matter, 41,210 tonnes of Nitrogen, 280 tonnes of phosphorus, and 3 tonnes of potash (MINITERE 2003for).

Overexploitation of natural resources, especially forests, was an inescapable consequence of the GoR's effort to resettle returning Rwandan refugees after the genocide of 1994. Because land area is limited, resettlement some times very urgent, and the existing vulnerable social situation in Rwanda, the GoR was forced to resettle people into formerly uninhabited natural areas like the former forest of Gishwati and Akagera National Park. Resettlement not only led to the deforestation and conversion of natural areas, but accelerated deforestation outside of the reserves and parks as well. As a consequence, the forests in Rwanda are under intense pressure for conversion as well as a source of forests products such as fuelwood to meet the increasing demand. It is estimated that in 2002, the country lacked 6,719 m³ of wood to fulfill the needs of the country (MINITERE 2003for). The gap between supply and demand continues to increase while afforestation and reforestation efforts cannot match the rate of exploitation. This explains the reduction of forests cover of the total land area in the country from 26% in 1993 to the current estimate of less than 18% (MINITERE 2003for). Unless urgent and pragmatic steps are taken to stem increase the forest cover, Rwanda may be destined to serious desertification with far-reaching consequences on its economic sustainability and social and environmental security.

Rwanda's reservoirs of water in wetlands and lakes cover approximately 14.9% of the surface area (6.3% for wetlands; 8.6% for lakes and rivers) (MINITERE 2003env). Most of these bodies of water are within the Lake Victoria watershed; water that subsequently

ends up in the Nile River. The majority of wetlands have been drained to create arable land for agricultural production and human settlement. This has interfered with the ecosystem goods and services ordinarily derived from wetlands. As a consequence, vulnerable groups, especially the rural poor, who have been pushed into these fragile ecosystems are increasingly exposed to frequent natural disasters such as devastating landslides and floods. For example, floods have been of common occurrence in Byumba, Ruhengeri, and Gisenyi provinces and massive landslides have occurred in Nyamutera (1989), Gishwati (2001), and Bweyeye (2002) (MINITERE 2003for). Erratic and inadequate rainfall manifests itself in form of drought is now frequently experienced with devastating effects on subsistence agricultural production.

It is evident that environmental degradation and environmental insecurity continue to increase forcing vulnerable communities to move to marginal areas with devastating long term consequences on their livelihoods. This is well illustrated by the recently concluded mapping and spatial analysis of poverty-environment indicators undertaken under GoR/UNDP collaboration. Under the study, four major clusters were identified (Table 1).

Table 1. *Poverty-environment clusters, or zones, as identified by the GoR/UNDP project for poverty-environment indicators and policy options for Rwanda.*

Poverty-Environment Cluster	Major Poverty-Environment Issues
Ruhengeri, Gisenyi, Byumba, Kibuye, and Busozo within Cyangugu	<ul style="list-style-type: none"> – Deforestation, soil erosion – Landslides (and volcanic eruptions) – Safe drinking water – Population pressure – Small household land units
Gitarama, Gikondo, Butare, Kigali-Ngali	<ul style="list-style-type: none"> – Soil erosion and land degradation – Population pressure – Small household land units
Umutara, Kibungo, Bugesera	<ul style="list-style-type: none"> – Drought – Water scarcity – Decline in pastures – Overstocking – Wildlife-human conflict
Kigali City	<ul style="list-style-type: none"> – Unemployment – Sanitation – Water pollution
<i>Source: GoR/UNDP Poverty-environment indicators and policy options for Rwanda, 2005</i>	

1.3 European Community Development Support

1.3.1 The 9th EC Development Fund (9th EDF)

The European Community currently lists its areas of development throughout the world as pertaining to (i) sustainable economic and social development of developing countries, and particularly the most underprivileged among them; (ii) harmonious and progressive integration of developing countries into the world economy; and (iii) fight against poverty in developing countries.

The Cotonou Agreement (2000) set the broad agendas and approaches for EC development programs in 77 African, Caribbean, and Pacific (ACP) countries, including Rwanda. The agreement, signed by all parties in June 2000, is built on five pillars to ensure sustainable growth. These are:

- (i) A comprehensive political dimension;
- (ii) Participatory approaches – Democratic space;
- (iii) A strengthened focus on poverty reduction integrating environmental sustainability;
- (iv) A new framework for economic and trade cooperation; and
- (v) A reform of financial cooperation.

The agreement strengthened programs of poverty reduction to explicitly have the goal of poverty eradication. In the area of development and poverty reduction, the EC recognize the importance of environment sustainability in development by including it as one of the three horizontal or “cross-cutting” themes. The other two horizontal themes include gender equality and institutional development and capacity building. Realization of the horizontal environmental sustainability theme has proved difficult, as stated by the ACP-EC joint assembly in their report “Sustainable management and conservation of natural resources in ACP countries in the context of the 9th EDF Aid Programming” of 2003. The report recommends EC development programs to further consider environmental aspects under the purview of poverty reduction.

1.3.2 EC Development Support in Rwanda

The European Community has a long history of supporting foreign development, and has been a major supporter of GoR initiatives in Rwanda since 1994, initially offering 114 million Euros to support humanitarian and rehabilitation efforts. The European Community, through the 8th EDF, supported the 2002 national census, good governance, judicial, and infrastructural reforms.

The European Community in Rwanda has now moved into the 9th EDF focusing largely on rural development and macro-economic support. The 9th EDF for Rwanda includes two envelopes of funding. The first envelope, “Envelope A,” provides 124 million Euros for rural development and macro-economic support. Included in the projects for rural development is a project entitled “Decentralized Programme for Rural Poverty

Reduction (DPRPR)”. This project aims to give financial support directly to communities to initiate and implement their own community development projects. The total budget of the program is 36.5 million Euros to finance the project over 4 years. Ten million Euros will be used to finance a countrywide support program directly to the 9,176 cellules, the most local level of government (*Ubudehe*). Most of the remaining budget will go to support sector and district development priorities within the impoverished southeastern region of Rwanda in Kigali-Ngali and Kibungo Provinces. The Common Development Fund (CDF), a funding facility established under the Ministry of Local Government, Good Governance, Community Development, and Social Affairs (MINALOC), will receive funds to distribute to each district directly for project or budget support. In addition to the monetary support to the cellules, sectors, and districts, the DPRPR will provide a Project Management Unit (PMU) to assist MINALOC with the implementation of the program, with the local authorities taking the lead in subsequent programs.

The purpose of this study, therefore, is to evaluate and determine the extent to which poverty–environment considerations are being addressed in the implementation of EC Development Programme especially DPRPR in Kibungo Province. The outcome of the study and lessons learned will inform the recommendations to EC Rwanda Delegation and Brussels on how to mainstream environmental sustainability in the current programme as well as the subsequent development assistance (i.e., 10th EDF).

1.4 Objectives of the Study

1.4.1 Overall Objective

The overall objective of this research is to enhance the impact of the EC’s development assistance on poverty through increased attention to the role of the environment in the livelihoods of the rural poor in its country development strategies. This research seeks to provide to the EC and Rwanda recommendations to address poverty-environmental weaknesses in current Country Strategy Paper (CSP) and to improve environmental streamlining in EC development strategies through its six focus areas.

1.4.2 Specific Objectives of the Study

The specific objectives for this case study are to:

- 1) Identify economic, social, and policy opportunities/constraints to the integration of environment into the promotion, selection, and implementation of poverty-reduction projects funded by the European Community through the CDF.
- 2) Discuss the opportunities/constraints/interventions in the current political context of the decentralization and poverty-reduction strategies of the EC and the Government of Rwanda.
- 3) Make recommendations for interventions to mainstreaming environment into poverty-reduction projects funded by the European Community.

2.0 Methodology and Approaches

2.1 Site selection and description

2.1.1 Site selection

In order to identify the study area, it was necessary to establish criteria that will ensure objectivity. Thus, site selection of the study area was based on the following criteria:

- (i) Area with on-going or proposed EC projects;
- (ii) Diversity of environmental features:
 - (a) Environmental issues,
 - (b) Topography and environmental features; and
- (iii) Diversity of other features:
 - (a) Level of impoverishment;
 - (b) Proximity to major road;
 - (c) Level of production of cash crops.

2.1.2 Description of study area

2.1.2.1 Kibungo Province

The Province of Kibungo (Figure 1) is largely characterized by (i) semi-arid savanna vegetation;(ii) a climate with periods of prolonged drought with erratic and insufficient rain; and (iii) a hydric network composed of several lakes and the Akagera River.



Figure 1. Kibungo Province is located in southeast Rwanda and borders Tanzania to the east and Burundi to the south.

Kibungo province is experiencing over-grazing, desertification, soil erosion, and reduction of water availability and quality. There are many vulnerable wetlands and lakes throughout Kibungo, which are important part of the Akagera basin. In addition, Akagera National Park (ANP) partially extends into Kibungo. Prior to 1997, large portions of Kibungo were formerly within ANP, and have under the Resettlement Programme for settling returning refugees been settled. In 1997 the area of ANP was reduced to 1,081 km², a reduction to approximately one-third the original size of ANP. It was the 1993 'Arusha Accord' that had identified ANP as a potential area to resettle refugees as it was identified that it was necessary for returning Rwandan refugees would be resettled into open, unsettled areas of Rwanda. The genocide made the resettlement even more urgent. This creates a greater challenge of balancing the conservation and development in the area.

The EC funded DPRPR program will focus on the two provinces of Kigali-Ngali and Kibungo. Kibungo Province was chosen as a case study for this research because of the diversity of environmental issues facing the province.

2.1.2.2 Districts

Using the same criteria for the selection of Kibungo Province, the research team selected three districts within Kibungo Province as a focus for the study. The districts selected are Cyarubare, Rusumo, and Mirenge each of which have their unque characteristics as described in Table 2.

Table 2. Reasons for selecting Cyarubare, Rusumo, and Mirenge Districts

District	Reason for Selection
Cyarubare	Borders Akagera National Park Issues of drought
Rusumo	Presence of major trans-boundary road Many wetlands along border with Burundi Presence of large banana plantations Current land conflicts
Mirenge	Extensive lake and marshland habitats Pressure from returning refugees from Burundi

Within each district, three administrative sectors will be visited. Selection of sectors within each district was made with help of administrators at the district level; based on the same criteria listed above. The sectors selected are as shown in Table 3.

Table 3. List of sectors in each of the three chosen districts in Kibungo. The sectors in bold-italics were selected for study.

Cyarubare	Rusumo	Mirenge
Bisenga	Gahara	Gatare
Cyabajwa	Gashongora	Gituza
Gishanda	Gatore	Kabirizi
<i>Murama</i>	Kibara	Kagashi
Kabare II	<i>Kigarama</i>	Karembo
<i>Rwinkwavu</i>	Kigina	Kibare
Shyanda	<i>Kirehe</i>	Zaza
Ndego I	Mwaza	Kukabuye
<i>Ndego II</i>	<i>Nyamugali</i>	Kirambo
		<i>Mbuye</i>
		Mabuga
		Murwa
		Ngoma
		<i>Nyange</i>
		Nshiri
		Rubago
		Rukumberi
		<i>Ruyema</i>
		Sangaza
		Shori
		Shywa

2.2 Methods and Approaches

2.2.1 Methods

2.2.1.1 WWF-MPO methodology on Multi-level Poverty-Environment Analyses

Multi-level poverty-environment analyses was undertaken to gain a more detailed understanding of structural impediments that reinforce (or anticipated to reinforce) rural poverty and environmental degradation in the study area. Assessment of poverty-environment dynamics was done at the local level linking to meso and macro levels (Reed 2004).

2.2.1.2 FAO’s Handbook for the Socio-Economic and Gender Analysis Program (SEAGA)

The SEAGA Handbooks of the Food and Agriculture Organization (FAO) of the United Nations provides a framework for analyses at macro-meso-micro levels (FAO 2001a,b,c). It is people-centered with emphasis on understanding how development policies and programmes are likely to affect the economic activities and social relationships among different group of people in local communities. However, the focus is on the need to identify women’s and men’s needs and priorities in a participatory manner in order to promote equitable, efficient and sustainable development.

2.2.2 Approaches

2.2.2.1 Assessments and Review of Documents

At the local level, the consultancy team examined specific linkages between poverty and environment. They determined the impacts of environmental degradation in terms of household and community economic and social consequences with specific reference to impacts likely to arise with the implementation of EC supported activities in the area.

2.2.2.2 Questionnaires and Focused Group Interviews

The consultancy team conducted focus groups/interviews at all relevant levels: micro (community), meso (sector, district, and province), and national level. At the community level, the consultancy team conducted focus groups and used a questionnaire to guide the discussions. The focus groups consisted of approximately 20-30 people including men, women, and youth. The focus groups began at approximately 10:00 am. The first 30 minutes was used to make introductions, to explain the exercise, and to discuss why their responses are important. The next 15 minutes consisted of encouraging a general discussion before beginning the questionnaires. During this time period the people were getting comfortable with the team and comfortable as a group. Then questionnaires were used as a basis for discussion (Annex 3). One member of the team took notes concerning the responses. Total time of focus groups was about 2.5 hours.



Figure 2. Community focus group in Sector Ndego II, Cyarubare District.

Policy and institutional questions were asked to separate groups of men and women (the same group was broken into two groups toward the end of the session). The two groups were asked the same questions to see if men and women respond differently as

to how they interact with decision makers and if they feel their issues are being adequately taken into consideration.



Figure 3. Glenn and Christine facilitate a group of women in Ruyema Sector of Mirenge District.

Sector, district, province, and national level questionnaires were asked in an interview format to relevant government representatives or members of organizations or institutions. Methods also included review and analysis of relevant project documents, national laws, and national policies.

3.0 Results and Discussion

3.1 Local level

3.1.1 Key Environmental and Natural Resources and Uses

3.1.1.1 Key Environmental and Natural Resources

Kibungo Province in general, and more importantly the nine administrative sectors covered by this study, the following environment and natural resources were identified to be of critical importance to the local people. These are:

- Land;
- Forests;
- Water resources; and
- Subsoils.

3.1.1.2 Uses of Environmental and Natural Resources

Environment and natural resources form the resource base upon which the majority of the rural poor in Rwanda, who account for more than 90% of the population, depend on for their livelihood. As a consequence, environmental degradation would expose them to increased poverty and vulnerability to natural disasters especially land slides, floods and drought. In order to appreciate how communities use and relate to these natural resources, a brief analysis on this relationship is necessary.

(1) Land: Agricultural crop production and livestock rearing

Agriculture and livestock production is the mainstay activity of the rural people in Kibungo Province. Much of the agricultural activity is subsistence farming with very little or no fertilizer used. The main food crops planted are banana, beans, cassava, pineapple and rice. Increasingly wetlands are being used for rice production by associations and cooperatives. Much of the food crop produced is for domestic consumption with the surplus being sold as a source of income. In addition to food crops very few households have their land under cash crop such as coffee. Because of the poor agricultural practices, land productivity is generally low with increasing land degradation due to poor farming practices and soil erosion. In addition to agricultural production, the inhabitants of Cyarubare, Rusumo and Mirenge also keep livestock especially cattle and goats to supplement their income. Incidentally, the majority of them keep traditional livestock with very few of them practicing improved livestock production practices such as zero grazing. Because of the high number of livestock and the semi-arid, arid nature of the area, keeping of livestock has had negative impact on the environment especially due to overgrazing and soil erosion. The photo below shows goats kept in zero grazing enclosures by a farmer in sector of Nyange, Mirenge District.



Figure 4. Goat pasture in Cyarubare.

(2) Water Resources: Fishing and transportation in lakes

Kibungo province has a large share of wetlands and lakes in Rwanda. These wetlands and lakes, especially Lakes Ihema and Nasho (Cyarubare District) and Mugesera and Sake (Mirenge District) are essential for the livelihoods of the local inhabitants. For example, besides being the main water sources for domestic and other uses, they provide an important fishery resource for subsistence and commercial fishing. The people living around the lake fish using dugout canoes. The most common harvested species are *Tilapia*, *Orochromys*, and *Clarias*. Regulation of the fishery resource is done by cooperatives authorized by the respective local authorities and the relevant ministry. Unfortunately, the cooperatives are not all inclusive. For example, the local community living around Lake Ihema is marginalized as they lack appropriate fishing gear and cannot afford to buy the fish. All the fish caught is ferried to Kigali by the cooperative where it fetches more profit. Similarly, the ferry transport on Lake Mugesera has stopped operating thus affecting negatively the lives of the inhabitants, as they cannot transport their goods for trade.

(3) Forests: Construction and energy for cooking

The majority of Rwandans rely on land and forest resources for the construction of their houses. In Kibungo Province, especially in the districts along the borders of Tanzania and Burundi, resettlements for internally displaced people in the 1960s and for returning refugees after 1994 genocide, the exploitation of any existing forest resources has been massive and unregulated. Resettlements have given to increased pressure on forest resources. These include:

- use of poles and timber for construction and furniture, including for public utilities such as schools and hospitals;

- conversion of forest areas for human settlement and agricultural production; and
- fuelwood (firewood and charcoal) as a source of energy for domestic purposes and as sources of income.

(4) *Mines and Minerals: Exploitation of mines and quarries*

Mining is a limited economic activity in Kibungo Province. Mining is done in:

- *Cyarubare District:* cassitérite, sand, and gravel in Rwinkwavu;
- *Rusumo District:* wolfram in Nyarusange, gravel and quarry stone in Rwanteru, clay in Cyunuzi, Rwikubo and Kigabiro; and
- *Mirenge District:* Kaolin in Mbuye, coltan in Zaza, stones in Sholi and Karemba, sand and gravel in Zaza, Nshili and Rubago.

However, the exploitation of the mines and quarries are allowed only to accepted societies or cooperatives. It is the case of several SME that exploit cassitérite in Rwinkwavu and AMEKI COLOR that extract kaolin on a big scale kaolin in the former mines of REDEMI in the Sector of Mbuye (Mirenge District). These two activities in Rwinkwavu and in Mbuye employ some people in these localities with positive impact on the incomes of the local people. However, the negative impact arises due to displacement through granting of concessions over land to societies or cooperatives.

3.1.2 Poverty-environment linkages

In Kibungo Province, natural resources form the resource base upon which rural development occurs. Communities visited are very conscious of this and express it thus: *"the natural resources that constitute our natural environment are the only sources of means for us to fight against our poverty."* For example, in the three districts of Cyarubare, Rusumo and Mirenge, citizens practice subsistence agricultural production for their socioeconomic needs, although there are also few plantations for high value crops such as coffee as is the case in Nshili.

Thus, the interaction of the poverty-environment dynamic with the different actors in Kibungo Province can be schematized as follows:

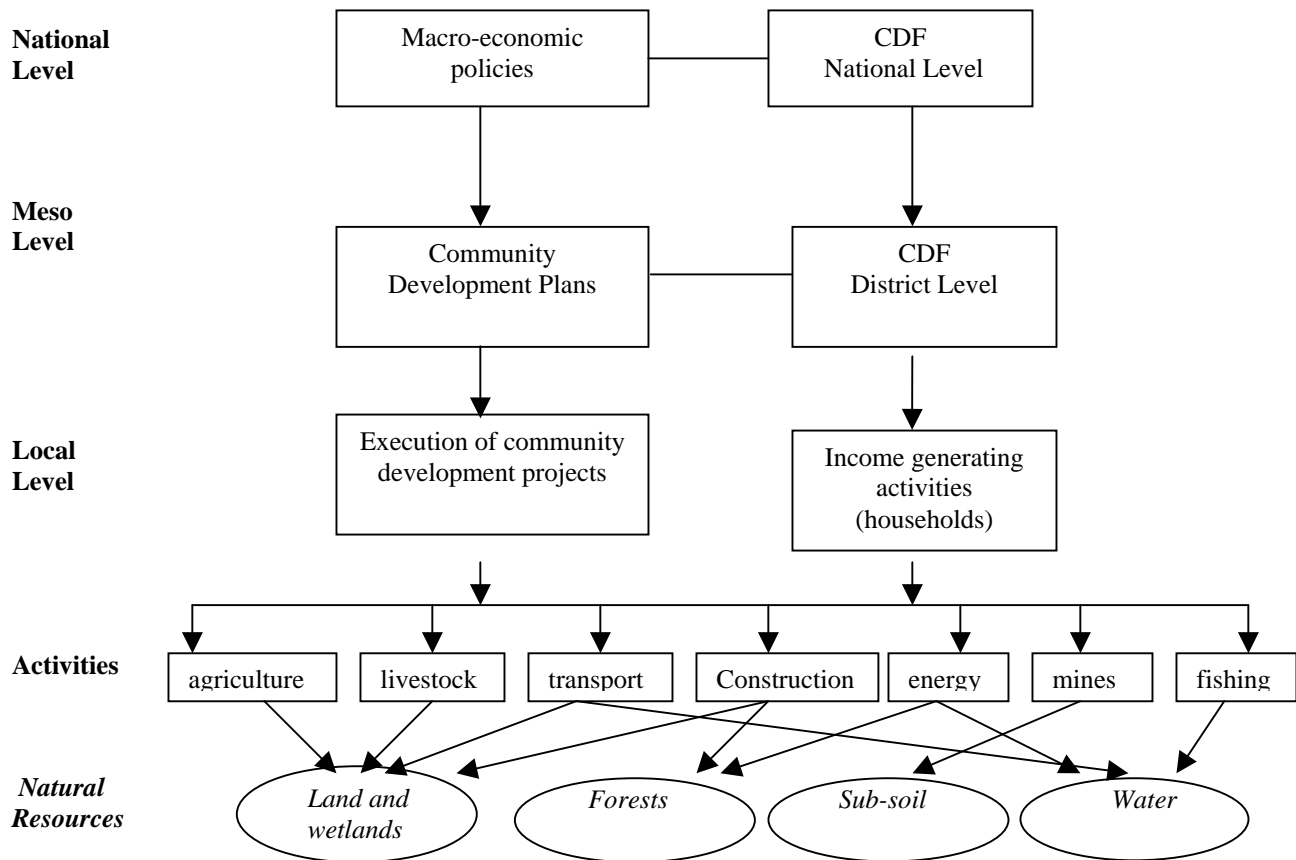


Figure 5. Diagram of poverty-environment interactions at three levels.

There is no doubt that if Rwanda hopes to reduce poverty among its people it must address the question of effective management of the limited environment and natural resources. This is premised on the fact that the majority of her people depend upon these resources for their livelihood. To illustrate this point the table below (Table 4) shows the quantitative data that reflect the state of relationship between poverty and environment through two main socioeconomic factors, namely, (i) population pressure; and (ii) strong dependence of the natural resources. These factors are generally interdependent and the demographic, economic, and social phenomena have some interactions with natural resources. A number of lessons arise from this situation: (a) the environmental issues are intimately and greatly bound to the socioeconomic reality of the life of poor families in farming communities; and (b) their means of subsistence comes from the primary exploitation of natural resources, especially hillsides and reclamation of wetlands and forest areas. Table 4 illustrates the poverty-environment relationships.

Table 4. Principal socio-economic characteristics of the poverty-environment dynamic.

	Cyarubare	Rusumo	Mirenge	KIBUNGO
1) Demographic pressure:				
Total population	72,892	157,338	144,944	702,248
Total land area (km ²)	406	535	391	2,977
Population density (people/km ²)	180	294	371	236
Annual population growth	Nd	Nd	Nd	4.6%
Percentage of people in cities or <i>imidugudus</i> (grouped housing)	95%	97%	96%	91.8%
2) Agricultural-Pastoral Pressure:				
Exploitable family plot (ha)	1	0.5	0.6	1
Proportion of population agriculturalists or pastoralists	98 %	95%	97%	Nd
Total area of wetlands (ha)	211	670	1,262	Nd
Number of heads of cattle	4,560	10,157	3,596	60,296
Number of goats	8,992	8,479	11,188	117,872
3) Pressure on forest resource :				
Area of woodlands (ha)	Nd	507	596	3,585
Percentage of surface area in woodlands	Nd	0.8%	1.5%	Nd
Homes constructed of tree poles (external walls)				85.5%
Utilization of fuelwood for cooking	99%	97%	95%	96%
4) Indicators of water access:				
Annual rainfall				900 mm
Percentage of population with access to tap water	Nd	32%	15%	28%
<i>Source : Compilation of data from Community Development Plans from the three districts and the Strategic Plan for the Province of Kibungo.</i>				

The impact of human pressure on the natural environment is, especially in this post-war and genocide period, catastrophic, resulting in scarcity and degradation of resources that are considered "the source of life." One can especially mention (i) the drastic reduction of household land parcels and the loss of the fertility of arable land; (ii) the quasi-disappearance of forest resources and the lack of reforestation; and (iii) increased drought, drainage of lakes and non-managed wetlands, and the beginning of a desertification process in some semi-arid zones of this province.

Unless the situation is addressed and environmental sustainability of these areas through appropriate policies, programmes and projects, in the long term, the vulnerable communities are likely to suffer far-reaching consequences as a result of environmental degradation. Some of the consequences may relate to (i) food insecurity due to poor soils; (ii) vulnerability to natural disasters especially landslides, floods and drought; and (iii) social insecurity due to conflicts over the limited resources among others.

Integration of poverty-environment aspects in the communal projects of development and other local actions is of critical importance and priority if the communities are to continue eking their livelihood presently and in the future. It is evident that the EC Community Support Programme which is based on the 6 national priorities as outlined in the PRSP 1, which does not adequately address poverty environment dynamics, fails to mainstream poverty –environment considerations. With Rwanda striving to achieve sustainable development which is founded on sound principles especially economic viability, ecologically rational and socially acceptable, it is imperative that the EC Programme Support incorporates these values in the implementation of DPRPR.

3.1.3 Impact Manifestations

3.1.3.1 Environmental impacts

Human activities to meet their social and economic demands are causing negative impacts on the environment and natural resources in the three districts of Cyarubare, Rusumo and Mirenge the focus of this study. This is exacerbated by the increasing population (due to resettlement and population growth) pressure the limited natural resources. This is best illustrated by the table below (Table 5).

Table 5. Indicators of environmental impacts.

Natural resources	Type of activity	Indicators of impact
1. Land and Wetlands	<ul style="list-style-type: none"> – agriculture – livestock – home construction – construction 	<ul style="list-style-type: none"> – loss of biological diversity – drying up of wetlands – erosion – land degradation – loss of fertility
2. Water	<ul style="list-style-type: none"> – capture of potable water – fishing – transport of goods and people on lakes 	<ul style="list-style-type: none"> – erosion of lake shores – depletion of lake resources – water pollution
3. Forests	<ul style="list-style-type: none"> – home construction – fuelwood – tourism (park) 	<ul style="list-style-type: none"> – massive deforestation and effects of drought – depletion of biological diversity
4 .Subsoils	<ul style="list-style-type: none"> – exploitation of mines and quarries 	<ul style="list-style-type: none"> – erosion – soil degradation

(1) *The reduction and deterioration of agro-pastoral land:* The fluctuation in rainfall patterns, poor subsistence agricultural production systems, reduction in parcel size due to increasing population pressure, as well as overgrazing are the major factors that have contributed to the degradation of agro-pastoral lands. Agro-pastoral land degradation was clearly evident on a hill in Rusumo District (Cell Rowed I - Nyamugali sector): one area was currently in full regeneration of tall herbaceous plants and

seedlings of eucalyptus on 40 ha and protected from human or livestock presence. It was completely denuded after one year when livestock were allowed to overgraze it. The lesson drawn is that raising of livestock in enclosures constitutes one of the major solutions to environmental problems related to overgrazing.



Figure 6. Protected pasture (left) and unprotected pasture (right).

(2) *Massive deforestation:* Only about 1% of the surface area of the districts is covered with woodlots. The galley forests which previously covered the valleys in Kibungo Province have practically disappeared due to conversion of forest lands for human settlement and agriculture. Charcoal burning has exacerbated the problem (Kibungo Province 2004). As a consequence, Kibungo Province is most affected by deforestation in comparison with other provinces of the country. Indeed, national resettlement programs were especially concentrated in this province: 91.8% of the population in Kibungo Province lives in grouped settlements, which is much higher than the national average percentage of 18.8%. The reclamation of the forests for human settlement, agricultural land and construction materials accounts for the devastation of forestry resources in the province. The almost disappearance of the galley forests "udushyamba tw'imihaga n'imikenke" of the east of the country (present provinces of Kibungo and Umutara) that started at the time of the 1970s and 1980s reached its highest peak of deforestation of about 83% in 2003. Table 6 below illustrates the trend of deforestation over the years.

Table 6. Rate of deforestation of gallery forests in Kibungo and Umutara Provinces (outside of Akagera National Park).

Year	1970	1980	1990	1996	1999	2000	2003
Area (ha)	150.000	90.000	55.000	30.000	25.000	25.000	25.000
Annual Variation	-	- 40%	- 39%	- 45%	- 17%	0%	0%
Cumulative variation	-	- 40%	- 63%	- 80%	- 83%	- 83%	- 83%

Source : Information provided by the Directorate of Forestry

(3) *Insufficient rain and reclamation of wetlands:* Long periods of drought are observed in this part of the country occurring over the past 5 years. Insufficient rain due

to deforestation and reclamation of wetlands (Cyohoha Nord completely, Matongo in progress) have worsened the situation in this area. This is further exacerbated by year-round, intensive agriculture and overgrazing, which have accelerated environmental degradation. Table 7 shows the rainfall patterns between 1970 -1993. No records are available between 1994 to date.

Table 7. *Measured precipitation at the Rwinkwavu weather station over time.*

Year	1971-1980	1981-1990	1991	1992	1993
Average (mm)	74.8	72	61	41	38
Variation (%)	-	3.7	15.3	32.8	7.3

Source : Rwandan Meteorological Service

3.1.3.2 Economic impacts

The majority of the Rwandan population live in rural areas and practice subsistence agriculture. Because of the increased pressure on the environment and natural resources due to many factors, including resettlement and population growth, there is considerable evidence of environmental degradation. Poverty levels are likely to remain high in these areas as a consequence. The economic impact of the deterioration of the environment and the ever-increasing deficit of natural resources was well articulated by a group of elders in Rwinkwavu Sector as:

“This formerly prosperous region attracted us from several surrounding regions about thirty years ago. Now, the only means we have is to emigrate from this former banana growing region: the natural resources that helped us live have dried up (land and minerals, forests, rainwater, etc..) and we run the risk to find ourselves in an urbanized setting without the possibility to exercise some agro-pastoral activities as in the past.”

This is further elaborated below.

(1) *Land:* More than 95% of the population in this province live from agricultural activity and rearing of livestock on parcels of land that do not exceed 1 ha. This is because the area is densely populated, averaging 236 people per km². The older people of the Sector Nyamugali (Rusumo District) explain the present small size of agricultural parcels while comparing to the past: the domestic agricultural exploitation was about 3 ha during the 1970s, “the extent of the parcel depended on your ability to work on the land”; it was reduced to about 2 ha in the beginning of the 1980s “many sold a piece of their parcels to newcomers”; it was further reduced to 1 ha since 1997 “*haje isaranganya*”, which is Kinyarwanda for the forced partitioning and sharing of land to allow for resettlement of returning refugees. This is best captured in the Strategic Plan of the Province of Kibungo which highlights the adaptive strategies undertaken by the local population. In the Plan it is stated that *in 1990, about 69% of the available land was under cultivation as compared to 84% in 2000*. As a consequence less and less land is now available for pasture and for provision of ecosystem services such as forests and wetlands. Bearing in mind that this area receives less rain, it then follows

that increased agricultural production in place of pasture, forests and wetlands has increased the rate of environmental degradation with negative impacts on the incomes of the rural poor. In order to diversify their incomes, the inhabitants have had to shift to other activities. For example, rearing of goats has become an important activity among the people living in the Sector of Murama of Cyarubare District to supplement the meager income generated from agricultural production. In the Sector of Kirehe in Rusumo District, some people are adopting zero grazing (1 to 2 heads of cattle) as additional source of income. Thus, it can be concluded that cultivation of small parcels, increased soil erosion and destruction of ecosystems that provide ecosystem services especially forests and wetlands has had negative impacts the livelihoods of the inhabitants of Kibungo Province and the national economy at large.

(2) *Forests:* Deforestation has also impacted negatively the livelihoods of the people of Kibungo Province as it has led to scarcity and unavailability of forest-related construction materials and fuelwood. For example, about 99% of the people in Cyarubare District depend on fuelwood as their source energy for cooking. Due to the unavailability of this resource within close proximity, the inhabitants of the Murama Sector now walk more than 10 kilometers to look for firewood for domestic use. On the average, the price for a bundle of firewood (about ten pieces of cleft wood) costs about 200 FRw (0.35 USD). This is equivalent to one day's wage. The collapse of the brick making industry is also a consequence of the unavailability of fuelwood to use in the kilns. This has adversely affected the income of the people living especially in the Rusumo and Mirenge Districts, notwithstanding its implication on the construction industry at the national level.

(3) *Water:* The frequent prolonged periods of drought in this region have a very negative impact on agricultural activity and the satisfaction of basic water needs of the people. Only 15% of the population of Mirenge District has access to tap water, generally from public taps (District of Mirenge 2004). The socioeconomic costs associated with this are enormous. These manifest themselves in the form of (a) much important time dedicated to the search of water instead of cultivating the fields (three hours for only one jerrican of water in several sectors of Rusumo District); (b) absenteeism of children in school; (c) price to purchase one 25-liter jerrican of water (50 to 100 FRw or 0.08 to 0.13 USD) in several small centers of the districts of Rusumo and Mirenge); and (d) increased water-borne diseases and associated health costs to the household and the country at large.

3.1.3.3 Social impacts

The small size of parcels of land available for settlement as well as for agricultural production prompted the GoR to introduce *imidugudu* resettlement system. *Imidugudu* type of settlement enables communities to settle in one place and leave much of the land for communal use. The houses are constructed together and land plots are given to each family in communal agricultural lands that many times exist separate from the houses. It enhances equitable distribution of basic infrastructures such as schools, hospitals, markets, drinking water, etc. Furthermore, due to the insecurity following the

war and genocide, the regrouping of communities into *imidugudu* improves security and protection of vulnerable groups.

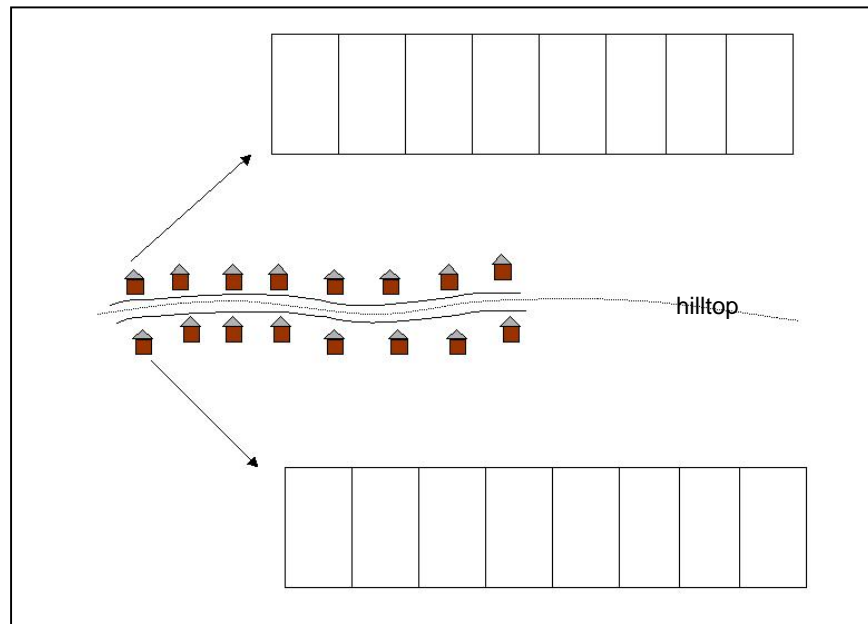


Figure 7. Diagram of an *imidugudu* found in Murama Sector of Cyarubare District

But the resettlement of the population in villages and *imidugudu* has had evident impact on the environment. These include (i) uncontrolled cutting of trees for construction of villages with far reaching consequences on the resources and soaring demand for charcoal and other uses; and (ii) remoteness of the communal agricultural lands has led to increased production costs due to man hours covered before reaching the fields, theft of crops and destruction of crops by animals.

More specifically, the following social impacts were observed during the study.

(1) *Land degradation:* The main social impacts relate to increased pressure on land manifesting itself in increased poverty levels and the deterioration of the social wellbeing of households and communities. These changes have occurred in various stages. The stages are (i) reclamation of virgin and fertile lands by the initial occupants; (ii) successive migrations of the populations from the overcrowded regions (Gisenyi, Ruhengeri, Butare mainly) in the years 1975-1980 increased the population now demanding a share of the land; and (iii) resettlement of refugees from neighboring countries following the war and genocide of 1994. Their return to Rwanda for the first wave in 1994 and in 1996 for the second wave caused a social phenomenon of fundamental importance to the environment – the sharing of land and the construction of many *imidugudu*.

The land not only has deteriorated following this pressure, but also it has been progressively sub-divided and reduced in size following the increase of the population. According to the census of 2002, the density of the population in the three districts of

Cyarubare, Rusumo and Mirenge was 165, 247 and 243 people per km² and with population growth of about 4.6% in Kibungo Province (National Census Service 2002). This portends serious problems. The small area of arable land in relation to the population has resulted in a reduction of the parcel size per household now averaging 1 ha as compared to an average of previous 3 ha per household in 1990. This has contributed to further impoverishment of the rural poor and vulnerable groups.

(2) *Deforestation*: Deforestation as a result of forest conversions for resettlement and unsustainable use of forest resources account for the environmental degradation experienced in the area. This has led to scarcity of resources with far-reaching consequences on livelihoods. Some of the social impacts manifest themselves in the form of (i) scarce and unaffordable fuelwood; (ii) loss of income from forest products; and (iii) increased amount of time dedicated to gathering twigs or other plants as substitution for firewood, at the expense of agricultural and other income activities. The marginalize groups, especially women and children, are the most affected, depriving them an opportunity to engage in incoming generating activities and regular attendance at school, respectively. Table 8 shows household division of labor.

Table 8. Household division of labor. Activities in italics are occasionally done.

Men	Women	Children	
		Boys	Girls
Construction	Cultivation	Livestock grazing	Cooking
Livestock grazing	Cooking	Collecting water	Cleaning
<i>Cultivation</i>	Cleaning	Gathering firewood	Collecting water
	Collecting water		Gathering firewood
	Gathering firewood		

To cope up with the issue of scarcity of fuelwood, a number of households are reducing fuelwood consumption by (i) adopting the use of the "improved stoves" that consume distinctly less quantity of wood (Figure 8); and (ii) use various plants or remnants of plants such as the dry banana leaves and papyrus from the wetlands.



Figure 8. Home-made improved cooking stove in Nyamugali Sector in Rusumo District.

(3) *Water, wetlands, and lakes:* The problem of water is acute in this region because of the insufficient rainfall, frequent droughts and degradation and reclamation of wetlands and other water sources. The local communities interviewed view the problem as worsening in recent years due to massive deforestation. These effects have put a big strain on the local people as they have to adapt to harsh conditions of the area. Some of the social impacts may be seen in (i) high cost of clean drinkable water. For example, on average a 25-liter jerrican costs between 50 – 100 FRw; (ii) women and children cover long distances by foot, in excess of 10 km, in search of clean water. This leaves them with little time to attend to other chores and school, respectively; and (iii) water-borne related diseases associated with degraded water sources with high health costs to the family and the country at large. To cope up with the situation the communities have developed various strategies. The most common is harvesting and storage of rainwater. For example, in Kirehe a young man demonstrated how a constructed a reservoir that holds up to 2 m³ of water. In addition, in order to assist women and children, some men now use bicycles (if available) to carry jerricans of water.



Figure 9. Home-made water reservoir in Kirehe Sector in Rusumo District.

In addition to water scarcity, degradation of water bodies especially wetlands and lakes have contributed to loss of biodiversity and their habitats. This has increased human-wildlife conflicts. For example, some wetlands and lakes in Matongo, Mirenge District has caused the animals that use these habitats to be displaced, and as a consequence animals such as wild pigs invade and destroy crops. Such stray animals besides causing crop destruction may also cause human injury or even death. Furthermore, loss of wetlands and lakes has also impacted negatively the people of sector Ndego II by high prices for fish products. Fish that is caught in Lake Ihema is so expensive that the merchants do not sell the fish to the local communities; they prefer to sell them in Kigali where they fetch higher prices.

3.1.4 Natural Resources Management and Governance

3.1.4.1 Access and control of natural resources

The ownership of natural resources in Rwanda is vested in the state. It is the state that permits the use and control of such resources by individuals or groups. With the exception of land, environmental resources such as wetlands and lakes are held in common by the state. Use of the resource is allocated according to locally defined practices. Generally, local authorities and community associations and/or cooperatives control the use and management of natural resources at the local level. For example, management of a lake fishery is granted to a fishing association. Only members of the association will be allowed to fish in a given lake subject to fulfilling requirements relating to guidelines and regulations on net mesh size, for example. Regarding wetlands, individuals or groups may seek permission from local government to develop a piece of wetland into rice paddies or farm plots. Such permission is often granted by local government without due consideration of environmental aspects.

Under this arrangement, it is largely men who make the decisions. Yet, women and children are the main users of natural resources but are not consulted or involved in the decision-making processes. However, this was variable among the different sectors visited depending on the strength of the local women's representative and on the acceptance of women's issues by the local authorities. Through focus group discussions with women revealed a different set of priorities from the mixed groups in that they emphasized the environmental issues of a domestic concern alongside more general livelihood constraints. Table 9 below illustrates control of natural resources by different groups.

Table 9. Household control of resources. Resources in italics are occasionally controlled.

Men	Women	Children	
		Boys	Girls
Land	<i>Crops</i>		
Trees	-	-	-
Livestock			
Cash Crops	-	-	-
Money			

3.1.4.2 Community Organizations and Institutions

The basic government administrative subdivision is the cell (approximately 100 households). This group is organized into a cumulative grouping called a sector. Many activities focused on the exploitation of natural resources are organized through community-based associations or cooperatives at the cell or sector level. For example:

- *Wetlands* - the resource belongs to the state, and permission to use the wetlands is only given to local associations, not to individuals. These associations may be informal or formal.

- *Mining and fisheries* - As with wetlands permission to exploit may only be obtained by an association. Unlike wetlands the associations must be legal entities.
- *Afforestation* - In many places, groups (especially youth) are formed around tree nursery projects. These trees are ultimately destined for planting on public lands, private plots or public land allocated to the association to manage.

It is a policy at the national and local level to encourage the formation of community groups in order that they may more efficiently access technical support and finances.

3.1.4.3 Natural Resource Conflict Management

(1) *Sources of conflict:* There are a number of conflicts that arise as a result of control and use of natural resources. Among those highlighted by the various stakeholders during the interviews include:

- *Resettlement:* The redistribution of land after the war and genocide of 1994 was also a source of inter-community conflict due to the fact that people did not or could not resettle on their former property. Also, the “equitable distribution” of land among the entire population provoked some unhappiness among the former occupants who had vast properties (more than 1 ha). Up to now, the conflict is underlying and risks manifesting someday, even if the populations tend to ignore it now.
- *Land subdivision:* The land is the main resource of subsistence of the populations. Parcel size continuously reduces as parents continue to parcel out their land among their children. Until when will this system be possible? This agonizing question summarizes the problems over land resources and explains the origin of conflicts within families over the division of land: between the parents and the children on one hand, and between the children themselves on the other hand.
- *Control of resources:* Men have control over family land. Conflict arises when the man desires to sell the land, sometimes resulting in serious arguments between spouses when the woman does not wish to sell the property. In legal marriages, a wife has an equal right to the land owned by her husband. However, because many couples have not gone through official marriages with the state, it is mainly the women and children who endure the negative effects of this phenomenon in poor communities in Rwanda. Some quarrels are borne from the lack of property rights and/or access to income generated from the sale of a domestic parcel of land.
- *Family/marriage disputes:* It was common in this area for men to marry more than one wife when they move to neighboring regions looking for resources or work. This was the source of conflicts within families; specifically among women and/or their children. In addition, it is not uncommon for young girls (less than 16 years old) to be married to older men, or also married women who are coveted again by other men in the absence of their husbands. This kind of conflict is very frequent in the Kigarama Sector in the District of Rusumo, where one also

notices a strong emigration of men to neighboring Tanzania. The division of labor, in the sector of Mbuye (proximity of Burundi) for example, is not equitable and women cultivate the land in a large proportion to men. In the same sector of Mbuye, the rate of polygamy was higher than in other places visited. Some of these problems are indirectly due to consequences of the genocide because of the existence of many widows.

- *Multiple use conflicts:* Conflict exists between agriculturalists and pastoralists who allow livestock to graze close to or within agricultural fields.
- *Encroachment:* Illegal harvesting of trees in public woodlots (public property of the district).
- *Access to water and other resources:* The lack of drinking water remains one of the major problems in the three districts and the efforts of finding water sometimes generates social conflicts. The rush and fights that occur in the long waiting lines of public water sources sometimes result in physical conflict. For example, a pregnant woman received a blow that led to an abortion in the Sector of Kirehe in the District of Rusumo.

(2) *Mechanisms for conflict management:* At every cellule level there are elected committees that have the authority to reconcile conflicts among individuals before the matter is taken to the jurisdiction of the district. These committees aim to reduce the caseloads that are taken before the courts. The different levels (cells and sectors) have entities that have been put in place to mediate conflict within communities. These committees (men & women) are chosen by the population and charged with mediating minor conflicts (division of land, livestock and pets that destroy a neighbor's crops, men who sell their property without the agreement of their wives, men who abandon their homes, parents who do not send their children to school, and petty thefts). Thus, these committees handle the disputes within their cells or sectors. Traditionally in Rwandan culture when there was litigation between the members of a community, the business was first decided on by the older community members who gave their advice and sometimes even levied penalties to punish the guilty parties. These reconciliation committees at the differential levels have a very important advisory role in mediating conflict that doesn't require formal legal training.

Table 10. Social aspects linked to natural resources.

Natural Resource	Indicator of Impact	Social Impacts	Social Conflicts	Strategies of Adaptation
Land	Division of parcels into extremely small sizes and land degradation	<ul style="list-style-type: none"> – Increasing poverty and reduction of social well-being 	<ul style="list-style-type: none"> – problems of inheritance – problems of division of land – problems of redistribution of land – sell of land without spousal approval – conflict between agriculturalists and pastoralists 	<ul style="list-style-type: none"> – emigration to other areas or neighboring countries – utilization of vegetative wastes as fertilize the land – guarding of goats within enclosures
Forests	Massive deforestation and degradation of woodlots	<ul style="list-style-type: none"> – great need for firewood – great need for construction materials 	<ul style="list-style-type: none"> – thieves, or poachers of community forests 	<ul style="list-style-type: none"> – use of improved cooking stoves – utilization of vegetable wastes (papyrus, etc..) – board planks in lieu of tree trunks for the construction of homes

Water	Endemic drought or low water flows from water sources	<ul style="list-style-type: none"> – Elevated cost of water – Important amounts of time spent in search of water (long distances....) – Diseases linked to unclean drinking water 	<ul style="list-style-type: none"> – Fights over public sources of tap water 	<ul style="list-style-type: none"> – capture of rainwater from roofs
Wetlands	Degradation of cultivated wetlands	<ul style="list-style-type: none"> – predatory animals in the lakes in the process of succession to wetlands – difficult access to agriculture in non-managed, or converted wetlands 	<ul style="list-style-type: none"> – discontent among populations without access to agriculture in wetlands 	

3.1.5 EC Supported Interventions/Activities

3.1.5.1 Proposed Activities

Under the EC 9th EDF support to the GoR, there are four focal areas. These are:

- Rural Development: 62 million Euro (50% of Envelope A Budget);
- Macro support: 50 million Euro (40% of Envelope A budget);
- Good Governance/Institutional support: 12 million Euro (10% of Envelope A budget); and
- Additional supplementary support: 62 million Euro (Envelope B).

The following interventions/activities are targeted to be realized with the EC support:

- (i) Modernization of the agricultural sector through increased fertilizer use, dissemination of improved seed and provision of credit;
- (ii) Infrastructure development especially the road network;
- (iii) Macro-economic reforms; and
- (iv) Good Governance/institutional support.

3.1.5.2 Impacts that may occur at the local level

(1) Modernization of Agricultural Sector

- *Increased agricultural production for export and increased food insecurity:* Promotion of cash crops over food crops raises a concern over the increased vulnerability of households to food insecurity. This is an area that is facing frequent droughts. As efforts are put in place to increase agricultural production especially coffee, it is imperative that due consideration be made to ensure corresponding increased production of indigenous food crops to increase food security in the area.
- *Increased environmental degradation and environmental insecurity:* Since emphasis is being placed on increased agricultural production through increased fertilizer use, there is likelihood that both groundwater and surface water will be polluted by agricultural runoff. In addition to fertilizers other sources of pollution may arise from the use of insecticides and herbicides especially in coffee production. This will lead to degradation of river and lake ecosystems creating or exacerbating health problems. The poor are often the first people to suffer the ill effects of pollution because they abstract their water from such water systems especially rivers and lakes. In view of this, the challenge is how to manage agricultural and industrial pollution likely to arise as a result of the investment in agro-industry production.
- *Increased environment/natural resource-related conflict:* Environmental conflict which is already an issue at the local level especially between pastoralists versus farmers, wetland use etc is likely to be increased. The intensification of use of the area for increased agricultural production unless planned through a participatory framework involving all the interested and affected parties may increase resource use conflicts. It is

important that efforts to define appropriate management regimes are supported. Also, it is necessary to establish and support dialogue and management rules between different resource users.

- *Exposure of the rural poor to environmental disasters:* Resource mismanagement and environmental degradation which is likely to occur with these efforts directed towards intensification of agricultural production can exacerbate the frequency and impact of droughts, floods and other natural hazards. With deliberate efforts being made to reclaim wetlands for increased agricultural production, this is likely to increase the vulnerability of the rural poor in Kibungo Province to environmental disasters (“shocks”) as well as to more gradual processes of environmental degradation (“stresses”) as the area is ecologically fragile. Natural disasters are a risk factor, which affect the pace of economic growth and destroy the assets of the poorest segments of the population in affected areas, reducing them to a state of dependency. Natural disasters seriously affect the living conditions of affected populations, and constitute an obstacle to a definite break with certain degrees and patterns of poverty. Therefore, measures aimed at preventing occurrence of such environmental disasters are of the utmost importance.

(2) Infrastructure Development

- *Road Network Construction:* Part of the support is to be directed to infrastructure development especially the road network. Construction of roads if not planned well may contribute to serious environmental degradation especially as a result of soil erosion. Because the current planning has not incorporated environmental considerations, there is a likelihood that the infrastructure construction may generate some environmental impacts which need to be mitigated.

(3) Macro-economic reforms

- *Lack of integration of poverty-environment issues in macroeconomic reforms:* Since the CSP does not have a strong emphasis on the integration of poverty-environment in macro-economic reforms this is likely to undermine the efforts directed at mainstreaming environment in Poverty Reduction Strategy (PRS) and development planning processes. For example, there is lack of poverty-environment indicators to tracking environmental performance upon implementation of the proposed macroeconomic reforms. Furthermore, there is no linkage established between the existing efforts such as those associated with livelihood surveys and poverty-environment dynamics and yet natural resources are the primary source of livelihood of the people of Kibungo Province.

- *Incentives:* Current macro-economic reforms are fundamentally built upon premises of economic growth. Therefore, such reforms do not adequately address environmental issues. For example, economic incentives being set to attract domestic and foreign direct investment are generally skewed against environmental sustainability as they do not make special emphasis on the question of access to environmentally

sound and locally appropriate technology. It is through such qualification as to the type of technologies that the agro-industry will be able to rid itself of obsolete technologies that pollute the environment.

(4) Good Governance and Institutional Support

- *Improving Environmental Governance:* To improve environmental governance in Rwanda, it is imperative that poverty-environment issues need to be integrated into development planning and resource allocation processes. This is necessary in order to forge a broad-based and more coordinated response to poverty-environment challenges, to achieve synergy between diverse interventions across many sectors and levels of action and to ensure that adequate resources are being allocated and effectively targeted.
- *Enhanced District-Level Environmental Planning:* With the decentralization and devolution in Rwanda, planning and implementation is to be done at provincial, district and local levels. Decentralization and local empowerment is not a guarantee for environmental stewardship. While greater local government control may make decision-making more responsive and accountable, this is by no means guaranteed. Local governments can also manage local resources and their development priorities may contribute to environmental degradation. In addition, there is weak environmental management capacity.
- *Inclusion of vulnerable groups especially women and youth:* It is generally assumed that the local community institutions are democratic and all inclusive. The study established that women and youth are still generally marginalized in the decision-making processes, despite efforts for inclusion. Thus, due to the social constraints at the local level it is unlikely that they will be able to effectively participate in identification of priorities and their implementation simply because development assistance has been decentralized to the local level.

3.2 Meso level (Sector>District>Province>National)

3.2.1 Decentralization

3.2.1.1 Conceptual Framework

Decentralization (MINALOC 2001) involves two processes, de-concentration and devolution. De-concentration is the transfer of administration and organization away from central government and into local government units. Devolution is the development of real decision-making and legal power to local government units i.e. to be able to pass by laws about local issues. A significant challenge to effective decentralization is the building of capacity at local government levels (district and below). By capacity building, we mean the development of appropriate structures (organizations) and processes (institutions) for implementation of plans and monitoring of progress as well as the development of human resources (technical capability) to carry out the work

competently. Environmental management is thus a responsibility that needs to be integrated into the decentralized network of government.

3.2.1.2 Organizational Framework and Governance

- Organizational framework:** The general structural provision within the decentralized framework of government for environmental management is well conceived in a theoretical sense at all levels. The province government has an environmental officer responsible for the coordination and management of province level initiatives. At the District, Sector and Cellule levels persons are identified with specific mandates to look after local level issues to do with the environment (Figure 3).

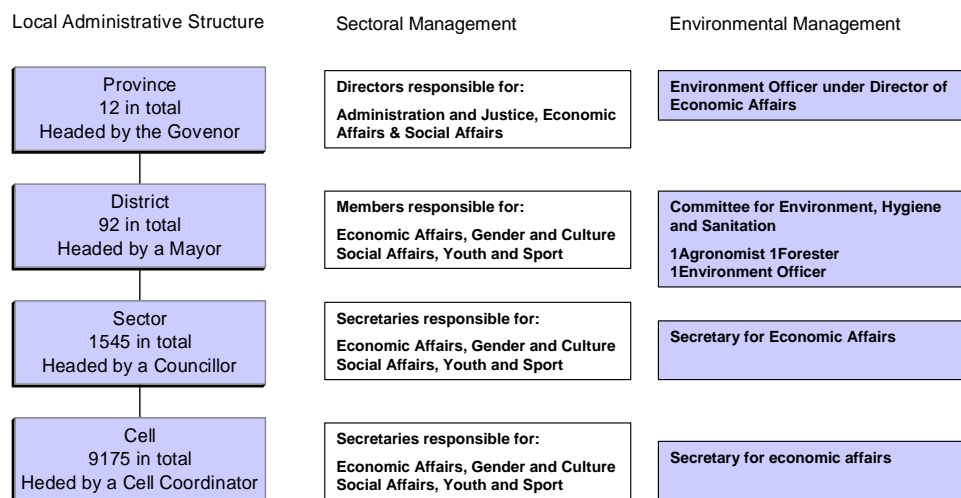


Figure 10. Local administration structure and management.

Although it is expected that every district and province will establish an Environment, Sanitation and Hygiene Committee to address such issues, it was not possible to determine the efficacy of such committee as some of the respondents suggested that environmental issues were being dealt generally. Nonetheless, in one of the districts visited, capacity building for such committee had not been done and therefore even if established would not have the capacity to address effectively the emerging environmental issues.

At the sector and cell levels, there are executive committees that reflect the district level structure and organization. An important management issue is that sector (apart from the executive secretary) and cell leaders do not receive a salary for the work that they do. At the district level, the Community Development Committee's (CDC) role is to use the needs articulated by the sector and cell CDCs to develop the district or community development plan, coordinate the implementation of sector level plans and monitor the implementation of projects by the community and to monitor and evaluate the use of development funds.

At the cell level the CDC is responsible for defining the needs of the local population and prioritizing them. In addition, they are responsible for mobilizing local people in the development of the cell and work on other information and training activities. Importantly, they are responsible for overseeing the use of the cell funds (*Ubudehe*) and report on project implementation to the sector level committee.

- *Mainstreaming of environment:* Environmental policy within the local government administrative structure is subsumed under the banner of 'economic affairs'. As such executive decisions regarding the enforcement and management of environmental regulations at each level are left up to economic affairs personnel with technical advice largely from non-environmental specialists such as agronomists and foresters. The table below sets out the scaling for different posts with responsibilities towards the environment at district and province level.

- *Technical strength and capacity.* In general at district and province levels, insufficient human resources were available to enforce environmental regulations or for the implementation of environmental projects and programs. At the province and district levels there was little human capacity to ensure the strategic management of environmental issues. It was noted that as well as insufficient scaling of personnel there was an uneven deployment of human personnel resources. Districts relied on sector and cellule administrations to implement environmental legislation, such as that of controlling indiscriminate use of trees or agricultural conversion of wetlands. It was further noted that technical advice at the local level on agricultural, forestry and environmental matters was principally obtained from within the decentralized government structure i.e. district agriculture officers. In the case of coffee OCIR-Café was the main source of both advice and agricultural inputs.

Table 11. *Environmental human resources at district and province levels in Kibungo.*

Post	Administrative Level/Location	Theoretical scaling	Actual Personnel
District			
District Agronomist	Cyarubare	1	0.3*
	Rusumo	1	1
	Mirenge	1	2
District Forester	Cyarubare	1	0.3*
	Rusumo	1	1
	Mirenge	1	1
Province			
Province Environment Officer	Kibungo	1	1
Police Forestry Officers	Kibungo	3	3

*Shared among 3 districts

Given the low number of available technicians, community access to technical information is poor. This said technicians do their best to liaise with groups and association representatives in the hope that their information and advice can then be

further distributed to association members. Clearly there are inadequate human resources to really mainstream environmental issues into wider development practice in the local government network.

Box 1. Strengthening of provincial and district capacities to handle environmental matters.

It is worthy noting that there are proposals for each district to have an environment officer as part of the structure of the Rwanda Environment Management Authority (REMA). This would obviously significantly increase the capacity to mainstream environment in development. Although the terms of reference for the district environment officers have not yet been developed, it is envisaged that they will take the lead role in monitoring environmental change; strengthen mainstreaming of environment in district plans, programmes and projects; undertake public education and awareness; and environmental law enforcement at the district level.

- *Role of Non-State Actors, especially associations/cooperatives and NGOs:*

(1) *Role of Associations and Cooperatives:* It was noted that in all sectors associations and cooperatives formed an important contact point for individuals. However the extent to which associations were operational was not investigated. A report on farmer associations in Rwanda (Bingen and Munyankusi 2002) showed that across the country support to farmer associations is not evenly distributed across or within provinces and that they rely on non-governmental organization (NGO) programs and donor projects for support. However associations did look to the district agronomists to answer technical questions and to resolve conflicts. However the agronomists were unable to help with accessing inputs or with market access and credit.

(2) *Role of NGOs:* Across all districts, a number of non-government organizations were seen to be operating. Local communities were positive about the impacts of such projects. It was clear from the community responses that although the NGO interventions were welcome they were not enough to meet the real needs of the local population. Local government at all levels also welcomed the interventions of NGO as they brought invaluable support in bringing the needs of the population in line with the objectives in the district or community development plans. The GTZ decentralization support project in Kibungo provided specific support in the development of Community Development Plans throughout Kibungo Province. In addition, NGOs in general brought valuable technical and managerial expertise in community project management to complement that of the local government. The following table represents the NGOs that the surveyed local communities listed as operating in their sectors. It is not a definitive list of NGO present in the districts.

Table 12. NGOs listed by local communities as operating in their sectors.

District	NGO	Activity
Cyarubare	Lutheran World Federation	Water supply and tree nurseries
	World Food Program	Food Security,
	Project pour la Promotion Petit et Moyene Enterprise Rurale	Artesian handicrafts, Rural Housing
	International Rescue Committee	
Rusumo	Association Rwandaise du Bien Etre Familial	Family Planning
	Lutheran World Federation/	Water supply and tree nurseries
	World Food Program	Food Security, food for work
Mirenge	ACCORD	Agricultural projects and training for women
	Caritas	Food Security
	Urugero	Micro finance, savings and credit

- *Participatory planning and decision-making:* Relations between all levels of local government were observed in general to be very positive. The system of participatory development planning involving local communities to elaborate their needs and combing these priorities in to the district development plans worked. Across all communities, local people felt that the authorities listened to their needs and had a good idea about what needed to be done to improve their livelihoods. Local community priorities /concerns were primarily with drought, access to domestic water (proximity and quality), degradation in soil quality and soil erosion as well as poor housing, hygiene and sanitation. Discussions with district officials also showed a high level of understanding about the immediate needs of the population and the district plans reflect these priorities. Decision-making on environmental issues and their incorporation into sectoral plans is limited. This is especially of concern as environmental management comes under the control of the economic affairs department and tends to be marginalized. In theory, cross-sectoral environmental issues should be addressed by the district environment, sanitation and hygiene committee, however it seems like this committee has not been operationalized in any of the districts that were visited.

- *Public environmental awareness:* The people are clearly aware of the importance of their environment in supporting their livelihoods. What they lack are techniques to reduce the impact and alternatives where appropriate. All groups interviewed demonstrated an intimate awareness of the economic and social costs from environmental degradation. With the enactment of the new environmental law

(MINITERE 2003env.bill), the Ministry of Land, Environment, Forestry, Water, and Mines (MINITERE) is now on an educational campaign to publicize the law and its implications down to the cellule level of government.

3.2.1.3 Community Development Plans and Projects

- *Funding of Community Development Plans and Projects:* The Common Development Fund is an important national structure to help finance the decentralized network of government in a coordinated manner and displays the government commitment to the decentralization process. However, balancing sectoral financial needs at the national level led to a 50% cut in the proposed budget for CDF in the year 2004-2005. This level of financing seems once again to be just sufficient to provide for local government overhead costs with little spare money for projects to address the people's needs.
- *Capacity:* Assuming that finances for projects are available there are two questions that need to be addressed. What is the capacity to facilitate the implementation of projects and what is the capability of the local population to manage them? As was demonstrated earlier with only one agronomist and one forester per district, there are perhaps not enough trained human resources in the districts to manage the implementation of development projects efficiently and effectively. Cell and sector level officials indicated that whilst they were eager to receive funds for local development projects they needed more training in project management and good technical support to ensure effective implementation. It will take time to ensure that sufficient trained personnel at cell and sector levels are available to implement projects.

What is the capability of the local population to manage projects or who should receive training to manage local projects? This is problematic as often the general population will not be sufficiently literate to properly manage accounts and complete necessary documentation. Local elected leaders are often so because they have the required level of literacy to be a candidate. Thus there will be a natural tendency to look towards these individuals for project leadership and management. A weakness of training local government leaders is that they may not continue to be such from one election period to another, so some system of ensuring that they remain available to project completion should be investigated. In addition there was concern at province and district levels that once sector and cell level representatives received training they often used their new skills to move and find work elsewhere, thus the investment in human resource development did not yield local-level benefits. This is further exacerbated by the fact that cell level representatives receive no remuneration for their work and at sector level. It is perhaps not reasonable to expect local level project management to take their responsibilities seriously without some form of compensation for their efforts.

- *Fund Disbursement:* A clear issue at all levels of local government and for the communities was that despite processes being in place to listen to the needs of local people, little action was being taken to ameliorate the problems. At all levels local leadership stated that there was little or no money to do the work that needed to be

done. Discussions at the district level revealed that across all districts budgets over the last two years had been just sufficient to merely finance the operating costs of the administration as well as the capital costs of setting up district and sector administrative infrastructure (office space and recruiting human resources). Clearly this was an important phase in setting up the decentralized network of government, but at the same time there are urgent needs of the population to be addressed; the next phase is obviously geared towards meeting this demand.

- *Mainstreaming of environment in Community Development Plans:* Within the decentralization policy that guides economic development and the reduction of poverty, each district elaborates their own Community Development Plans (CDP) according to a participative approach by their citizens. Within Kibungo, the GTZ Project for Decentralization Support has provided technical and financial assistance to all districts within Kibungo; all districts within Kibungo approved their CDPs in 2004. The CDPs contain a list of proposed community projects to assist with important socioeconomic needs of the districts (Table 13). It is obvious that the execution of these projects may affect the natural environment in the area around the project. Although each project contains a discussion of potential environmental impacts, there is a lack of extensive environmental impact assessment for these projects, with most projects noting that "some activities of the project can harm the environment, measures will be taken for the protection of the environment."

Table 13. Number of projects, by category, in the Community Development Plans for Cyarubare, Rusumo, and Mirenge.

Type de projects	Cyarubare	Rusumo	Mirenge
Construction of socio-economic infrastructures	42	25	98
Construction or rehabilitation of roads	9	8	9
Adduction of water	4	4	2
Conversion or wetlands	4	1	5
Increased use of improved breeds of cattle	3	0	0
Increased use of small livestock	0	0	1
Promotion of cash crops	1	0	0
Transformation of food crops	0	0	4
Improved cooking stoves	0	1	0
Other (diverse projects without environmental assessments)	3	16	56
Total	66	55	175

Source : Compilation of data from the CDPs of Cyarubare, Rusumo, and Mirenge Districts.

The analysis of the project proposals identified in the CDPs of the three districts allows us to regroup them in four categories according to the magnitude of potential environmental impacts, as described in the project documents.

Table 14. Types of proposed projects and their potential impacts on the environment.

Types of Projects	Potential Environmental Impact
1. Increased use of improved breeds of cattle	Positive impact: Forage plants and shrubs planted for enclosures. Organic fertilizers for agricultural land.
2. Construction or rehabilitation of roads	Activities can harm the environment along the road during the period of construction. Indirect effects because of increased market access could also exist.
3. Processing plants for agricultural goods (pineapples, palm oil, etc ...)	Negative impact: Concentration of organic wastes in processing and some processing consumes large amounts of fuelwood.
4. Construction and equipping of schools, sector offices, and houses for the homeless, etc...	Very negative impact: Projects consume large amounts of wood for construction and fabrication of furniture.

As indicated in Table 14, there are potentially negative environmental impacts from CDP proposed projects. Unfortunately, these impacts may not be mitigated effectively as environment has not been integrated during the project design stage. In addition, guidelines as to how to integrate environment in CDF projects have not been developed. This illustrates how poorly environmental considerations are considered at the district level. A key issue is for the EC/CDF will ensure that environment is mainstreamed at the project design stage and to facilitate a framework for assessing the approved projects with a view of integrating mitigation measures that would reduce the negative impact on the environment.

3.2.2 Consequences of EC Support at the Meso Level

(1) *Operationalization of decentralization:* The EC support to CDF will contribute to the operationalization of the decentralization process where participatory planning and decision-making for all matters relating to rural development. Although the process at the moment has not lived up to expectations, it is anticipated that as more projects are identified and implemented, the strengths, shortcomings and innovative approaches of the programme will manifest themselves which information will be useful in informing subsequent EDFs.

(2) *Improved technical and organizational support:* Decentralization presupposes that the relevant government ministries will decentralize their technical capacities to the local government level where action is expected. Unfortunately, evaluation of the current technical staff establishment and capacities in Kibungo Province portrays a picture of inadequate capacities both in terms of numbers and technical expertise. It is

therefore hoped that the EC support will strengthen the technical and organizational support at the decentralized level.

(3) *Clear guidelines on environmental screening of CDF supported projects:* The EC requires that all projects to be supported under CDF are screened for environmental suitability. Already, the CDF will not fund projects without adequate attention to environmental issues. In order to truly mainstream environment, the project management unit working with such institutions such as REMA to develop clear and specific guidelines on environmental screening for CDF supported projects to guide in the design, implementation and monitoring of the projects.

3.3 Macro level

3.3.1 Macro-economic policies

3.3.1.1 Vision 2020

The protection and management of the environment are among the pillars of Vision 2020. GoR envisages that by 2020, it would have built a nation in which pressures on natural resources, particularly land, water, biomass and biodiversity has significantly been reduced and the process of environmental degradation and pollution would have been reversed. By 2020, key indicators should show that the percentage of households involved in primary agriculture should be reduced to less than 50%; the rate of diseases related to environmental degradation should be reduced by 60%; and the dependence of wood in national energy balance should have been reduced to 50%.

3.3.1.2 Poverty Reduction Strategy Paper (PRSP)

- *As a tool for national priority setting and resource allocation:* Rwanda has initiated policy and budgetary processes at a national level, which have a bearing on the future management and financing of development activities, including those that relate to environment. At a national level, Rwanda has made progress down the path to integrated and participatory budgetary planning through the PRSP 1 (MINECOFIN 2002). Similarly through Public Expenditure Review (PER) it is possible to establish the level of disbursement of funds. GoR has commenced preparations for PRSP II.

- *Ensures cross-sectoral synergies:* The PRSP provides the inter-ministerial platform for policy coordination across all sectors. As such, it is the fundamental tool to mainstream environmental issues in other sector policies. Currently, the Ministry of Finance and Economic Planning (MINECOFIN) oversees the coordination of PRSP M&E system. This is done in conjunction with its stakeholders by issuing guidelines and preparing consolidated reports on macroeconomic and growth policies, annual budget execution and annual PRS implementation progress report. The Department of Statistics within MINECOFIN is equally responsible for the co-ordination of surveys and the standardization of data from different sources. The statistics department is being reformed into the Rwandan National Institute for Statistics (RNIS) and the legislation

governing its activities is now with Parliament. In the planning area, sector strategy processes were strengthened, and performance reviews were reinforced and extended to all sectors, thus improving the linkages between the planning and budgeting processes with the public services delivery and utilization. Training and capacity building in planning units both at central government and local levels received attention in 2003 and will continue. In the area of public finance management, the cash management committee was set up to speed up the cash planning based budget execution. The monitoring of project implementation has continued to be strengthened by the Central Public Investments and External Finance Bureau (CEPEX).

- *Elaborate mechanisms for generation of information:* improving the environment to reduce poverty requires local understanding of how environmental conditions relate to poverty and the ability to identify and set priorities and evaluate their effectiveness and impact. This, in turn, requires appropriate indicators and monitoring systems. Available environmental data tend to focus on environmental change without determining poverty effects, while poverty-monitoring systems ignore environmental concerns. A key challenge will be to address the interface between PRS information needs, information needed for sector strategy formulation and implementation, and monitoring of district development plans. To achieve this, government is planning to develop and strengthen the Management Information System linking the policy level to the service provider agencies in key sectors as it was successfully done in education and health. MINECOFIN and MINALOC have developed a district PRS monitoring framework that will help local government to manage a reliable database covering the implementation of poverty related priority programs. To supplement information produced through MINECOFIN and the sector ministries' administrative systems, a wide range of studies are regularly conducted in the area of tracking public funds from the central level to frontline service providers as well as the assessment of performances of those agencies in producing services accessible to the population. The citizen report card technique is being developed in Rwanda to measure the level of satisfaction and public services users' perceptions. This will feed into the policy design and implementation process. However in addition to such qualitative measures there is need for quantitative social, economic and environmental data on indicators of policy success. At present little elaboration of the indicators and mechanisms are available.

- *Clearly defined mechanisms for monitoring impacts:* Indicators are needed that measure how environmental conditions affect the livelihoods, health and vulnerability of the poor and these need to be integrated into national poverty monitoring systems and assessment. Some work has already been done in this area. For example, in the guidelines for the development of sector strategies, a comprehensive sectoral Monitoring and Evaluation (M&E) system is considered a crucial element. Two main elements underpin this; firstly, more results-oriented sector strategies through improved use of the Medium Term Expenditure Framework (MTEF) and secondly, the development of a Management Information System (MIS). The education & health sectors are ahead in this, but other priority PRS sectors such as agriculture and infrastructure will be actively supported to come up with sound M&E systems. The MIS of different sectors will be developed and strengthened for collecting and managing

sectoral indicators from which a list of indicators can be chosen to monitor poverty indicators deemed crucial for the PRS process.

3.3.1.3 Community Development Policy and Decentralization

(1) *Decentralization policy framework:* The community development policy sets out the aims and objectives of decentralized government in Rwanda. The main objective of this policy is to set out the structure of decentralized government to support the participation of local communities in their own development focused on poverty reduction. Ensuring people's participation in planning and management of development is the policy's central element. This is supported through the establishment of decentralized government units to support community development actions. To this end the CDF was established to strengthen the PRS and empowerment of the population by providing them, through the decentralized local government structure, with financial support to implement development projects. The specific challenge for the environment sector is how to ensure that environmental concerns and environmental laws are addressed through the decentralized network and that sufficient finance and human resources are available to address key issues.

(2) *Common Development Fund:* This is a critical structural financial instrument through which to central government funds are channeled to the decentralized network of government (CDF 2004). Every year, a fund is established by central government and strictly apportioned to each district according to an established formula based on demographic and geographical parameters thus each district has a known amount of money that they may apply for. Unfortunately in the current budget year the fund was dramatically reduced (by 50%) due to central government financial constraints caused by the current energy crisis.

- *Screening of projects to be funded:* Districts are required to submit project proposals for evaluation by a central government committee to evaluate the appropriateness of the proposed actions according to the established district development plans as per the criteria. Once a project is approved, the districts are then responsible for implementation according to specified CDF project management guidelines, including the tendering of contracts for construction and other services. Once work plans and contracts have been established, approved finances are disbursed to the districts from CDF for implementation. In the future, CDF wishes to move towards a budget support approach to financing the districts, where by district will submit broad development plans and budgets for financing. In 2005, the CDF will give budget support to over 20 districts, including the Districts of Rusumo and Mirenge which were included in this study. In the case of budget support, finances can be disbursed in quarterly tranches against agreed outputs.

- *Project management and implementation:* The ability of districts to manage the process has been variable to date, with some districts managing the process and project implementation well and others failing, mainly due to poor human capacity in project management. Typically failings have been in the management of the tender

process and contracted work. In several cases, work had been paid for in advance and to date had not been completed by the specified time or remains unfinished. This has been an important lesson for CDF management and in the future much more emphasis will be placed on financial control with disbursements against project activities happening against agreed outputs. As for budget support, those districts that have a good record to date will be the first to benefit from the approach, whilst other districts with a poor record in project and financial management will continue with project support until their capacity has been developed.

- *Mainstreaming of environment in CDF projects:* Although environment has not currently been mainstreamed in CDF, there is an opportunity to have environmental issues mainstreamed. For example, at the moment CDF requires that at least 5% of finance must be spent on projects that directly address environmental issues. This is a positive step towards mainstreaming environmental issues in CDF funded projects. In addition, CDF has introduced environmental screening for all proposed projects as a way of ensuring that environmental considerations are considered at the project design stage. For this to be effective, REMA must develop the relevant environmental management tools such as the Environmental Impact Assessment (EIA) Guidelines and Procedures to provide a framework for environmental screening. In addition, capacity building of the various actors in EIA is of critical importance.

3.3.2 Environment and Sectoral Policies

3.3.2.1 Environmental Policy

- *Formulation and implementation of environmental related policies:* The Ministry of Lands, Environment, Forestry, Water, and Mines (MINITERE) is the principal government body responsible for the development of environmental policies and for overseeing their implementation. The environment sector has undergone many organizational and political changes since 1996 (MINITERE, 2003 env). In general, several environment-related policies and laws have recently been reviewed to address emerging environmental issues. Table 15 provides a synopsis of some of the policies and laws which have been recently passed.

Table 15. *Progress of environmental laws, policies, strategic plans, and budgets.*

Ministry sub sector	Bill	Policy	Strategic Plan	Budget
Lands	New Law Passed	Written and elaborated	Proposed	Pending Strategic Plan
Water	Review needed	Written and elaborated	Proposed	Pending Strategic Plan
Forests	New law Passed	Written and elaborated	Proposed	Pending Strategic Plan
Environment	New Law Passed	Written and elaborated	Proposed	Pending Strategic Plan
Mines	Review Needed	Written and elaborated	Proposed	Pending Strategic Plan

- *Establishment of Rwanda Environment Management Authority (REMA):* The strategic importance of environmental issues is gaining much more appreciation at the national level. This has been demonstrated by the enactment, by Parliament and Senate, of the Environmental Law (MINITERE, 2003env. bill.) and the establishment of the REMA. This instrument provides a legal and institutional framework for environmental management in Rwanda. For example, under the new environmental law, all projects before implementation must undergo an EIA (MINITERE 2003env.bill, Article 72). The law further establishes the National Fund for Environment, an innovative way of raising resources for investment in the protection and management of the environment. The challenge is to mainstream environment in all other sectoral policies, laws, plans, programmes and projects. In addition there are distinct organizational challenges to effective implementation, which will require substantial financial and human resources. UNDP through the Decentralization and Environmental Management Project (DEMP) is providing support to the strengthening of REMA.
- *Accession to international conventions/treaties/agreements:* GoR has acceded to several international conventions dealing with the protection and management of the environment. These include:
 - Convention on Biological Diversity (1995).
 - United Nations (UN) Convention on Climatic Change (1998).
 - UN Convention on Desertification (1998).
 - Vienna Convention for the Protection of the Ozone Layer (2001).
 - Stockholm convention on persistent organic pollutants (2002).
 - RAMSAR convention on Wetlands (2003).
 - Convention on the Conservation of Migratory Wild Animals (2003).
 - Convention on the Control of Transboundary Movement of Hazardous Chemicals and Pesticides in International Trade (2003).
 - Basel Convention on Control of Transboundary Movements of Hazardous Wastes and their Disposal.
 - Kyoto protocol on the UN convention on climate change.

3.3.2.2 Land Policy

- *The quest for Land Law Reforms:* Apart from a few scattered land regulations, most of which date back to the colonial period, Rwanda has never had a proper land policy nor has it ever had a land law, a situation that has enhanced land degradation and insecurity. Some of the issues that have catalyzed the need for land law reforms are (1) strong pressure on the already spatially limited land resources by a rapidly growing population; (2) domination of the agricultural sector which lacks any specialization in terms of human resources and equipment, and lack of alternative concrete and realistic options that would reduce the pressure on land resource; (3) land tenure system dominated by customary law which favors land fragmentation, a practice which reduces further the size of the family farms which are already below the threshold of the average surface area that is economically viable; (4) considerable number of landless persons who have to be resettled at all costs; (5) scattered farming plots that

are difficult to manage due to the scattered mode of human settlement; (6) lack of a reliable land registration system that would guarantee the security of land tenure; (7) weak and inadequate existing methods of land-use planning and land improvement (outline of land potential, land use and land development; reliable methods of soil and water conservation); (8) disorderly and fraudulent land transactions, necessitating the establishment of regulations that would enable the authorities to give to the land a recognized market value which brings considerable profit to the Treasury; and (9) unplanned use and conversion of wetlands.

- *Framework of the National Land Policy:* Because of the aforementioned urgent needs, the Government of Rwanda has promulgated a national land policy. The purpose of the national land policy (MINITERE 2003land) is to guarantee a safe and stable form of land tenure, and bring about a rational and planned use of land while ensuring sound land management and an efficient land administration. One area that requires attention is the rights of women over land, especially those who are part of the polygamous households, female-headed families and single mothers.
- *Framework for implementing the new National Land Policy:* The implementation of the policy statements and strategic options of this policy will be based on the major policies contained in Rwanda's National Development Strategy by 2020, which ranks land policy among the country's vital and key policies. However, a mid-term evaluation will be carried out after ten years so as to bring in the necessary readjustments. This policy will serve also as a useful reference for the elaboration of various three-year sectoral policies, the implementation of which takes into account the Medium Term Expenditure Framework. It is important to note that the implementation of this policy will not be the prerogative of the Ministry of Lands, Environment, Forests, Water and Mines only since its multi-sectoral character calls also for a multi-sectoral intervention and coordination. Similarly, for the implementation of this policy to be really effective, certain issues need to be considered. These include (i) formulation of a master plan; (ii) establishment of Land Registry with appropriate Geographical Information System (GIS) capability; and (iii) clearly defined cross-sectoral linkages with REMA and other key sectors such as MINAGRI among others.
- *Added value to environmental protection and management:* Such a land policy will bring environmental benefits through security of tenure and the ability of households to obtain credit and make investments against their land holdings, secure in the knowledge that their land cannot be appropriated from them. At a macro level this may not be so much of a concern as the land market will allow for more optimal allocation of resources for economic development, but the meso and micro level social and economic consequences are far from clear. Importantly it is not known how the poorest of the poor will respond to an emerging land market and the concern is that they may sell their land holdings for short-term gain becoming landless.

3.3.2.3 Forest Policy

Rwanda has a forest policy and legislation that was promulgated in 1998. Despite the existence of the law, deforestation has continued unabated. This is because of a number of factors. In this regard, the forestry issues are intricate in that the high density of the population and its poverty are the major direct factors that cause forest degradation and causes land scarcity for afforestation (MINITERE 2003for). The dependence of Rwanda on woody biomass for domestic fuel is a critical factor as demand outweighs supply and the overall forest capital reduces. In addition many institutional and organizational constraints are identified in the policy detailed below.

- *Forestry personnel are insufficient at all levels* – few provinces have forest officers such that in 1999 there were only 46 forest officers out of a scaling of 146. Many posts are vacant or occupied by agronomists. There are no higher learning institutes in Rwanda that offer the necessary training.
- *The forest law of 1988 has not been effectively enforced* – the weakness has contributed significantly to the depletion and deterioration of forest resources. The law needs to be updated to cope with the present situation.
- *International Donors in the forest sector are rare* – Out of the many donors that were assisting with forest management before 1994 only two (DED and the Netherlands Cooperation) are currently working in a limited way at the national level. The low level of donor interest in forestry is likely due to the low priority of forestry in national development plans prior to 2000.
- *The Rwandan population lack incentives to plant trees* – communal activities such as *umuganda* have yet to recover their intensity. In fact the ability of poor rural households to engage in communal labor activities without compensation may be waning as increasingly few private benefits from communal activities are being experienced.

3.3.2.4 Water Policy

- *Policy framework:* The water sector policy aims at increasing access to and supply of this vital public utility. It has two main objectives: (1) development of the provision of potable water; and (2) management and development of hydrological infrastructure. Since 2003, progress has been made in undertaking the desired reforms in the water sector. Some of the priority areas identified water resource protection, water and sanitation, including the sanitation code, the establishment of a geographic information and management system for the sector (GIS) and studies and works on drinking water in various districts (MINITERE 2003water). However, the water supply system still requires extensive up-grading and rehabilitation in the cities and must be extended in the rural areas to be consistent with the Government's long-term objective of increasing the current servicing rate of 54% in drinking water and 8% in sanitation to 85% in 2015 for drinking water and sanitation. Private firms will be contracted to ensure the long term sustainability of the rural water supply systems while strengthening the decentralization of water sources management. The Urban Water Supply and Sanitation (UWSS) program will increase urban coverage from 73% to 78% and reduce leakage

from 43% to 23% by 2007. Another program aimed at increasing sanitation and hygiene education in schools and at home will also be undertaken.

- *Progress towards Integrated Water Resources Management:* In the past one year, a number of actions have been taken by the GoR to review the water related policies and legislation with a view of making it appropriate in promoting integrated resources management. The actions include (1) updated draft of the law on water resource protection, water and sanitation policy and the sanitation code; (2) establishment of an information and management system for the sector (GIS); (3) study of rural drinking water adductions in 3 pilot districts (Ngarama, Save and Nyamasheke) within the Projet d'eau et Assainissement en Milieu Rural (PEAMR); (4) studies and starting of works of rural drinking water adductions (Districts Gasabo and Buliza) in the framework of the project 8 ex-communes around Kigali; (5) study of Rehabilitation and extension study of the Bugesera-Karenge rural drinking water adductions; (6) survey of rehabilitation and extension of Butare rural drinking water adductions; (7) monitoring of the exploitation of the Bugesera-South rural drinking water adductions Humure (Byumba:) drinking water adductions project was achieved; (8) rehabilitation and construction of 3 boreholes in Nkombo and launching of the construction of 20 others (9) rural drinking water adductions works in Bwisige (actual district of Rebero) Byumba for 6000 persons; and (10) establishment of a drinking water adduction and sanitation program in rural areas with as target, to pass from the present servicing rate of 54% in drinking water and 8% in sanitation to 85% in 2015 for drinking water and sanitation. A launching phase has been funded by the African Development Bank.

- *Survey on the rational and sustainable development of wetlands and valleys:* A survey on the rational and sustainable development of wetlands and valleys in Rwanda was carried out in 2003 and a detailed plan for the development of 6,000 ha is in progress while work on another plan for 1,550 ha will be initiated soon. The finalization of these surveys is planned for the end of 2004 and the execution of the work is planned for the beginning of 2005. Valley dams and floodwater harvesting will be initiated, especially in the *imidugudu*, in order to improve the use of this substantial water source that often goes to waste.

- *Constraints:* Major constraints for the implementation of policy include (i) insufficient financial resources; (ii) insufficient human resources in quantity and quality; (iii) weakness of the legal and institutional framework; (iv) lack of sufficient knowledge of the real situation of the sector; (v) intervention by the private sector still minimal; and (vi) decentralization not yet well established.

3.3.2.5 Mines and Minerals policy

- *Policy framework:* Policy towards mines and minerals is geared towards their economic exploitation and holds lower in its priorities the need for environmental and welfare considerations. However as with other sub sectors it suffers as a result of poor investment and resources for the exploitation of minerals. Essentially in all mining operations to control for environmental concerns it will be necessary to have in place a

relevant regulatory framework and system of enforcement which at the present time will need to be developed.

- *Mineral exploitation:* The mining sector in Rwanda is currently focused on the exploitation of cassitérite (tin ore), wolfram (tungsten) and coltan (mobile phone chips) and materials for the construction industry (MINTERE 2003mines). Major policy instruments to promote the development in this area include tariff reductions and export tax removal. The industry within Rwanda is generally small scale, but not without its impact on the environment. In Nyungwe Forest the search for coltan has led to the degradation of the forest reserve. However this has less to do with policies towards mining and more to do with enforcement of regulations governing activities in protected areas. Quarrying has increased throughout Rwanda especially for brick making, lime, and stones for construction and road building. This is indicative of the fact that in 2003-2004 the 7.1% industrial growth in 2003 was led almost solely by the construction sector. However the brick making has slowed as a result of forest and environmental policies regarding the use of trees for fuel for industrial resources only coming from approved sources.

3.3.2.6 Agricultural policy

- *Contribution of Agriculture to National GDP:* Agriculture is perhaps the single most influential activity on the environment and the most important economic activity at the micro and macro level (MINAGRI draft). In 2004, approximately 45% of gross domestic product (GDP) and approximately 60% of foreign export (principally coffee and tea) revenue came from the agriculture sector. The PRS emphasizes the importance of increasing agricultural productivity and raising rural incomes. In 2003, the agricultural production declined, registering a growth rate of negative 1% against 15% in 2002. Unfavorable climatic conditions that caused total food crop production to decrease by 4.5% in 2003 (This does not compare favorably with a 31.5% food crop production growth in 2002) are blamed for this situation. Production of four out of the top five more consumed food crops decreased (ranked by importance sweet potatoes, beans, bananas and cassava with the exception of Irish potatoes), thereby possibly increasing the vulnerability of Rwandan poor households. Despite the sector being the country's most important, the budget allocated to this sector has been decreasing in percent of GDP and the GoR is committed to increase allocations for this sector over the medium-term.

- *Policy framework:* An agricultural policy document has already been produced and the sectoral strategy is under elaboration but has not yet been finalized. It is crucial for the success of the entire PRS that attention is paid to the integration of the agricultural transformation and rural development strategies under the lead of MINAGRI. However, the shortage of human resources in the MINAGRI and the lack of reliable statistics remains a major challenge. In 2003, a technical diagnosis of data production of the present information and agricultural statistics system revealed several deficiencies of which: the rarity and lack of relevant data produced in relation to the needs; the uncertain reliability of some data; the irregularity and discontinuity of the

series; the limited accessibility and distribution of the existing data for users; and the quasi-total dependence of the production of statistical data on donor funding. The main agricultural policy objectives are:

- (1) The transformation and modernization of agriculture through the professionalization and specialization of the sector;
- (2) The development of commodity chains by the selection of a few priority;
- (3) The promotion of competitiveness of agricultural products by the promotion of export crops and their regionalization in order to reduce production costs and optimize the comparative advantage; and
- (4) The development of entrepreneurship through partnership with the private sector and encouraging it to be part of the process of agricultural transformation.

- *Policy implementation:* Implementing agricultural policy is going to mainly dependent on research extension and marketing services. Among the main obstacles identified to the development of priority crops and the proper use of modern inputs are related to the inadequacy of research and extension services. The link between research and technology transfer is currently inadequate. The human pressure on land is the principle drive behind the degradation of environmental resources, especially where agricultural outputs are declining per unit area, promoting extensification. Agricultural policy needs to be able to swiftly change agricultural practices to promote intensification and good soil and water management practices in order to alleviate poverty that will in turn have the most influential impact on the integrity of the environment.

- *Building technical capacities and environmental mainstreaming:* It is important that capacities are built among the agricultural staff to be able to look agriculture from sustainable agriculture perspective. This approach will ensure that environmental issues are factored in the agricultural decisions. In this regard, the role of the Institute Superior de Agriculture Recherche (ISAR), the institute responsible for adaptive research is appreciated. That notwithstanding, there is currently no adequate extension services system. The major extension strategy has consisted of addressing the most crucial needs of training in the sector. Major interventions by the end of 2003 included, 450 technicians trained as trainers on animal husbandry, rice production, production techniques and crop conservation, formation of association, small project management and project funding. Forty radio broadcasts and 8 video productions on agricultural techniques were produced. For organic and inorganic fertilizers, 550 demonstration plots were established in 8 provinces and about 10 farmers' committees were also established. In tandem with MINITERE, Rwanda's MINAGRI has elaborated a strategy aimed at curbing soil erosion and boosting the soil fertility, as a means of reversing poor soil conservation practices that have contributed to an estimated yearly loss of 945,200 tons of organic matter (MINAGRI/UNDP 1999).

- *Cross-sectoral linkages:* The implementation of the agricultural strategy is hampered by the lack of a clear link between the decentralized services and the central services of the MINAGRI (means are limited at the central and decentralized level) as

well as the operators in the sector. An effective working relationship must be reinforced between extension agents, NGOs, farmers associations, the private sector and local authorities.

3.3.2.7 Other Enabling Sectoral Policies

(1) *Standards:* The Rwandan Bureau of Standards (RBS) is the sole standards authority in Rwanda and was established in 2002. RBS has autonomous administrative and management status (parastatal) and is supervised by the Ministry of Commerce, Industry, Investment Promotion, Tourism, and Cooperatives (MINICOM). It is governed by a board of directors composed of representatives from government, higher institutions of learning, the private sector and consumer protection associations. A representative from MINTERE is listed on its board's roll of members. RBS is mandated with the task of promoting the standardization, quality assurance, metrology and testing as a pre requisite for ensuring consumer safety and satisfaction as well as competitiveness of industry. As such it is also responsible for monitoring the standards of imported goods and will have a critical role to play in quality assurance and compliance of chemical inputs (agricultural fertilizers, pesticides etc.). It has a role to conduct inspection and monitoring at the major points of entry into the country of imported goods and can also perform testing of products on a public or private basis. Currently it is primarily focused on consumer goods, but can envisage a role in testing samples of soil and water for inorganic and organic pollutants as well as heavy metals. As with many other government departments it faces severe financial and technical constraints in the implementation of its duties in recent times.

(2) *Office Rwandaise du Tourisme et des Parcs Nationaux (ORTPN)*

- *Mandate:* ORTPN is mandated with the conservation of biodiversity within the protected areas of Rwanda and with the development of tourism both nationally and internationally. As with RBS, it is a parastatal and has recently (2003) completed a restructuring exercise. Tourism is cited as one of the main economic sectors that the Government is trying to develop as a means of attracting foreign currency and, in addition, in November 2004, Rwanda sought further to promote itself as a tourist destination by having a stands at international tourism expositions in Europe. The results of these and private sector efforts are promising, since the sector has developed beyond expectations, achieving better results than targeted in the tourism development strategy.

- *Integrated conservation:* Perhaps a major lesson is that integrated conservation-development projects have good potential to be effective if they can lead to the avoidance of open-access conditions, and to the specification of property rights. This does not preclude the preservation of a core area, or specified species and resources. What it does provide is a social contract by which the local communities of resource users have certain rights and responsibilities. Conservation-development is a trade-off, but a trade-off that can have net positive value for overall management. This is because the community of users with specified rights can help enforce rules that avoid open-access conditions, not because the users necessarily believe in conservation, but because avoiding open-access is also in their best interest. The challenge is how to

make CDF finances that are available to fund development projects can easily be targeted towards community conservation initiatives within the framework of the district development plans. The ORTPN has the capacity that could help bolster local districts capacity in this area.

4.0 Opportunities to Mainstream Poverty-Environment Linkages within the Current Political Framework

4.1 Opportunities for Mainstreaming Poverty-Environment

4.1.1 Review of ACP Cotonou Agreement

ACP/Cotonou Agreement is due to lapse in 2008. Already, negotiations on the scope of the next agreement are underway. Using the current agreement which under Article 32 recognizes the centrality of environment and expects environment and natural resources to be mainstreamed into all aspects of development cooperation, lessons from the implementation could inform the negotiations to ensure that environment is not only identified as one of the cross-cutting areas of financial assistance but a specific percentage of the EC Development Aid is committed to environment or environment enhancement programmes.

4.1.2 Review of PRSP 1 and Formulation of PRSP II

The PRSP is an important tool by which poverty-environment linkages can be mainstreamed into national plans for development. Recognition that a healthy environment underpins all efforts in Rwanda to alleviate poverty and develop the economy must be included in it; thus the significance of the environment must be elaborated in national development plans. Critically the importance of the environment sector must be reflected in the national budget. Increasingly multilateral and bilateral donors are coordinating their assistance with national government plans through 'sector-wide approach'. Unless the environment sector is illustrated as a priority issue in the national budget it will be difficult to secure donor financing. The UNDP, UNEP working with government, development partners, private sector and civil society are spearheading the PRS review process.

4.1.3 Implementation of Millennium Development Goals

The GoR is committed to implementing the Millennium Development Goals (MDGs) as demonstrated by the institutional changes aimed at increasing her effectiveness in meeting these goals. To meet the MDGs, the GoR and the UN agencies especially the UNDP and UNEP are supporting the diverse local processes, through which the needs and priorities of the poor are identified and addressed, and through which poverty is reduced and natural resource management is improved. It is important to note that this process is now being linked to the poverty-environment initiative to enhance synergies and coordination.

4.1.4 Development Partners Co-ordination Group (DPCG)

The GoR has encouraged coordination of development partners to ensure consistency and to avoid duplication and wastage of resources. In this regard, the GoR considers

budget support as the most appropriate tool through which national priorities may be matched with the development partners' assistance. Thus, the GoR believes that clear budget support, when accompanied with accountable and transparent institutions, will deliver superior results compared to the traditional project approach. Further, the GoR encourages budget support donors to reduce and streamline conditionalities. For the past year there has been an increasing momentum towards supporting harmonization & alignment agenda in Rwanda. The main framework for harmonization is the Development Partners Co-ordination Group (DPCG) co-chaired by MINECOFIN and the UNDP. Two technical working groups: the Budget Support Working Group and Harmonization & Alignment in Rwanda of Projects & Programs (HARPP) have been set up. There is also GoR - donor sector cluster groups that have played some role in elaboration of sector strategies. These groups have worked with diverging degrees of efficiency and clear functional mechanisms will have to be designed to make them function more effectively.

The *budget support* framework signed in 2003 provides for donor harmonization and alignment to the national planning, budgeting and reporting mechanisms. A secretariat was set up within government in 2004 to push ahead with reforms. The work of HARPP is still in its infancy, but there is strong interest from the donor community to come up with some generally agreed principles governing project support, to make administrative procedures less time consuming for Government. The GoR together with its development partners are currently in the process of agreeing upon a framework for HARPP, which will be translated into a three-year action plan. Therefore, this Group provides an excellent opportunity to reach out to various development partners with a view of supporting the mainstreaming of environment in all their development assistance support.

4.1.5 Common Development Fund

The CDF fund and process is an important means of directly and indirectly addressing environment issues. Directly, CDF can provide funds at the local level to ameliorate specific environmental problems and indirectly through environmental screening will ensure that environmental issues are mainstreamed across sectors.

4.2 Constraints in mainstreaming poverty-environment

4.2.1 Lack of understanding of poverty-environment linkages

The poor largely depend directly on a wide range of natural resources and ecosystem services for their livelihoods. This is through a range of land use or natural resource management activities including agriculture, raising of livestock, forestry, fishing and gathering of wild foods. In addition to the direct use, the environment indirectly support the livelihoods especially ecosystem services. Ecosystems also provide critical life-supporting services such as cleansing, recycling and renewal of resources especially water. Unfortunately, information on the poverty-environment linkages has not been

developed and packaged in a manner that informs the planning and resource allocation processes.

4.2.2 Inadequate capacity in valuation of environment and natural resources and their contribution to national economic growth and poverty reduction

The GoR has the environment high on its agenda. Recent environmental disasters have highlighted the inextricable relationship between the national economy and the environment (Box 2). Given the impacts on the economy highlighted in by national government there is a need to seriously integrate environmental issues across all sectors.

Box 2. National economic impacts of environmental degradation.

Rwanda's has witnessed two major examples with immediate impacts on the economy from the disturbance of key environmental resources. The two cases in point are:

- 1. Forest Clearance at Gishwati Forest Reserve – 1996-1998*
- 2. Wetland drainage in Rugezi Swamp – 2003*

Forest Clearance and economic impacts in NW Rwanda

Gishwati forest was a large area of tropical mountain forest in north west Rwanda providing almost the entire catchment for the Sebeya River flowing into Lake Kivu to its west. A World Bank sponsored agricultural project saw approximately 180 km² converted to agriculture and livestock production in the 1980's and the remaining reserve was partially degazetted for resettlement post war during the mid 90's. However the resettlement was largely uncontrolled and although the nominal territory of the reserve is 40km² only 7km² of disturbed natural forest remains.

Impacts on the local economy range from reduced agricultural outputs due to soil erosion and loss of property and death of people and livestock due to a prevalence of flash flooding and landslides after the loss of forest. Siltation in the Sebeya river has also had dramatic effects on the volume and cost of power and potable water from Electrogaz and caused an increase in production costs at the Bralirwa brewery. Estimates from a GEF sponsored study (WCS 2004) indicate that annual financial losses to Elocragz alone are in the region of \$350,000 per annum as a result of the marginal increases in the down time at plants for cleaning out sediment.

Wetland drainage and the national energy crisis

Rugezi Swamp is a tropical highland swamp, located in central northern Rwanda and runs north to south for approximately 40 km, between Ruhengri and Byumba Provinces. It is a major part of the catchment for lake Bulera, into which Rugezi drains, and lake Ruhondo (into which lake Bulera drains) in northern Rwanda. The swamp acts a giant 'sponge' during the wet season and continues to release water slowly into Lake Bulera during the dry season, helping to maintain the dry season level of the lake.

A hydropower production plant is located in the channel between lakes Bulera and Ruhondo. In 2003 a local project was undertaken to drain Rugezi swamp to allow for agricultural production. The subsequent drainage system over a large part of Rugezi terminally disrupted the holding capacity of the swamp as a dry season reservoir for lake Bulera. As a result dry season flows into Lake Bulera dramatically reduced, which saw the level of the lake drop by 3-4 meters the following dry season. The off take of water to the fixed infrastructure of the power plant was greatly reduced causing the largest part of a massive drop in output caused by only intermittent production when water levels allow. This has been the major factor in the power deficit in Rwanda. To cope with the power shortage, Rwanda has had to import diesel generators and the price of electricity has more than doubled. This undoubtedly has had huge impacts on economic development in the service and industrial sector as businesses were initially crippled by lack of power and are now facing higher production costs because of the price increase.

Thus, to make rational choices when environmental and economic values are to be compared, it is essential that accounting systems and market prices reflect the relevant values. At the macro-economic level, this means that the traditional system of national accounting needs to be amended to better reflect environmental values.

4.2.3 Lack of appropriate environmental and poverty-environment indicators

There is need to establish appropriate and effective poverty-environment indicators and monitoring systems. Current environmental data tends to focus on environmental change without determining poverty effects, while poverty-monitoring systems ignore environmental concerns. Poverty-environment indicators are needed to measure how environmental conditions affect livelihoods, health and vulnerability of the poor, and these need to be integrated into national poverty monitoring systems and assessment.

5.0 Conclusions and Recommendations

5.1 Conclusion

Environment is an important cross-cutting issue in Rwanda, providing the resource base upon which the citizens derive their livelihood in addition to the environment's centrality in national economic growth.

5.2 General Recommendations

5.2.1 Mainstreaming of poverty-environment linkages in PRSP II and cross sectoral policies, plans, programmes and projects

(1) *National Priority setting and Resource Allocation - PRSP II:* The GoR is committed to poverty reduction and wealth creation. The first PRSP which was approved for implementation in 2002 is due for revision by the end of 2005. Four principles underpin the PRS implementation. These are (1) policy coherence; (2) prioritization; (3) learning process; and (4) partnership. In PRSP 1 little emphasis was put on mainstreaming of environment. This could be attributed to poor understanding of the poverty-environment linkages. But with increased knowledge about the centrality of environment and natural resources as a resource base of the majority of the rural people in Rwanda who account for about 90% calls for special consideration in ensuring that environment is mainstreamed in PRSP II. In this regard, the Task Force established under the GoR/UNEP/UNDP Poverty Environment Initiative need to be strengthened to provide the leadership and coordination of this process.

(2) *Cross-sectoral policies, plans, programmes and projects:* Quite often environment is regarded as a cross-cutting issue. Because of this ambiguity, environment is never given due consideration in many cross-sectoral policies, plans, programmes and projects. As a consequence, environment suffers. It is imperative that every effort is made to mainstream environmental considerations in cross-sectoral policies and initiatives. The PRS process and CDF provide a mechanism for integrating environmental considerations in macroeconomic policies, national plans and decentralized community development plans.

(3) *Common Development Fund:* There are deliberate efforts to decentralize and devolve authority and decision making to decentralized entities for effective delivery of service and to ensure that local communities are involved in decision-making processes on matters that affect them. In this regard, CDF is a framework that ensures that decentralized entities have the requisite resources (financial and human) for effective delivery. Because of the centrality of CDF in local development, it is imperative that environment is mainstreamed in CDF projects. It is worthy noting that plans are underway to improve CDF project screening with a view of incorporating environmental parameters as part of the criteria. To give effect to this proposal, it is imperative to consider (1) developing environmental guidelines to support the CDF project

management in screening the environmental soundness of a project; and (2) capacity building of decentralized entities, NGOs and community organizations and institutions.

5.2.2 Develop appropriate environmental and poverty-environment indicators to enhance impact monitoring

In order to measure progress towards attainment of the Millennium Development Goals especially Goal 1: reducing extreme poverty and Goal 7: environmental sustainability, development of appropriate poverty-environment indicators is of primary importance. It is acknowledged that the GoR has established development indicators, which currently inadequately integrate poverty-environment linkages. The UNEP/UNDP programme on mainstreaming environment currently in its implementation stage among other outputs will be developing poverty-environment indicators. It is worthy noting that MINECOFIN, MINITERE and REMA are key actors in this project.

5.2.3 Strengthen GoR - Donor Environment Coordination

- *Establish a formal GoR/Donor Environment Group:* It has been largely recognized that the environment is key to Rwanda's national economic growth and poverty reduction. Given the diverse array of development partners providing technical and financial support, mechanisms need to be developed to enhance the coordination of the various initiatives. It is therefore recommended that a GoR/Donor Environment Group be established to enhance mobilization and coordination of donor support for the environment sector. This will provide a framework for the relevant government ministries dealing with environment and the development partners working or with interest in the environment sector to work together in mainstreaming environment at various levels in a more coordinated way. Lessons could be learned from Kenya, Tanzania and Uganda where such groups have been established and are functional. Membership of such a Group could consist of (1) GoR representatives – MINITERE (Co-chair), MINECOFIN, MINAGRI, REMA (Secretary), ORTPN, Director of Forests etc; and (2) development partners such as UNDP, EC, DFID, RNE, USAID, SIDA etc, with the development partner contributing the most support to the environment sector to be the additional Co-Chair.

5.2.4 Strengthen REMA

(1) *Support the development of REMA's Strategic Plan:* The new environmental legislation gives REMA mandate to regulate and enhance the protection and management of environment in Rwanda. For REMA to be effective, it requires to develop a strategic framework that will enhance building of synergies with other sectors and decentralized entities. In this regard, it is recommended that REMA be supported to develop a strategic plan that will (1) define the core business of REMA; (human resource needs and capacities); (2) Synergies with various actors from Government, NGOs, private sector, decentralized entities and the public outreach; and (3) Financial sustainability projections. Terms of reference for development of REMA's Strategic Plan are attached as Annex 6.

(2) *Support the development of Environmental Management Tools (especially EIA, Environmental Audit and SEA Guidelines and Procedures):* EIA, Environmental audits and Strategic Environmental Assessments (SEA) are important tools that will ensure that policies, plans, programmes and projects at whatever level integrate environmental considerations in their decision making processes while evaluating options or alternatives. With the enactment of the environmental legislation which makes it mandatory for all new projects to undergo EIA, on-going projects to undertake environmental auditing and policies, plans and programmes to be subjected to SEA, every effort must be made to support REMA to develop these environmental management tools and put in place a framework for EIA screening and licensing. Terms of reference for development of Environmental Impact Assessment/ Environmental Audit Guidelines and Procedures are attached as Annex 7.

(3) *Support the development of Environmental Quality Standards:* Environmental quality standards are critical in determining the threshold value of environmental impact. Thus, for REMA to implement the EIA, and for the polluter to pay a principle as well as an environmental audit, REMA will be obligated to establish benchmark environmental quality standards. For example, before an EIA study is undertaken, the proponent will need to be aware the threshold levels of various environmental parameters such as water quality, air quality, etc as a benchmark. Similarly, for one to be liable for an environmental offence such as pollution, a threshold level (allowable standard) must have been exceeded. REMA will need a consultant to help put in place a framework for a participatory formulation of environmental quality standards involving government institutions especially Rwanda Bureau of Standards, private sector and civil society. Terms of reference for development of Environmental Quality Standards are attached as Annex 8.

(4) *Establish an environmental data and information base:* It is important that REMA establishes a strong environmental data and information base that will enable REMA to prepare an annual state of environment report for Rwanda and to track environmental changes over the years. This information will be important in the efforts of mainstreaming environment in the subsequent PRS and other policy instruments.

(5) *Review the DEMP Project:* It was noted that MINITERE and UNDP have been looking for a suitable person to fill the position of a Senior Technical Advisor to provide support to REMA for a long time. It is recommended that as these efforts are continued, short term specific consultancies as outlined hereinabove (For example, development of a Strategic Plan, Development of EIA guidelines procedures and development of environmental quality standards) be commissioned to speed up the process of operationalizing REMA while the GoR goodwill is still very high. If this action is not immediately addressed, environmental issues are likely to be relegated because of operational difficulties. To backstop this process, it is hereby recommended that the GoR considers requesting UNEP, UNDP and World Wildlife Fund for Nature (WWF) to form a consortium to provide technical support to REMA and in overseeing the proposed short term targeted studies.

5.2.5 Strengthen Decentralization Framework

(1) *Capacity building of decentralized entities:* Decentralization is now considered to be crucial for effective public policy, democracy and natural resources management. It is through the decentralization framework that local communities will be empowered to participate effectively in the management and control of environment and natural resources. For decentralization to succeed, it is imperative that technical expertise is built at that level to provide technical support and to monitor the impact of the CDF interventions on the environment. This is premised on the finding that district and local level governments have inadequate capacity to carry out their mandate in environmental resource management at present.

(2) *Support the empowering of community organizations and institutions:* In order to achieve the bottom-up approach as espoused under CDF, mobilization and empowering of communities to take ownership of the rural development initiatives it is important that capacities of community organizations and institutions are strengthened. This will assist communities, NGOs and other community organizations to be able to participate effectively in participatory planning, project implantation and monitoring of policy impacts on environmental conservation and livelihoods envisioned under CDF.

5.3 Specific Recommendations in relation to EC Development Assistance

5.3.1 Budget Support

(1) *Mainstreaming Environment in Budget Support:* There is no doubt that the GoR encourages budget support by donors to ensure that the national priorities identified in the PRSP are implemented; it is important that environment is mainstreamed in such budget support. Given the importance of the environment as a resource base for people's livelihoods and economic growth, the EC, through the CSP, should apportion a specific percentage (suggested 40%) of their budget support to projects and activities that contribute to the improvement of the environment. This will ensure that all projects whether under rural development, macro support or good governance/institutional support mainstream environmental considerations in all their activities. This will be in line with the commitment made by the GoR and the EC pursuant to the Cotonou Agreement and the 9th EDF. Also, this requirement would catalyze the process of raising the profile of environmental considerations in national priorities.

(2) *Direct Support to REMA and Decentralized Entities for enhanced environmental law compliance and enforcement:* REMA and decentralized entities, being new institutions, require a lot of support to equip them with the requisite resources, technical and financial, to enable them to effectively deliver on environmental compliance. Because of this unprecedented demand and expectations, it is important that they are supported to put in place systems that will ensure their presence is felt. This may not be achieved with the limited grants from the GoR through the national budget. It is

therefore recommended that the EC and other development partners, in addition to the budget support, consider providing direct support to REMA and decentralized entities.

5.3.2 Revise the framework for implementation of Rural Development component

It is very clear that the current 9th EDF in defining the scope of support and the implementation framework did not integrate the environmental aspects that might arise from such investment. For example, one of the major areas of investment is increased agricultural production with indicators being increased fertilizer used. Whereas the intentions are laudable, unfortunately no provision has been put in place to mitigate any negative environmental impacts that may occur as a result of such an investment. It is appreciated that efforts are being made to introduce environmental screening as one of the requirements in evaluating each project. However, this may be coming too late as environmental considerations will be addressed as appendages instead of being at the heart of the investment. It is therefore recommended that a strategic environmental assessment be done on the 9th EDF with a view of integrating environmental considerations as well as in establishing an elaborate environmental impact monitoring programme. This will be surest way of mainstreaming environment bearing in mind the inadequacy of capacities in Rwanda to undertake and oversee environmental impact assessment and monitoring of impacts. Other areas which require re-formulation are investments in: (1) agro-industry especially improved coffee production; (2) infrastructural development especially roads must take into consideration the environmental consequences such as soil erosion etc; (3) Increased use of fertilizers and the impact on water resources and environmental quality in general; and (4) wise use of wetlands – the strategy appears to focus on increased drainage of wetlands for increased agricultural production, especially rice production.

5.3.3 Support the transfer and adoption of environmentally sound technologies

(1) *Transfer and adoption of environmentally sound technologies:* Current strategies for poverty alleviation, (PRSP and CSP), are fundamentally built upon premises of economic growth. As the economy grows, environmental performance is likely to deteriorate or improve depending on what variable is considered. Thus, environmental improvement is not a luxury preoccupation that can wait until growth has alleviated income poverty, nor can it be assumed that growth itself will take care of environmental problems over the longer term as incomes rise and more resources are available for environmental protection. To improve the environmental soundness of growth, internalization of environmental considerations by the private sector is therefore of paramount importance. For the private sector, which is targeted for wealth creation, the degree of technological innovation will determine whether this is complementary to, or in conflict with, sustainable development. It is therefore recommended that under CDF special attention be given to transfer and adoption of environmentally sound technologies to mitigate environmental degradation such as pollution, raw material resources wastage, and waste treatment.

(2) *Establishment of a Cleaner Production Centre*: In the pursuit to promote trade and investment *especially* the domestic investors and Foreign Direct Investment (FDI), the GoR with the support of UNEP is in the process of a cleaner production centre similar to those established in Kenya and Uganda. This initiative ought to be expedited to act as a clearinghouse for the transfer and adoption of environmentally sound technologies that may be required to spur rural development under CDF. Otherwise, the private sector is likely to see EIA requirements under the new environmental law as an impediment to investment. This could provide ammunition to the private sector actors to fight the implementation of the environmental law.

5.3.4 Civil Society

Whereas both the Cotonou Agreement and EDF recognize the role of civil society in the delivery of the EC support to social, environmental and rural economic infrastructure, prioritized by the people and provide skills and new technologies to income-generating activities, none of the NGOs working in Kibungo Province has focus or capacity on environment. In order to ensure that the PMU and CDF deliver based on people's priorities, it is imperative that deliberate effort is taken to strengthen the capacities of environmental NGOs, community-based organizations, and associations to participate effectively in the implementation of CDF at the grassroots level. It is further recognized that there are very few environmental NGOs in Rwanda, those working in other sectors such as improved agriculture, energy, health and sanitation could be supported to diversify as appropriate to provide technical support in environmental governance matters.

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Annex 1. Terms of References



TERMS OF REFERENCE FOR THE CARRYING OUT OF A STUDY ON STREAMLINING POVERTY-ENVIRONMENT LINKAGES IN THE EUROPEAN COMMUNITY'S DEVELOPMENT ASSISTANCE IN RWANDA

WWF

Coordinated through the Rwanda Environment Management Agency (REMA)

At the outset the Consultant shall:

1. Work as part of a 3-person team of social scientists, each one charged with researching and reporting on the economic, social and general issues pertaining to the study.
2. Conduct a comprehensive literature review on the study area and identify key contact / target groups.
3. Develop specific, appropriate research tools.
4. Identify specific tasks of each researcher.
5. Conduct reviews of policy on the subject area.

At the field level the Consultant shall:

6. Identify the study area with the input of REMA (geographical and thematic).
7. Visit district and regional offices and conduct field studies in the area.
8. Capture local level dynamics and make community visits/surveys.

For the National level research the consultant shall:

9. Interview relevant sectoral ministries; and any other relevant institutions.

For the final report the Consultant shall (one final report as a research team):

10. Present all the results and synthesis.
11. Identify interventions and make recommendations for EC CSP.
12. Hold an internal Seminar and present the results and recommendations.
13. Work on the comments/suggestions that emerge from the seminar comments and the reviewers' inputs and present the final joint report to REMA and WWF-MPO.

The Program of Work for the EC Poverty Reduction Effectiveness Program (PREP) Analytical and Intervention Exercise
Rwanda Research Team
March 14- May 31 2005

Phase I Background

7 Days (5 days Literature Review, 2 Days ID research tools)

- Compile baseline socioeconomic and environmental data.
- Identify target groups at local level.
- Identify research tools/guidelines/questions.
- Identify key contacts at local, meso, macro levels.
- Review policy frameworks in place.
- Review existing literature/publications.
- Get research clearance.

Phase II Field Work/ Local/Meso Level Assessment

16 Days (13 days in the field, 3 days interpretation of results)

- Grassroots level analysis
 - Capture local level dynamics (community, village government).
 - Visits to District and Regional offices.

Output I: Interpretation of results at field level

Phase III National Level Assessment

8 Days (5 days research/interviews, 3 days synthesis)

- Interviews and research with National offices, bringing local/meso level experience including identified obstacles/questions.
- Utilize government and EC contacts as needed (identified at the beginning of the consultancy by REMA).

Output II: Interpretation of results at national level

Phase IV Write first draft Analysis and Interventions/Recommendations

4 Days writing draft report

- Utilizing the previous two outputs, write a synthesis report of the analysis and interpret results.
- The 3-person research team will produce one final report and presentation of that report.
- Utilizing the *Tool Kit* formulate interventions/recommendations

Output: First draft report with interventions/recommendations

Phase V Outside Review and Final Drafting

4 Days (1 day attending seminar, 1 day responding to reviewers comments, 2 days to write final draft)

- 1 half-day seminar*
- Synthesis report to 2 outside reviewers (2 weeks to respond)
- Research team to address reviewers' comments (1 week to prepare final report).

Output: Final Report (one report prepared by the 3-person research team)

***Participants Include:**

Research Team

REMA (Rose Mukankomeje and Anna Behm Masozera)

WWF-EARPO George Wamukoya

EC representatives (to be identified)

Other government institutions (to be identified)

Background to the study

1.0 Introduction

The European Community's Development Policy's (2000) principle aim is to "refocus its activities to combat poverty" where the "environment...will play an important role supporting the main objective", while the Contonou Agreement (2000) similarly states that activities "...shall be centered on the objective of reducing and eventually eradicating poverty consistent with the objectives of sustainable development..." Despite these commitments, a recent review by the ACP-EU joint assembly – adopted October 2003 - on the "Sustainable management and conservation of natural resources in ACP countries in the context of the 9th European Development Fund aid Programming" indicates that EC development assistance inadequately addresses environmental issues, especially with regard to the critical role that natural resource assets play in alleviating poverty.

This research seeks to provide to the European Commission and its partner developing countries recommendations to address poverty-environmental weaknesses in current Country Strategy Papers (CSPs) and to improve environmental streamlining in EC development strategies through its six focus areas. This research will do so by evaluating the effects of development strategies on local poverty-environment dynamics through: reviewing CSPs on anticipated environmental impacts of EC thematic aid sectors in various countries; conducting multi-level evaluations to determine structural impediments and strategic intervention areas to address poverty-environment weaknesses; and identifying institutional and policy opportunities to strengthen environmental integration in future CSP design.

EC Country Strategies will be reviewed and interviews conducted for 3 countries on the role of natural wealth in alleviating poverty, anticipated environmental impacts, and areas of possible intervention.

Candidate countries for evaluation include Tanzania, Madagascar, Kenya, Vietnam, and Papua New Guinea. To gain a detailed understanding of the environmental consequences and specific strategic interventions needed to address poverty-environmental concerns, multi-level evaluations will be conducted in 2 countries (of the above 3 mentioned countries). The multi-level evaluations will use a bottom-up analysis to identify the structural impediments operating at local to national levels that reinforce rural poverty and environmental degradation. Follow up reviews will also be conducted in these same countries to evaluate how poverty-environmental concerns - highlighted in the multi-level evaluations - are being addressed in the development strategies. This research will be structured about key poverty-environmental issues on how the proposed EC Country Strategies are anticipated to affect rural poor's livelihoods, their rights to land and resources, their health due to anticipated environmental deterioration, and their vulnerability to environmental disasters. The multi-level evaluations and CSP reviews will result in recommendations to address poverty-environmental weaknesses in EC development strategies.

This study will further identify institutional and policy-oriented changes needed to address poverty-environmental gaps. This activity will rely on document review and interviews with individuals involved in CSP development and their revision. The evaluation will be conducted at EC and country levels (for the same 2 countries in which the multi-level evaluations were conducted) and will build upon current EC environmental integration efforts. Results of this study will be summarized and distributed to raise awareness on the need and opportunities to enhance poverty-environment integration in EC development assistance.

2.0 Significance of the study

Within the specific field of poverty-environment analysis, most recent work has focused on ways that the poor at the local level interact with natural resources as part of their strategies to maintain livelihoods. While this new research has contributed significantly to better understanding the livelihood strategies of the rural poor, seldom are linkages made to specific policy and institutional factors at meso and macro levels.

Over the past 10 years, WWF has given considerable attention to developing and implementing an analytical approach that cuts across these multiple levels. The analytical approach begins at the local level and then works up through a chain of causal factors to link to meso and macro drivers.

This kind of "bottom up" analytical perspective is important for analysis of the poverty-environment impacts of EC Country Strategies by grounding this analysis in a concrete understanding of the real problems and impediments facing the rural poor. This study will use the results of the multi-level analysis specifically to evaluate likely environmental impacts of EC development programmes and will provide recommendations to EC and partner developing countries on ways to improve poverty-environmental performance. While a growing number of studies have assessed the poverty-environment impacts of non-EU development policies (e.g., of the World Bank), none have yet done so for EC development programmes. Even fewer studies have sought to translate the poverty-environment concerns into recommendations for policy and institutional changes to improve resource management and the livelihoods of the rural poor.

3.0 Objectives of the study.

Main objectives:

The overall objective of this research is to enhance the impact of the EC's development assistance on poverty through increased attention to the role of the environment in the livelihoods of the rural poor in its country development strategies. This research seeks to provide to the EC and partner developing countries recommendations to address poverty-environmental weaknesses in current Country Strategy Papers (CSPs) and to improve environmental streamlining in EC development strategies through its six focus areas. More specifically, the objectives of this research are:

- Objective 1: To evaluate the anticipated environmental impacts of proposed EC CSP sector investment areas in select countries and propose strategic interventions that are needed to address the envisioned environmental problems. This assessment will emphasize linkages between natural resource assets and rural poverty and will identify structural impediments, be they economic or institutional, operating at local to meso to macro levels that encourage environmental mismanagement and keep rural areas locked in poverty.
- Objective 2: To evaluate current aid programming processes used to develop and revise CSPs, specifically with regard to environmental integration in the EC focus areas, and identify long term policy and institutional opportunities to improve poverty-environment streamlining to enhance future effectiveness of EC development assistance. This activity will build upon current EC efforts to improve environmental integration (e.g., EC manual development).

How the objectives relate to the theme(s) of the EC-PREP:

The aim of the EC-PREP is to enhance the impact of the EC's development assistance on poverty through support to policy-oriented research, including cross-cutting research on environmental dimensions of poverty. This study seeks to inform the EC and developing countries on poverty-environment dynamics in selected study areas and their relationship to meso and macro policy and institutions in two countries, and will provide detailed recommendations on measures needed to address current poverty-environment problems as well as institutional opportunities to improve long term poverty-environment integration in future EC CSPs.

As noted above, a recent review by the ACP-EU joint assembly indicates that EC development assistance inadequately addresses environmental issues, especially with regard to the critical role that natural resource assets play in alleviating poverty. The research program that we are proposing will review selected country strategy papers for their anticipated poverty-environment impacts and link this to an analysis of major constraints to substantively improve the livelihoods and environmental conditions of the resource-dependent poor in specific rural areas. This program will:

- conduct a bottom-up analysis that links local, meso and macro institutions and economic changes
- draw on this analysis to inform a review of EC Country Strategy Papers, identifying gaps that need to be addressed to affect the problems of resource-dependent rural poor.
- provide recommendations to improve mainstreaming of poverty-environment considerations in the development of CSPs.

How the objectives relate to development work already undertaken in this area:

Despite the reordering of priorities of the international development community to focus on poverty alleviation, comparatively little attention has been given to the central role that the environment and access to environmental goods and services play in poverty alleviation, particularly of the rural poor. The Rural poor have an immediate survival dependence on natural resources from which they derive food, water, energy, housing, medicines, and clothing on an uninterrupted basis. They are more likely to be exposed to deteriorating environmental conditions (e.g., illness due to water pollution) and have fewer means to cope to the consequences of environmental deterioration and natural disasters. Despite considerable growing recognition of poverty-environment linkages, these linkages have seldom been recognized in many pro-poor development policies, including PRSPs. Where these linkages have been mentioned, they have failed to translate such concern into investment programs and policy initiatives to improve resource management and improve livelihoods for the rural poor.

Key hypotheses:

Key hypotheses of this research are:

Hypothesis 1: The roles of natural resource wealth, especially their contribution to rural livelihoods, have been inadequately addressed in EC development programmes. An evaluation of poverty-environment impacts and ways to address these shortcomings is needed.

Hypothesis 2: Long term national to local level institutional and policy changes are needed to help ensure that country development strategies better integrate poverty-environment concerns.

4.0 The study area

The geographical study area in Rwanda is Kibungo Province in southeastern Rwanda.

5.0 Methodology of the Study

A series of linked research activities will be completed by this study as described below:

- *CSP reviews* will be conducted to evaluate anticipated environmental impacts of EC country strategy investment in three countries. The reviews will rely on interviews with experts and staff of relevant local to national institutions and draw on documents such as EC development policies and papers that describe environmental and livelihood impacts of similar programs. This activity is currently being co-financed by WWF EPO and MPO (see Annex 2 under “CSP Reviews”) and will be conducted prior to the start of EC-PREP funding.
- *Multi-level analysis* will be conducted of local poverty-environment dynamics in defined geographical areas within two countries, and the policy and institutional factors shaping them at meso and macro levels. This analysis will be conducted by small, multidisciplinary teams of researchers with oversight and management from WWF in-country offices and WWF-MPO.
- *Follow-up CSP reviews* will be conducted to assess if the Country Strategies are addressing the poverty-environment concerns and required interventions as highlighted in the multi-level case study analyses. This review will be conducted by WWF EPO in conjunction with local offices.
- *Institutional evaluations* will be carried out to identify long term institutional and policy opportunities to improve poverty-environmental streamlining in future CSP design. The institutional evaluations will rely on document reviews and interviews with individuals - at country and EC level - involved in CSP development and revision. This activity will build upon current EC environmental integration activities (e.g., manual development) and will be conducted by WWF EPO.
- *Recommendations* will be drawn based on results from the multi-level analysis and CSP reviews on strategic gaps and weaknesses that need to be addressed in CSPs in relation to environmental dimensions of poverty. Recommendations will also be developed on measures to improve poverty-environmental integration in the process of developing CSPs.
- *Awareness building material* on the need and opportunities to address EC Country Strategy poverty-environment weaknesses will be developed by WWF EPO and MPO. Its distribution will be conducted by the WWF network and by local to national organizations with oversight from WWF EPO and MPO.

Methodology:

Owing to this study’s emphasis on the importance of natural resources assets to the rural poor, this study is fundamentally structured around key **poverty-environment linkages**. These linkages are namely: that poor people’s livelihoods are disproportionately dependent on natural resources; that especially the rural poor fundamentally rely on natural resources and land rights; that poor people are more likely to suffer health consequences from deteriorating environments; and that people living in poverty are more vulnerable to and have fewer means to cope with environmental disasters. This study’s evaluations, including its CSP reviews and multi-level evaluations, are critically based on such poverty-environmental issues.

This study’s methodology furthermore highlights **micro to macro linkages**, particularly higher-level policy and institutional factors shaping local poverty-environment dynamics. Finally, the methodology emphasizes long term approaches to address poverty-environmental weaknesses. This research will

provide recommendations on programs of action needed to address current poverty-environmental weaknesses and on long term institutional and policy changes needed to improve future poverty-environmental streamlining in EC aid programming.

Methodology for Objective 1:

CSP reviews and *multi level analyses* will be used to evaluate anticipated environmental impacts of current CSPs and to identify areas of strategic intervention. The *CSP reviews* will be structured around key poverty-environmental issues described above and conducted in three countries. Criteria for country selection include: representation of EU focal areas and WWF ecoregions; availability of CSPs, and synergies with similar programs. Candidate countries are Tanzania, Madagascar, Kenya, Papua New Guinea, and Vietnam.

Multi-level poverty-environment analyses will subsequently be undertaken to gain a more detailed understanding of structural impediments that are reinforcing (or anticipated to reinforce) rural poverty and environmental degradation in particular localities or subregions. The analysis will assess poverty-environment dynamics at the local level, establish the relationship of constraints to meso-level institutional arrangements, and make linkages to macro policies and institutions. Due to resource constraints, the *multi-level analysis* will be conducted in defined geographical areas within two (of the three above mentioned) countries. This analysis will cut across relevant EU focal areas for that country/locality.

Follow-up CSP reviews will then be conducted in these two countries to evaluate whether the current EC Country Strategies are addressing the poverty-environmental concerns identified in the multi-level analysis. Recommendations will be drawn from results of the multilevel analysis and CSP reviews and distributed to raise awareness on the need to improve poverty-environmental streamlining in EC development assistance.

Methodology for Objective 2:

Institutional evaluations will be conducted to identify policy and institutional opportunities to improve future poverty-environmental streamlining. This evaluation will describe current procedures used by the EC and partner developing countries to integrate environmental concerns in Country Strategies and will account for current efforts by the EC to improve environmental integration. *Recommendations* will be drawn to *raise awareness* on the long term institutional and policy opportunities.

Why the methodology is appropriate to the focus area and project results:

This research fundamentally relies on evaluations structured about *poverty-environmental issues*, acknowledges *multi-level causality and linkages*, and highlights *institutional and process oriented changes*. These approaches have intentionally been used to help ensure that results of this research may translate into long term changes that will improve environmental streamlining in EC aid programming and in turn environmental conditions and the livelihoods of the rural poor.

6.0 Activities.

- 6.1** Collection and collation of baseline information, from relevant institutions and review relevant policy documents
- 6.2** Fieldwork.
- 6.3** Data analysis
- 6.4** Report writing
- 6.5** Presentation of initial results

7.0 Expected Output and Deliverables

7.1 Report submissions.

The consultants shall submit 4 copies of all the expected outputs both in hard copies and on CD-ROM copies. The consultants must also submit 4 copies of an **Executive Summary** of all the major findings and recommendations as stand-alone report both in hard and soft copies on CD. Two copies of the main reports and the Executive summary both in hard and soft copies shall be submitted to WWF.

8.0 Level of Efforts and Expertise Required

This study will require the expertise of scientist with professional knowledge and academic qualification if Masters degree or above. The consultant must have at least over five years of working experience. Details of the level of effort for each team member are included in the illustrative budget but in total, the whole work will take at most 40 days per person.

9.0 Assignment Period and Deliverables

The assignment shall start on **March 14, 2005** and continue for a period of **39 days** including fieldwork. The draft report shall be submitted by **May 6, 2005**, comments will be submitted to consultants one week thereafter. The **FINAL** report shall be submitted to client by **May 27, 2005**. Other deliverables include a short brief on results at field level due **April 15, 2005** and a short brief on results at national level **April 29, 2005**.

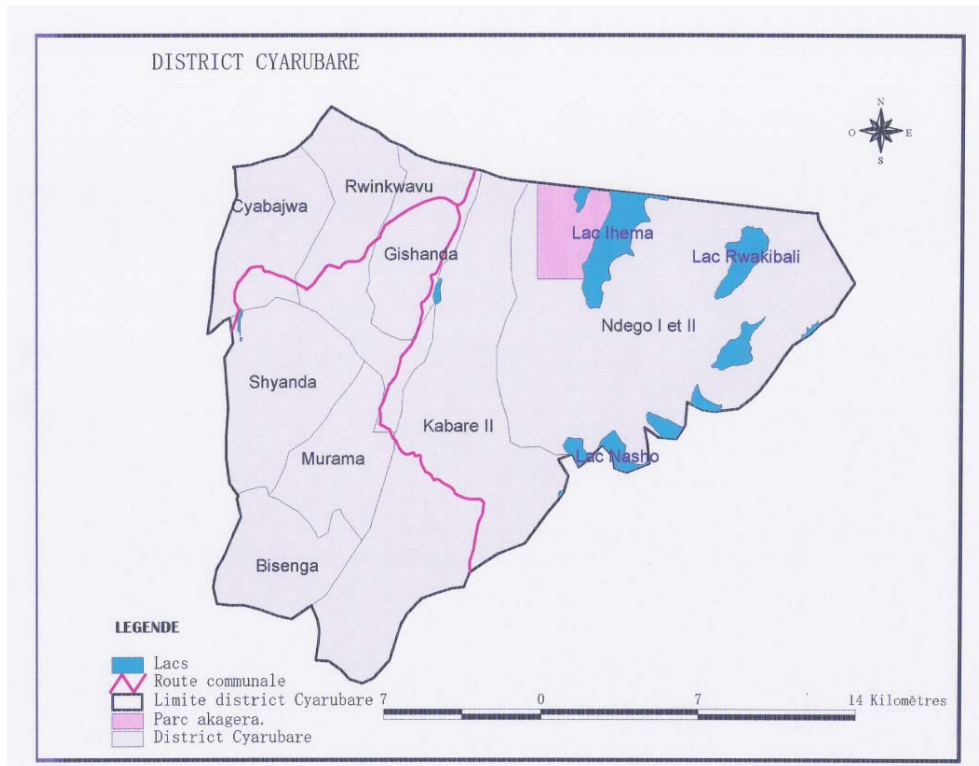
10.0 Oversight

REMA is responsible for facilitating implementation of the study with support from WWF-MPO and WWF-EARPO. The Consultants will therefore report to and work very closely with the research coordinator in REMA.

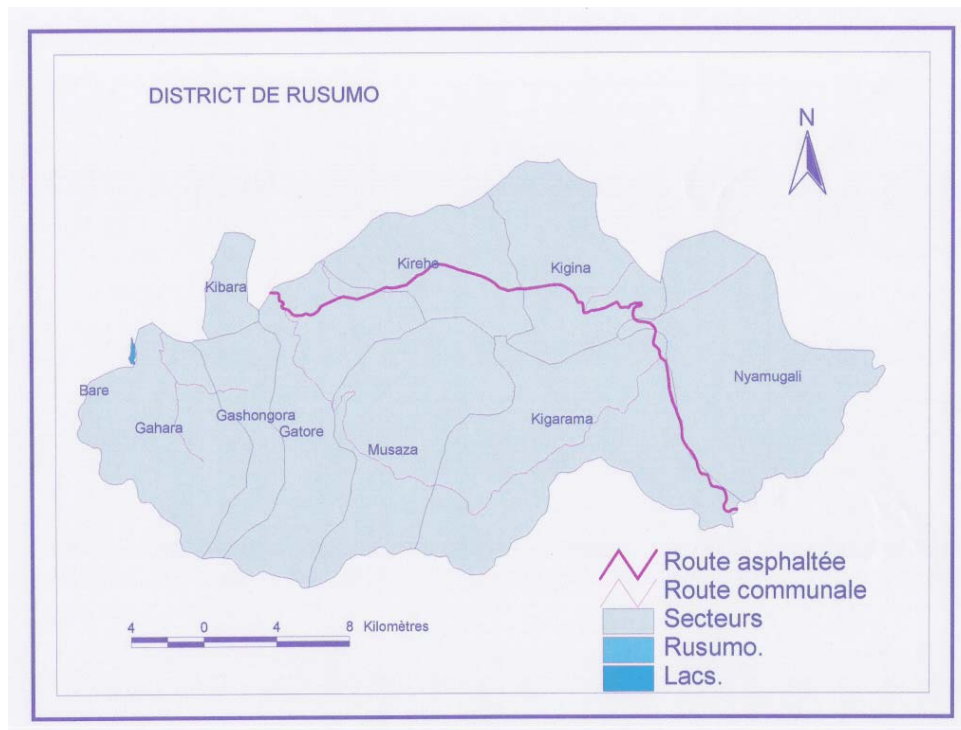
Annex 2. Maps



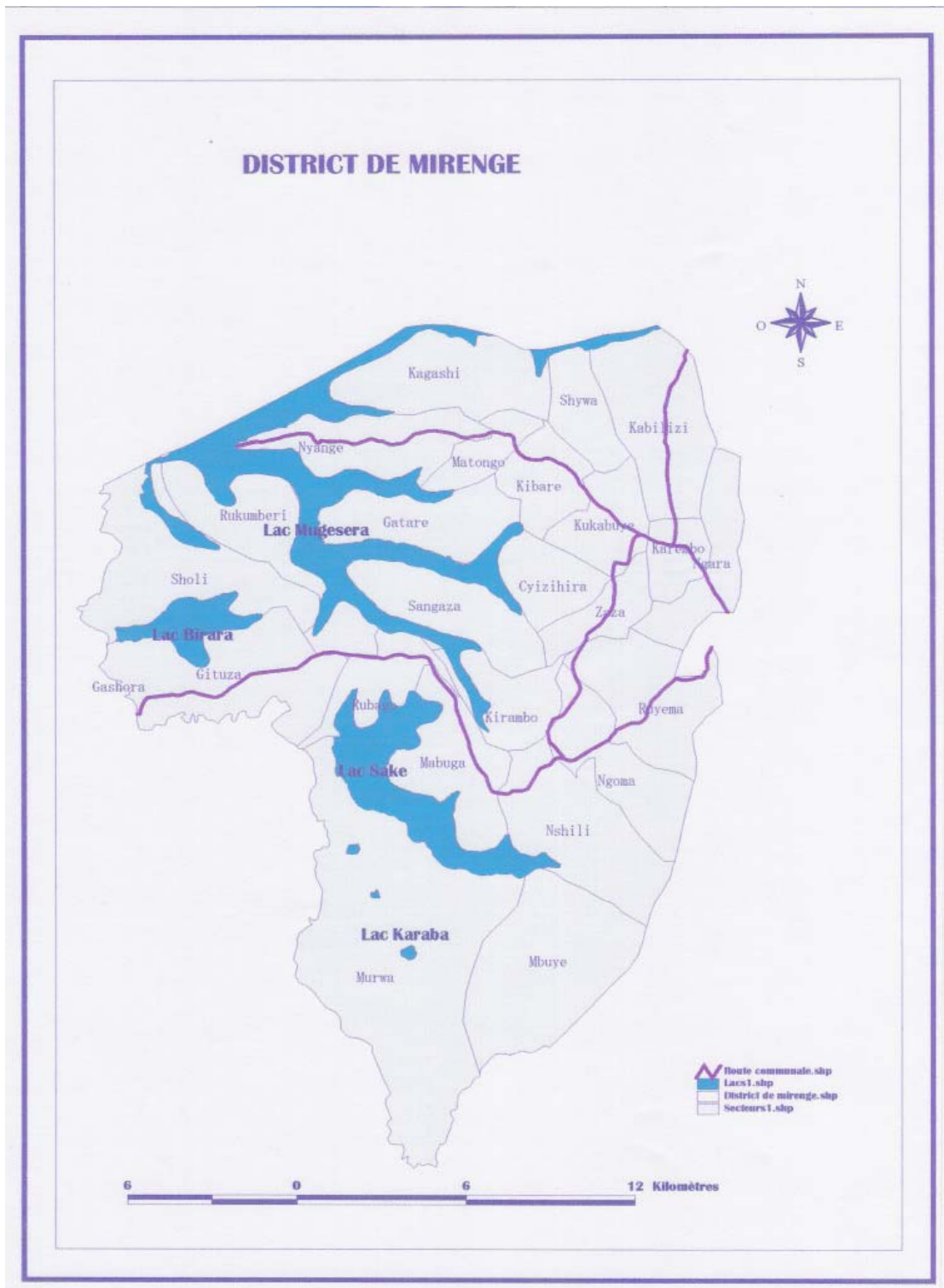
Map 1. Province of Kibungo in southwestern Rwanda. Cyarubare, Rusumo, and Mirenge Districts were chosen for this study.



Map 2. Cyarubare District in Kibungo Province. The Sectors of Murama, Ndego II, and Rwinkwavu were visited in this study.



Map 3. Rusumo District in Kibungo Province. The Sectors of Kigarama, Kirehe, and Nyamugali were visited in this study.



Map 4. Mirenge District in Kibungo Province. The Sectors Mbuye, Nyange, and Ruyema were visited in this study.

Annex 3. Questionnaires

QUESTIONNAIRE FOR COMMUNITY MEMBERS

Date/Time:
Location:

ECONOMIC

1. What natural resources do you use to earn a living?
2. What are the main activities undergone to generate income from those resources?
3. What are the environmental consequences of these activities?
4. How does the environment contribute to reduce the poverty? (positive impact)
5. What are the economic opportunities of natural resources?
6. What are the main environmental constraints to reducing poverty in your area? List top three...
7. What are the socio- economic consequences on your daily life because of these constraints?
8. What must be done to alleviate poverty relative to the existing resources?(solutions, propositions)

SOCIAL

1. What is the social history of the land?
2. What is the division of labor of men and women?
3. What are the social consequences of environmental degradation?
4. What is the role of men and women and youth in decision-making at the local level?
5. How are common resources shared between and among communities?
6. What is the linkage between local community, institutions, and CDC?
7. What are the mechanisms of arbitration mechanisms between and among communities?
8. What are your sources of information on environmental issues?

POLICY

Men and Women separate:

1. Who owns the environmental resources? (wetlands, forest, etc.)
2. How is access to national/environmental resources allocated?
3. How is technical advice for agriculture, engineering, and water supply management provided to you?
4. Do you know any laws governing the use of environmental resources?
5. Who enforces these laws?
6. How well do you think your concerns are represented to the commune/sectorCDC?
 - a. Poor
 - b. Ok, but could be better
 - c. Good
 - d. Excellent
7. What are your key environmental concerns?

QUESTIONNAIRE FOR THE SECTOR LEVEL

Interviewer	Date/Time
Interviewee:	Location:
Position	
Comments:	

N o	Question	Response
1	What are the general problems for your sector?	
2	What is the current state of environment in your sector?	
3	How do you plan and budget your projects?	
4	What projects do you envision?	
5	Who owns the environmental resources? (Wetland, forest etc.)	
6	How is access to natural/environmental resources allocated?	
7	How is technical advice for agriculture, engineering, and water supply management provided to you?	
8	Do you know of any laws governing the use of environmental resources?	
9	Who enforces these laws?	

10. How well do you think your concerns are represented to the commune/sector/CDC/District level?

1. Poor 2. OK but could be better 3. Good 4. Excellent

Policy and Institutional Questionnaire (District, Province, National)

Interviewer	Date/Time
Interviewee: Name	Location:
Position	Level: District Province National
Comments:	

Question	Response
What are the general problems for your jurisdiction?	
What is the current state of environment in your jurisdiction?	
How do you plan and budget your projects?	
What projects do you envision for CDC funding?	
What are the responsibilities of your organization toward the environment?	1. Enforcement of law. 2. Awareness of regulations. 3. Reporting of breeches to other authorities. 4.Other
How often does the group meet?	1 weekly 2. Biweekly 3. Monthly 4. Bimonthly 5 quarterly 6. Biannually 7. Annually 8. Other
Who is invited?	
Where is the meeting held?	
What is the procedure for addressing breeches of environmental regulations/ law enforcement?	
How do you find out about environmental laws and regulations?	
Where do you get resources to conduct your activities?	
Are the resources....?	1.Very good 2. Too little 3Adequate

Have you received any environmental training? What was it?	
Was it...?	1.Very good 2. Too little 3Adequate
What sort of additional training do you think you need?	
How is technical support for agriculture, engineering, water supply management provided at this level?	
What are the key environmental concerns in the area?	

How do you prioritize them?

Issue	1	2	3	4	5	6	Score
6							
5							
4							
3							
2							
1							

How well do you think your concerns are represented Level up and level down?
Community, CDC, Sector, District, Province, National

Organisational Level	Relations with level up	Relations with level down	Comments

1.Poor 2. OK but could be better3. Good 4. Excellent

What are the benefits of decentralisation? <i>Organisational, Institutional, Financial</i>	
What are the drawbacks? <i>Organisational, Institutional, Financial</i>	
What improvements need to be made?	

Annex 4. List of Contacts

District de Cyarubare

Date	Nom et prénom	Fonction
23/03/05	Rwigamba Aimable	Maire de district
23/03/05	Mukamasabo Donata	V/M, chargée de la promotion féminine et gender
23/03/05	Nyirimanzi J.Bosco	Agronome de district
24/04/05	Nzabanita Claude	Coordinateur du secteur Murama
28/04/05	Bimenyimana Livingston	Coordinateur du secteur Ndego II
28/04/05	Kayitare Phocas	Président du CDC/Ndego II
29/04/05	Bizimana J.Pierre	Executive Secretary for Rwinkwavu Secteur

District de Rusumo

Date	Nom et prénom	Fonction
30/04/05	Ntabyera Emmanuel	Maire de district
	Kanamugire P.Claver	V/M, chargé des affaires sociales
	Mungarurire Bejamin	V/M, chargé de la jeunesse
	Nzeyimana J.Damascène	Agronome forestier
31/03/05	Twizerimana Eliezer	Coordinateur du secteur Kirehe
01/04/05	Seramuka Etienne	Coordinateur du secteur Kigarama
04/04/05	Bizimungu Théogène	Coordinateur du secteur Nyamugali

District de Mirenge

Date	Nom et prénom	Fonction
05/04/05	Bizimungu J.Baptiste	Maire de district
05/04/05	Kabagwire Claudine	Secrétaire Exécutive du district
05/04/05	Sibomana Emmanuel	Agronome de district
05/04/05	Nyiraneza Espérance	V/M, chargée de la promotion féminine et du gender
05/04/05	Nyirinshuti Etienne	V/M, chargé des affaires sociales
06/04/05	Kayibanda Faustin	Coordinateur du secteur Mbuye
08/04/05	Sindikubwabo Théogène	Coordinateur du secteur Nyange
08/04/05	Nyirantibumva Donata	Secrétaire Exécutive du secteur Nyange
11/04/05	Nsabiyaremye Cassien	Coordinateur du secteur Ruyema

Province de Kibungo

Date	Nom et prénom	Fonction
	Ntabana Innocent	Préfet de la province de Kibungo
	Bosenibamwe Aimé	Secrétaire Exécutif de la Province
	Mukwiye Martin	Professionnel de l'environnement et des forêts
	Munyarusisiro Norbert	Chargé de l'appui à la décentralisation (GTZ)

National Level

Name	Title	Institution	Date (2005)
Eddy DELAUNAY-BELLEVILLE	Programme Officer (Rural Economy, Food Security, Decentralization, and Environment)	European Commission	April 14
Alessandro VILLA	Counsellor- Head of State (Rural Economy, Food Security, Decentralization, and Environment)	European Commission	April 14
Rose MUKANKOMEJE	Director General	REMA	April 14
Vincent GAHAMANYI	Project Analyst	CDF- MINALOC	April 15
Willy NDIZEYE	Project Analyst	CDF- MINALOC	April 15
Claudien HABIMANA	Director of Forests	MINITERE	April 19
Suzanne UWIMANA	Director of Environment	MINITERE	April 19
Bruno MWANAFUNZI	Director of Water	MINITERE	April 19
Earnest RWAMUCYO	Director of Strategic Planning Unit (PRSP)	MINECOFIN	April 20
Leslie BLINKER	Project Manager, DEMP	MINITERE/UNDP	April 22
Teobald MASHINGA	Head of Compliance and Enforcement Unit	REMA	April 25
Lillian KUMANZI	Head of Information	Bureau of Standards/ MINICOM	April 25
Eugene RURANGWA	Director of Lands	MINITERE	April 26
Fidele RUZIGANDEKWE	Executive Director, Rwanda Wildlife Authority	ORTPN	April 28
Telesphore NGOGA	Community Conservation Manager	ORTPN	April 28
Innocent BIZIMANA	Director of Planning	MINITERE	May 3

Presentation Participants on May 13, 2005 at NOVOTEL:

1. Gahamanyi Vincent, CDF
2. Kabera Juliet, MINITERE
3. Rwabutogo Joseph, MINITERE
4. Gerard Frank, REMA
5. Dusabeyezu Sébastien, REMA
6. Mangaran Francis, MINITERE
7. Rudasingwa Laurent, UNDP
8. Delaunay-Belleville Eddy, EC
9. Villa Alessandro, EC
10. Ntabyera Emmanuel, Mayor of Rusumo
11. Twagirayezu Innocent, GTZ
12. Bizimungu Jean Baptiste, Mayor of Mirenge
13. Rwigamba Aimable, Mayor of Cyarubare
14. Mukankomeje Rose, REMA
15. Gahamanyi Christine, ORINFOR

Annex 5. Recorded Results from Communities

1. Secteur MURAMA (District Cyarubare)

Aspects	Terre	Forêts	Eau	Marais/District
1. Caractéristiques principales (état de la situation)	<ul style="list-style-type: none"> - Terres dénudées par une sécheresse endémique et sans boisements ; - Végétation de savane à proximité du parc de l'Akagera (localisé dans l'ancienne délimitation du parc) - Peuplement récent (trois vagues : les années 70, 80, et 97) - Parcelle d'environ 0,5 ha chacun 	<ul style="list-style-type: none"> - déforestation massive et très peu de boisement public (à peine 4 ha environ) 	<ul style="list-style-type: none"> - Pas d'eau (pas de pluies ni rivières ni lac) sauf quelques sources 	<ul style="list-style-type: none"> - 4 grands marais dont trois sont aménagés - Murama : 2 petits marais (Rugazi et Rwagasagura) qui ne sont pas aménagés.
2. Activités exercées	<ul style="list-style-type: none"> - Agriculture (surtout sorgho) - Elevage (surtout caprin) - Construction de maison (briques adobes) 	<ul style="list-style-type: none"> - Activités pratiquement éteintes sur la ressource bois 	<ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> - Agriculture en trois saisons par les Associations uniquement
3. Out put et Trend	<ul style="list-style-type: none"> - rendement agricole très faible à cause du manque de pluies - Trend : - Passé : « 2 Ibigega »(7 sacs) - Actuel : environ 2 sacs sorgho - important cheptel caprin (<i>principale source de revenus actuellement</i>) 	<ul style="list-style-type: none"> - Out put nul actuellement - N.B. : le manque d'eau (fabrication de briques adobes) a accéléré la disparition des boisement due à la construction des maisons (repeuplement) 	<ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> -
4. Droit de propriété et Accès	<ul style="list-style-type: none"> - peuplement par l'Etat d'émigrés venus d'autres provinces (années 70) - achat des parcelles par de nouveaux arrivés (années 80) et morcellement des terres ! - partage des parcelles par l'Etat après 1994 et habitat regroupé sur des parcelles égalitaires 	<ul style="list-style-type: none"> - Plus aucun accès car disparition de la ressource 	<ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> - Accès autorisé par l'autorité locale pour les associations
5. Conseils techniques	<ul style="list-style-type: none"> - structures organisationnelles de l'Etat - un seul agronome du District (en conclusion : peu encadré) 	<ul style="list-style-type: none"> - Conseils de l'autorité locale à reboiser, mais plusieurs contraintes 	<ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> - aucun

6. Problèmes et conséquences	<ul style="list-style-type: none"> - érosion et dégradation des sols - forte diminution des pâturages pour bovins <p>Conséquence évidente : <i>davantage de pauvreté</i></p>	<ul style="list-style-type: none"> - déforestation massive (repeuplement) et raréfaction du bois de chauffe : longs trajets vers secteur Ndego - réduction des précipitations (depuis 1994) - érosion sur les terres 	<ul style="list-style-type: none"> - beaucoup de conséquences : etc... 	<ul style="list-style-type: none"> - dégradation des marais due aux bananerais (cultures pérennes)
7. Stratégies d'adaptation	<ul style="list-style-type: none"> - élevage de caprins : principale source de revenu - servir de main d'œuvre pour les voisins mieux lotis 	-	-	-
8. Conflits/litiges sociaux	<ul style="list-style-type: none"> - quelques litiges des parcelles. De plus les familles nombreuses se sentent lésées. 	-	-	-
9. Contraintes	<ul style="list-style-type: none"> - manque de pluies - étroitesse des terres à cultiver - insuffisance de moyens (1 agronome/ district) - termites 	<ul style="list-style-type: none"> - termites (reboisement et cultures) 	<ul style="list-style-type: none"> - Pas de sources d'eau 	<ul style="list-style-type: none"> - Non aménagement des marais
10. Solutions/proposit°	<ul style="list-style-type: none"> - engrais minéraux (fertilisation des terres) - lutte contre l'érosion - reforestation - lutte contre les termites - foyers améliorés - création d'emplois non agricoles - captage d'eau des toitures 	<ul style="list-style-type: none"> - vulgarisation des foyers améliorés ou énergies alternatives - reboisement 	<ul style="list-style-type: none"> -adduction d'eau - forage dans nappes phréatiques 	<ul style="list-style-type: none"> - Aménagement des marais

2. Secteur NDEGO II (District Cyarubare)

Aspects	Terre	Forêts	Eau	Marais
1. Caractéristiques principales (état de la situation)	<ul style="list-style-type: none"> - Terres marquées par une sécheresse endémique (trois ans sans pluies suffisantes) depuis plusieurs décennies - Végétation de savane à proximité du parc de l'Akagera - Repeuplement récent et massif dans une zone limitrophe du parc : <i>déboisement pour cultiver</i> , <i>construire les maisons et vendre du charbon</i> - Réduction rapide des parcelles (2 ha pour le installés en 1997, 1 ha pour tous en 1998) - terres fertiles en cas de pluies 	Quelques forêts galeries près du parc de l'Akagera	<ul style="list-style-type: none"> - Plusieurs lacs poissonneux mais interdits d'exploitation à la population - pas d'adduction d'eau potable (usage des eaux lacustres) - eaux de pluies rares 	Presque pas de marais « hari inkuka ya l'Etat » à proximité du lac Ihema
2. Activités exercées	<ul style="list-style-type: none"> - Agriculture (surtout sorgho) - Elevage (surtout bovin) - Construction de maison (briques adobes) 	Déforestation pour : <ul style="list-style-type: none"> - agriculture - charbon - charpente 	<ul style="list-style-type: none"> - pas de pêche pour la population (plutôt enrichissement des riches de Kigal – SOPEM) - activité d'adduction d'eau en cours - 	-
3. Out put et Trend	<ul style="list-style-type: none"> - Rendement agricole très faible à cause de : i) manque de pluies ii) espace cultivable iii) animaux prédateurs from parc iv) l'herbe kura isuka <p>Trend : pas de passé, anciennement parc, nouvellement habité depuis 1997</p>	-	-	-
4. Droit de propriété et modalités d'accès	- peuplement par l'Etat d'anciens et nouveaux réfugiés en 1997	- Accès massif et anarchique quoique interdit	Droit d'exploitation des lacs accordée par l'Etat à la seule Société ...	-
5. Conseils techniques	<ul style="list-style-type: none"> - structures organisationnelles de l'Etat - un seul agronome du District (en conclusion : peu encadré) - ORPN pour la protection de l'env. - LWF pour les pépinières 	-	-	-

6. Problèmes et conséquences socio-économiques	<ul style="list-style-type: none"> - déforestation massive - sécheresse - diminution du rendement des terres - aller vendre sa force de travail pour les hommes, délaissant sa famille dans une plus grande pauvreté (environ 50%) des chefs de famille <p>En conclusion : davantage de pauvreté</p>	-	<ul style="list-style-type: none"> - amarebe sur Nasho Lac - non accès à la pêche -destruction des ingazi (protégeant les bords du lac) pour les besoins de la construction des maisons- Non accès à la pêche sur Ihema, ni aux poissons pêchés par la Société de Pêche 	Pas d'activités agricoles en saison sèche (insuffisance de marais)
7. Stratégies d'adaptation	<ul style="list-style-type: none"> - servir de main d'œuvre pour les voisins mieux lotis ou dans d'autres localités 	-	-	-
8. Conflits/litiges sociaux	Quelques cas litigieux « kwonesha mu myaka y'abandi »	-	-	-
9. Contraintes	<ul style="list-style-type: none"> - carence des pluies (grande sécheresse) - termites - insuffisance de ressources financières et humaines - animaux prédateurs 	-	<ul style="list-style-type: none"> - non accès à la pêche et aux poissons - pas de sources d'eau 	-
10. Solutions	<ul style="list-style-type: none"> - tranchées de protection contre les animaux prédateurs du Parc - reforestation - lutte contre les termites - irrigation des eaux des nombreux lacs - introduction des cultures à cash crops tel que « Molinga » et résistant à la sécheresse 	Arrêter la déforestation en cours	<ul style="list-style-type: none"> - irrigation des eaux des lacs - accès contrôlé des associations locales à l'exploitation des ressources halieutiques 	-

En conclusion : les particularités du secteur NDEGO II sont :

- migrations récentes sur des sols non exploités auparavant
- climat de forte sécheresse
- non accès aux ressources halieutiques
- destruction des animaux prédateurs en provenance du Parc (faible compensation de l'ORTPN)

3. Secteur RWINKWAVU (Cyarubare District)

Aspects	Terre	Sous-sol	Eau et Marais
1. Caractéristiques principales (état de la situation)	<ul style="list-style-type: none"> - Terres marquées par une sécheresse endémique (trois ans sans pluies suffisantes) depuis plusieurs décennies - Quasi-disparition de la végétation de savane qui préexistait dans cette proximité du parc de l'Akagera - Repeuplement massif en 1997 dans cette zone jadis prospère (années 70) - Réduction rapide des parcelles : 1 ha pour tous en 1997) - terres fertiles en cas de pluies mais, parsemées de géantes et nombreuses termitières 	Présence de gisement (cassitérite) actuellement exploité par une Société Privée qui interdit désormais l'exploitation artisanale sur les zones de l'ancienne REDEMI	<ul style="list-style-type: none"> - Pas d'eau, pas de source, pas de pluies (environ 2 mois par an !) - un seul petit marais qui pourrait être drainé pour irriguer les champs ?
2. Activités exercées	<ul style="list-style-type: none"> - Agriculture - Elevage (surtout caprin) - Construction de maison (briques adobes) 	Exploitation des mines	Agriculture
3. Out put et Trend	<ul style="list-style-type: none"> - Rendement agricole très faible à cause de : i) manque de pluies ii) espace cultivable fortement réduit iii) animaux prédateurs from parc <p>Trend : Passé années 70 : 2 à 5 ha/parcelle Actuel : 1 ha avec une production d'environ 20% du passé</p>	Voir Société Privée, avec : <ul style="list-style-type: none"> - diminution de l'effectif jadis employé dans les carrières - diminution des revenus tirés de l'exploitation minière 	-
4. Droit de propriété et modalités d'accès	- peuplement par l'Etat d'anciens et nouveaux réfugiés en 1997	Autorisation accordée à une seule société privée (processus de privatisation de l'ex-REDEMI)	-
5. Conseils techniques	<ul style="list-style-type: none"> - structures organisationnelles de l'Etat - un seul agronome du District (en conclusion : peu encadré) 	-	-

6. Problèmes et conséquences socio-économiques	<ul style="list-style-type: none"> - déforestation massive - forte diminution des parcelles et du rendement des terres - aller vendre sa force de travail pour les hommes, délaissant sa famille dans une plus grande pauvreté <p>N.B. : <i>forte tendance à l'émigration d'une zone qui ne dispose plus de ressources naturelles pour faire vivre ses habitants</i></p>	Problèmes d'érosion sont apparus sur les anciennes carrières	
7. Stratégies d'adaptation	<ul style="list-style-type: none"> - servir de main d'œuvre pour les voisins mieux lotis ou dans d'autres localités - élevage de caprins 	-	-
8. Conflits/litiges sociaux	Quelques cas litigieux : conflits entre agricultures et éleveurs	-	-
9. Contraintes	<ul style="list-style-type: none"> - carence des pluies (grande sécheresse) - termites - insuffisance de ressources financières et humaines - animaux prédateurs 	-	Difficulté de s'approvisionner en eau
10. Solutions	<ul style="list-style-type: none"> - tranchées de protection contre les animaux prédateurs du Parc - reforestation - lutte contre les termites - introduction des cultures à cash crops tel que « Molvingo » et résistant à la sécheresse - renforcer les pmer hors agricoles 		reforestation

En conclusion : - Cas typique d'une zone dont la forte pression humaine explique la quasi-disparition actuellement observée des ressources naturelles dont les habitants tirent l'essentiel pour vivre. Il ne reste pratiquement plus que :

- une **très petite terre** et non rentable à cause du manque de pluies
- un **sous-sol** qui ne nourrit plus grand monde comme dans le passé

4. DISTRICT DE RUSUMO

Aspects	Terre	Forêts	Eau	Marais
1. Caractéristiques principales (état de la situation)	<ul style="list-style-type: none"> - Grand district et très peuplé - Terres marquées par une sécheresse endémique (rarement plus de 2 mois successifs de pluies suffisantes par an depuis plusieurs années) - Repeuplement par vagues successives dans une zone anciennement peu peuplée : avant les années 70, les années 70 à 94, après 1994 - termites - Réduction rapide des parcelles et faible rendement (surexploitation de la terre) : 0,5 ha par ménage en moyenne - terres fertiles en cas de pluies - habitat regroupé et champs éloignés 	Déforestation massive	<ul style="list-style-type: none"> - pas assez d'eau, mais quelques sources non aménagées - eaux de pluies rares 	Plusieurs marais non aménagés et cultivés anarchiquement
2. Activités exercées	<ul style="list-style-type: none"> - Agriculture - Elevage - Construction de maison 	Déforestation pour : <ul style="list-style-type: none"> - construction des maisons pour les retournées - énergie combustible - terres à cultiver agriculture 	-	Quelques cultures de riz de façon spontanée et des cultures traditionnelles
3. Out put et Trend	<ul style="list-style-type: none"> - Rendement agricole très faible à cause de : i) manque de pluies ii) espace cultivable réduit 			
4. Droit de propriété et modalités d'accès	<ul style="list-style-type: none"> - peuplement par l'Etat d'anciens et nouveaux réfugiés (respectivement en 1995 en 1997) 	<ul style="list-style-type: none"> - Accès massif et anarchique entre 1994 et 1997 (repeuplement) 		Seulement pour les associations agricoles agréées

5. Conseils techniques	<ul style="list-style-type: none"> - structures organisationnelles de l'Etat - 2 agronomes du District (en conclusion : peu encadré) - LWF pour les pépinières 	Pratiquement aucun, sauf instruction interdiction d'accès	-	Aucun
6. Problèmes et conséquences socio-économiques	<ul style="list-style-type: none"> - déforestation massive - sécheresse - diminution du rendement des terres - <i>Inaccessibilité du grand marais de l'Akagera potentiellement riche</i> - élevage en divagation 	<ul style="list-style-type: none"> - manque de bois de chauffe, de construction et probablement la sécheresse qui s'est accrue depuis quelques années 	<ul style="list-style-type: none"> - Grande perte de temps pour aller chercher de l'eau - problème d'arrosage des plants de reboisement 	
7. Stratégies d'adaptation	<ul style="list-style-type: none"> - servir de main d'œuvre agricole pour les voisins mieux lotis et surtout en Tanzanie 	<ul style="list-style-type: none"> - utilisation des végétaux séchés pour la cuisson (feuille de bananiers, arbustes du marais de l'Akagera, etc..) 	-	-
8. Conflits/litiges sociaux	<ul style="list-style-type: none"> Quelques cas litigieux « kwonesha mu myaka y'abandi » - problèmes liés au départage des terres 		Dispute sur les sources aménagées	-
9. Contraintes	<ul style="list-style-type: none"> - carence des pluies (grande sécheresse) - termites - insuffisance de ressources financières (budget de 46 MFRw CDF pour 2005 !) et humaines 	<ul style="list-style-type: none"> - <i>sécheresse et termites qui contrarient les efforts de reboisement</i> 	<ul style="list-style-type: none"> - sécheresse et absence de forêts 	Non aménagement des marais (inaccessibilité)
10. Solutions	<ul style="list-style-type: none"> - activités pmer hors agricoles - reforestation - lutte contre les termites - irrigation des eaux de l'Akagera - introduction des cultures à cash crops tel que « Molvingo » et résistant à la sécheresse - élevage moderne en stabulation - water harvesting (anti-érosive) - énergies alternatives 	<ul style="list-style-type: none"> - Reboisement - Utilisation d'énergies alternatives 	<ul style="list-style-type: none"> - irrigation des eaux de l'Akagera - adduction d'eau - reforestation 	<ul style="list-style-type: none"> - aménagement des marais - conseils techniques pour culture de riz

Spécificités pour les trois secteurs :

KIREHE	KIGARAMA	NYAMUGALI
<ul style="list-style-type: none"> - coût social d'accès à l'eau élevé - relativement moins de sécheresse - élevage de bovins en stabulation 	<ul style="list-style-type: none"> - forte érosion des sols - déforestation massive et terres dénudées - carence marquée d'eau 	<ul style="list-style-type: none"> - pas de sources d'eau - grande sécheresse - vaste marais de l'Akagera non aménagé (accès quasi-impossible)

5. DISTRICT DE MIRENGE

Aspects	Terre et sous-sol	Forêts	Eau et Marais
1. Caractéristiques principales (état de la situation)	<ul style="list-style-type: none"> - Terres marquées par des périodes de sécheresse prolongées - Repeuplement par vagues successives dans une zone anciennement peu peuplée : avant les années 70, les années 70 à 94, après 1994 - termites - Réduction rapide des parcelles et faible rendement (surexploitation de la terre) : 1 ha maximum par ménage en moyenne - terres fertiles en cas de pluies - habitat regroupé - sous-sol riche en kaolin (secteur de Mbuye) 	<ul style="list-style-type: none"> -Déforestation massive - activité de reboisement (pépinière) handicapée par la carence de pluies suffisantes et les termites 	<ul style="list-style-type: none"> - présence de nombreux lacs de cuvette - Plusieurs marais non aménagés et d'accès difficile - lacs en voie d'assèchement (marais de Matongo) et abritant des animaux ravageurs de cultures
2. Activités exercées	<ul style="list-style-type: none"> - Agriculture - Elevage - Construction de maison - Exploitation de carrières de kaolin à Mbuye 	Déforestation pour : <ul style="list-style-type: none"> - construction des maisons pour les retournées - énergie combustible - terres à cultiver agriculture 	<ul style="list-style-type: none"> - activité de pêche traditionnelle sur les lacs ; - transport lacustre sur des pirogues à pagaie ou à moteur électrique - agriculture non contrôlée dans les marais
3. Out put et Trend	<ul style="list-style-type: none"> - Rendement agricole très faible à cause de : i) manque de pluies ii)espace cultivable réduit <p>Trend : la terre s'est morcellée au cours des vagues successives de peuplement, passant d'une EAF de 3 ha à un maximum de 1 ha aujourd'hui</p>	Quasi disparition des forêts (reste quelques boisements domaniaux)	-
4. Droit de propriété et modalités d'accès	<ul style="list-style-type: none"> - peuplement par l'Etat d'anciens et nouveaux réfugiés (respectivement en 1995 en 1997) 	<ul style="list-style-type: none"> - Accès massif et anarchique entre 1994 et 1997 (repeuplement) 	-

Aspects	Terre	Forêts	Eau et Marais
5. Conseils techniques	<ul style="list-style-type: none"> - structures organisationnelles de l'Etat - 2 agronomes du District (en conclusion : peu encadré) - LWF pour les pépinières 	Pratiquement aucun, sauf instruction interdiction d'accès	Pratiquement aucun conseil technique (pas d'agronome)
6. Problèmes et conséquences socio-économiques	<ul style="list-style-type: none"> - déforestation massive - sécheresse - diminution du rendement des terres - Inaccessibilité du grand marais de l'Akagera potentiellement riche - élevage en divagation (sauf relativement à Nyange Sector) 	- manque de bois de chauffe, de construction	<ul style="list-style-type: none"> - Grande perte de temps pour aller chercher de l'eau - problème d'arrosage des plants de reboisement (pas de pluies, mais des lacs souvent éloignés) - sécheresse et absence de forêts Non aménagement des marais (inaccessibilité)
7. Stratégies d'adaptation	- servir de main d'œuvre agricole pour les voisins mieux lotis	- utilisation des végétaux séchés pour la cuisson	-
8. Conflits/litiges sociaux	<ul style="list-style-type: none"> Quelques cas litigieux entre agriculteurs et éleveurs (bétail en divagation et s'alimentent parfois dans les champs des voisins) - problèmes liés au départage des terres 	-	-
9. Contraintes	<ul style="list-style-type: none"> - carence des pluies (grande sécheresse) - termites - insuffisance de ressources financières 	- <i>sécheresse et termites qui contrarient les efforts de reboisement</i>	- Non aménagement des marais
10. Solutions	<ul style="list-style-type: none"> - activités pmer hors agricoles - reforestation - lutte contre les termites - irrigation des eaux de l'Akagera - élevage moderne en stabulation - water harvesting (anti-érosive) - énergies alternatives 	<ul style="list-style-type: none"> - Reboisement - Utilisation d'énergies alternatives - 	<ul style="list-style-type: none"> - irrigation des eaux de l'Akagera - adduction d'eau - reforestation - aménagement des marais - conseils techniques pour culture de riz

Spécificités pour les trois secteurs :

MBUYE	NYANGE	RUYEMA
<ul style="list-style-type: none"> - beaucoup de lacs créés par la rivière Akagera - animaux prédateurs venant du « lac-marais » Matongo - grande carrière de kaolin et subsistance d'une petite superficie de forêt naturelle 	<ul style="list-style-type: none"> - - déforestation massive et terres dénudées - carence marquée d'eau - grande activité de pêche (même par des associations de femmes) - beaucoup de conflits liés aux problèmes des parcelles de terre 	<ul style="list-style-type: none"> - relativement moins frappé par la sécheresse (assez de pluies) - persistance de forêts et boisements (cas rare dans le district !) - grande pauvreté suite à l'étroitesse des parcelles encore fertiles - cultures de café et présence de coltan non exploité

Annex 6. Terms of Reference for Strategic Plan Development

TERMS OF REFERENCE

CONSULTANCY ON THE DEVELOPMENT OF REMA'S STRATEGIC PLAN AND INSTITUTIONAL FRAMEWORK

1. BACKGROUND

Environmental law is an essential tool for the governance and management of the environment and natural resources. After the 1994 war and genocide and the emergency period that followed, Rwanda has committed herself to the principles of sustainable development. As a result of this, the GoR evolved a systematic process of developing environmental legislation which culminated in the approval of the Environmental Bill in 2003 and 2004 by the Senate and Parliament.

In order to ensure that careful and systematic implementation of the law is achieved, the GoR of Rwanda has established the Rwanda Environment Management Authority (REMA). It is the responsibility of REMA as a national regulatory agency to support and facilitate the protection and management of environment in Rwanda. REMA will therefore be required to have a very sound strategic plan with appropriate institutional framework backed with a strong human capital base. In this respect, REMA has identified the need for developing a strategic plan that will serve as a roadmap in pursuance of her mandate.

2. DESCRIPTION OF THE ASSIGNMENT

The main beneficiaries for this assignment will be the all population of Rwanda, entitled to have a better and clean environment. The direct beneficiary will be REMA and MINITERE.

The new Environmental Law clearly states that:

“For the application of this law there shall be created:

- (a) The Rwanda Environment Management Authority, a public establishment endowed with legal personality, financial autonomy and executive powers;*
- (b) The National Fund for the Environment in Rwanda (FONERWA), which shall be the financial organ;*
- (c) An environmental Tribunal which shall be the judicial organ and for conflict resolution; and*
- (d) Provincial and District Committees in charge of environmental matters.”*

The ability of REMA to deliver services and live up to its mandate solely depends on a clearly defined roadmap and on the capacity of its human resource and the mechanisms in place to ensure optimum utilization of the same. This requires a robust organizational structure, clear policies on employee resourcing and rationalized reward system. As a consequence, in order to draw from experiences elsewhere, a need has arisen to have a team constituted by an International Consultant in the field of strategic planning/institutional change with the support of

local consultants to: (i) guide a participatory process of developing REMAs Strategic Plan; (ii) develop appropriate institutional framework and human resources strategy covering such areas such as optimal staffing levels, source of documents for job/person specifications and performance contract; (iii) identify the cross-sectoral linkages that REMA will be required to establish in order to effectively fulfill her mandate at the national and local levels; and (iv) develop a framework for identification of training needs.

The consultant team will work under the supervision and direction of the Director General, Rwanda Environment Management Authority to perform the following functions:

- (i) Review proposed organizational structure for REMA taking into account conflicts, overlaps and gaps and develop an appropriate institutional framework with appropriate optimal staffing levels;
- (ii) Develop appropriate institutional management tools which will outline REMA's policy on appointment, remuneration/reward, promotion, staff appraisal, discipline, severance terms and monitoring and evaluation.
- (iii) Assess the training needs of REMA staff, cross-sectoral agencies and decentralized entities and develop an implementation logframe for training;
- (iv) In conjunction with relevant ministries and development partners, develop a sound strategy for resource mobilization;
- (v) Prepare a five year Strategic Plan for REMA combing all the issues covered under (i) to (iv) above;
- (vi) Discuss the Strategic Plan with MINITERE and other relevant lead agencies especially decentralized entities, development partners and other stakeholders;
- (vii) Present the draft Strategic Plan at a national consensus building workshop (which will be organized by REMA in collaboration with MINITERE); and
- (viii) Submit the final report on REMA's Strategic Plan.

3. EXPERTS PROFILE

A team with an international expert (15 years of professional experience/Category One), team leader, and two national experts (10 years of professional experience/Category 2) will be constituted. The team will have the following expertise:

- (i) Advanced degree in Public Administration, strategic planning or Personnel/Human Resources Management.
- (ii) Hands on experience in the management of Human Resources or Public Affairs or Strategic Planning.
- (iii) Experience in similar assignments and specifically those related to institutional development of Environmental Management Institutions.
- (iv) Excellent communication and reporting skills in English and/or French.

4. LOCATION AND DURATION

The consultancy will take place in Kigali and will be performed within a period of three months implemented as two separate missions of:

- (i) 30 working days for both experts (including travel time for the international expert) to collect materials, consultation meetings with relevant stakeholders, according to steps (i) to (vi) of the assignment.
- (ii) 20 working days for both the experts (including travel time for the international expert), according to steps (vii) and (viii) of the assignment, where the consultant team will present during a national consensus building workshop the draft Strategic Plan.

5. REPORTING

The outputs from the assignment will be:

- (i) A costed Strategic Plan
- (ii) An Institutional Framework and Human Resource Strategy
- (iii) A costed Training Needs Assessment
- (iv) Resource Mobilization Strategy

A draft report in English or French, including all the abovementioned outputs, will be produced in 10 copies at the end of the first mission. The final report, will be finalized before the end of the second mission after receiving the comments from stakeholders and produced also in 10 copies.

Annex 7. Terms of Reference for EIA Guidelines

TERMS OF REFERENCE

CONSULTANCY ON THE DEVELOPMENT OF EIA GUIDELINES, REGULATIONS AND PROCEDURES AND CRITERIA FOR LISTING OF EIA EXPERTS

6. BACKGROUND

Environmental law is an essential tool for the governance and management of the environment and natural resources. After the 1994 war and genocide and the emergency period that followed, Rwanda has committed herself to the principles of sustainable development. As a result of this, the GoR evolved a systematic process of developing environmental legislation which culminated in the approval of the Environmental Bill in 2003 and 2004 by the Senate and Parliament.

In order to ensure that careful and systematic implementation of the law is achieved, the GoR of Rwanda has established the Rwanda Environmental Management Authority (REMA). It is the responsibility of REMA as a national regulatory agency to support and facilitate the protection and management of environment in Rwanda. REMA is obligated to development appropriate environmental tools to support this endeavour. Such tools include EIA/environmental audit guidelines and environmental quality standards among others.

Pursuant to this responsibility, REMA has identified the area relating to the development of the EIA guidelines, criteria for listing individual or firm of EIA experts; a framework for environmental audit to be important priorities in order to implement EIA, now mandatory under the new environmental law.

7. DESCRIPTION OF THE ASSIGNMENT

The main beneficiaries for this assignment will be the all population of Rwanda, entitled to have a better and clean environment. The direct beneficiary will be REMA and MINITERE.

The new Environmental Law clearly states that:

“Every project shall be subjected to prior environmental impact assessment before granting it official approval. It shall be the same for programmes, plans and policies likely to affect the environment. A ministerial order shall provide specific details thereon.”

The import of this section is that there is a necessity to establish a framework and procedures for EIA (new projects), environmental audit (on-going activities) and strategic environmental assessment (policies, programmes and plans). Furthermore, Rwanda has not had the benefit of having an elaborate framework for conducting EIAs. As a consequence, in order to draw from experiences elsewhere, a need has arisen to have a team constituted by an International Consultant in the field of EIA with the support of a local consultant: (i) to guide a participatory

process of developing EIA guidelines, regulations and procedures; and (ii) to develop a criteria for listing individual experts or firm of experts authorized to conduct or prepare EIA studies and reports in Rwanda. This process will not only lead to promulgation of EIA/environmental audit guidelines, regulations and procedures but will also build local capacity in EIA/Environmental Audit for future reviews and improvements as and when necessary. It is also important to note that because of the absence of these guidelines, some investors/developers depending on their country of origin and funding agency, have used a variety of EIA guidelines especially World Bank and those of South Africa.

It is therefore envisaged that under this consultancy national EIA guidelines, regulations and procedures; criteria and procedure for listing EIA experts and environmental auditors authorized to conduct or prepare EIA studies and reports; and a framework and procedures for environmental audits will be developed.

The consultant team will work under the supervision and direction of the Director General Rwanda Environmental Management Authority to perform the following functions:

- (ix) Review the provisions of the Environmental law relating to EIA and develop EIA Guidelines, Regulations and Procedures for promulgation;
- (x) Develop criteria and procedures for listing of individual experts or firm of experts authorized to conduct or prepare EIA studies and reports, respectively;
- (xi) Establish a framework for strengthening institutional capabilities for a good understanding of EIA legislation and regulatory processes and procedures;
- (xii) Develop a framework and procedures for environmental audit;
- (xiii) Discuss the EIA guidelines, regulations and procedures, criteria and procedures for listing EIA experts and the framework and procedures for environmental audit with REMA;
- (xiv) Present the draft EIA guidelines, regulations and procedures; criteria and procedures for listing EIA experts; and the framework and procedures for environmental audit at a national consensus building workshop (which will be organized by REMA); and
- (xv) Submit the final report on EIA guidelines, regulations and procedures; criteria and procedures for listing EIA experts; and a framework and procedures for environmental audits.

8. EXPERTS PROFILE

A team with an international expert (15 years of professional experience/Category One), team leader, and a national expert (10 years of professional experience/Category Two) will be constituted. The team will have the following expertise:

- (v) Advanced degree in Environmental Impact Assessment and Environmental Law.
- (vi) Hands on experience in development of EIA guidelines and procedures and implementation.
- (vii) Experience in similar assignments and specifically in development of environmental management systems.
- (viii) Good communication and reporting skills in English and/or French.

9. LOCATION AND DURATION

The consultancy will take place in Kigali and will be performed within a period of two months implemented as two separate missions of:

- (iii) 20 working days for both experts (including travel time for the international expert) to collect materials, consultation meetings with relevant stakeholders, according to steps (i) to (v) of the assignment.
- (iv) 10 working days for both the experts (including travel time for the international expert), according to steps (vi) and (vii) of the assignment, where the consultant team will present during a national consensus building workshop the draft report on EIA guidelines, regulations and procedures; criteria and procedures for listing of EIA experts; and framework and procedures for environmental audits.

10. REPORTING

The outputs from the assignment will be:

- (i) EIA Guidelines, Regulations and Procedures ready for promulgation.
- (ii) Criteria and Procedures for Listing EIA experts (individuals and/or firms).
- (iii) A costed and targeted training needs assessment on EIA for the implementing agencies, decentralized entities and other supportive sectors.
- (iv) Framework and Procedures for environmental audits.

A draft report in English or French, including all the abovementioned outputs, will be produced in 10 copies at the end of the first mission. The final report, will be finalized before the end of the second mission after receiving the comments from stakeholders and produced also in 10 copies.

Annex 8. Terms of Reference for Environmental Quality Standards

TERMS OF REFERENCE

CONSULTANCY ON THE DEVELOPMENT OF ENVIRONMENTAL QUALITY STANDARDS

1. BACKGROUND

Environmental law is an essential tool for the governance and management of the environment and natural resources. After the 1994 war and genocide and the emergency period that followed, Rwanda has committed herself to the principles of sustainable development. As a result of this, the GoR evolved a systematic process of developing environmental legislation which culminated in the approval of the Environmental Bill in 2003 and 2004 by the Senate and Parliament.

In order to ensure that careful and systematic implementation of the law is achieved, the GoR of Rwanda has established the Rwanda Environment Management Authority (REMA). It is the responsibility of REMA as a national regulatory agency to support and facilitate the protection and management of environment in Rwanda. REMA is obligated to develop appropriate environmental tools to support this endeavour. Such tools include EIA/environmental audit guidelines and environmental quality standards among others.

Pursuant to this responsibility, REMA has identified the area relating to the development of the Environmental Quality Standards which will be the threshold values of the various environmental parameters such as water and air quality, emissions, wastes, noise and pesticides and toxic substances.

2. DESCRIPTION OF THE ASSIGNMENT

The main beneficiaries for this assignment will be the all population of Rwanda, entitled to have a better and clean environment. The direct beneficiary will be REMA and MINITERE.

The new Environmental Law clearly states that:

“Appropriate standards for the protection of the environment must be instituted while standardization and management services for the environment must ensure strict compliance.”

The import of this provision is that REMA must develop environmental quality standards which will enable her to monitor compliance. Furthermore, Rwanda requires environmental quality standards to provide a benchmark for determining the environmental impact. It will be very difficult to approve an EIA study without a threshold value upon which a decision can be made the intervention or activity will have a negative or positive impact or no impact. Thus, standards provide such benchmark. As a consequence, in order to draw from experiences elsewhere, a need has arisen to have a team constituted by an International Consultant in the field of environmental

quality standards with the support of local consultants to guide a participatory process of developing national environmental quality standards for Rwanda. This process will not only lead to the promulgation of environmental quality standards but will also build local capacity to monitor environmental quality standards. It is also important to note that because of the absence of such standards, REMA and other interested and affected parties will have to resort to international standards some of which may be inappropriate for Rwanda.

It is therefore envisaged that under this consultancy, working in collaboration with REMA and Rwanda Bureau of Standards, national environmental quality standards will be developed.

The consultant team will work under the supervision and direction of the Director General Rwanda Environment Management Authority to perform the following functions:

- (i) Develop minimum quality standards in respect to water quality, air quality, noise, waste, ionizing and other radiation, control of noxious smells and pesticides residues in raw agricultural commodities, processed foods and animal feed;
- (ii) Criteria and procedures for the measurement and monitoring of water quality, air quality, noise and sub-sonic vibrations and ionizing and other radiation;
- (iii) Document the analytical methods by which various environmental quality standards can be determined (including criteria for designating analytical and referral laboratories);
- (iv) Establish a framework for strengthening institutional capabilities for a good understanding of environmental quality standards legislation and regulatory processes and inspections;
- (v) Discuss the environmental quality standards with relevant lead agencies especially REMA, RBS among others;
- (vi) Present the draft environmental quality standards at a national consensus building workshop (which will be organized by REMA in collaboration with RBS); and
- (vii) Submit the final report on environmental quality standards.

3. EXPERTS PROFILE

A team with an international expert (15 years of professional experience/Category One), team leader, and a national expert (10 years of professional experience/Category Two) will be constituted. The team will have the following expertise:

- (i) Advanced degree in environmental science especially environmental chemistry or related subject.
- (ii) Hands on experience in development of environmental quality standards and implementation.
- (iii) Experience in similar assignments and specifically in development of environmental management systems.
- (iv) Good communication and reporting skills in English and/or French.

4. LOCATION AND DURATION

The consultancy will take place in Kigali and will be performed within a period of three months implemented as two separate missions of:

- (i) 30 working days for both experts (including travel time for the international expert) to collect materials, consultation meetings with relevant stakeholders, according to steps (i) to (v) of the assignment.
- (ii) 20 working days for both the experts (including travel time for the international expert), according to steps (vi) and (vii) of the assignment, where the consultant team will present during a national consensus building workshop the draft report on environmental quality standards.

5. REPORTING

The outputs from the assignment will be:

- (i) Minimum standards for the various environmental quality standards ready for promulgation.
- (ii) Criteria and procedures for the measurement and monitoring of various environmental quality standards;
- (iii) Document on the analytical methods for determining various environmental quality standards (including criteria for designating analytical and referral laboratories);
- (iv) A costed and targeted training needs assessment on environmental quality monitoring for the implementing agencies, decentralized entities and other supportive sectors.

A draft report in English or French, including all the abovementioned outputs, will be produced in 10 copies at the end of the first mission. The final report, will be finalized before the end of the second mission after receiving the comments from stakeholders and produced also in 10 copies.