

Environment and climate change policy brief- Rwanda, final draft May 22 2013



This brief has been written in March by Olof Drakenberg and Emelie Cesar at Sida Helpdesk for Environment and Climate Change at the request of Per Björkman, Sida Stockholm and Joakim Molander, Embassy of Sweden in Kigali, Rwanda.

This Environmental and Climate Change Policy Brief aims to summarize the key environmental risks and opportunities for Rwanda to inform and stimulate discussions on future Swedish development cooperation.

Summary

Rwanda is highly dependent on natural resources and agricultural growth is critical for pro-poor growth. Given very small land holdings, insufficient investments in soil and water conservation and Rwanda's topography, soil and nutrient erosion is a constraint to agricultural growth and a pressing environmental problem that also affect downstream countries. Climate change is likely to add to

existing pressures including erosion through more intense rains. Conversion of wetlands, due to population displacements and encroachment in search of livelihood options, is another key environmental problem affecting water regulation, water purification, livelihoods and with negative impacts on downstream hydropower generation. Economic diversification, improved soil and water management and increased use renewable energy sources are important for sustainable use of the country's natural resources and resilient communities.

Environment and climate change issues are to a large degree integrated in key planning documents including the EDPRS, Vision 2020 and the National Strategy for Green growth and climate resilience. The latter should be mainstreamed into the on-going preparation of EDPRS II. Political ownership for managing environment and climate change challenges appears to be strong and has received broad recognition internationally. Rwanda is reputed for progress in mainstreaming poverty and environment in planning processes¹. However, ownership within productive sectors is low and implementation remains a key challenge.² Domestic and international funds, including carbon finance are needed to finance the ambitious strategy for green growth and low carbon development. The institutional capacity is improving and there are signs of successful implementation of land reform and programmes for afforestation and soil protection. Despite a number positive steps taken environmental sustainability remains a challenge and it is unlikely that the targets for MDG 7 will be reached in 2015. A number of improvements have been taken to stimulate private investments, not least in the mineral sector. Ensuring that trade-offs between private, short term economic interests and long term public interests is transparently and responsibly managed remains a challenge as the institutional capacity, both at central and decentralized level still is weak.

It is suggested that Sweden should consider mainstreaming environment and climate change in all relevant programs and sectors. Sweden could help to ensure that the private sector is well informed about environment and climate change risks, regulations and opportunities and that civil society is empowered to hold government and business to account. While efforts to increase productivity and value addition in natural resources sectors should be promoted, it is also important to stimulate job creation outside of natural resources sectors to reduce pressure on scarce resources.

Introduction

Rwanda is the most densely populated country in Africa and 45 % of the population live under the national poverty line. Poverty levels have fallen significantly in all regions but most in the Northern Province. The Southern Province remains the area with the highest levels of extreme poverty.³ Rwanda is landlocked and is weakly integrated in the global economy. However since joining the East African Community, Rwanda's trade with neighbouring countries have more than doubled. Population pressure coupled with inadequate management of forests and lands constrain economic growth and slow poverty reduction efforts by lowering agricultural yields and raising energy prices.

Climate change is expected to worsen existing stresses including poverty, land degradation, food insecurity, rising epidemics and natural disasters through rising temperatures and likely increase in rainfall. Recent floods occurred in Musanze, Nyabihu and Rubavu districts in April-May 2011 and the steep hilly topography makes Rwanda particularly vulnerable to landslides.⁴ Rwanda's energy

¹ UNDP-UNEP Poverty Environment Initiative, 2011, PEI annual progress report 2010

² GoR, ENR sector strategic plan final version 7-12-2012.

³ National institute of statistics of Rwanda, 2012, The third integrated household living conditions survey (IECV3)

⁴ Republic of Rwanda, 2011, National Strategy for climate change and low carbon development

security may be at risk since hydropower, which contributes about half of the electricity is vulnerable to greater evaporation and changes in rainfall and impacts of erosion.

1. Which are the key environmental problems, opportunities and their causes?

Key environmental and natural resources problems

Population growth, declining resources and poverty leads to over exploitation of natural resources. The key environmental problems are land degradation, deforestation, wetland and biodiversity loss.⁵ About 40% of land is classified by FAO as high erosion risk with about 37% requiring soil retention measures before cultivation.⁶ Nutrients and eroded soil reach Lake Victoria primarily through River Kagera that accounts for 1/3 of the river inflow in the lake and is a major contributor of water hyacinth infestation.⁷ Rapidly growing urban areas are also creating problems of waste management (including electronic waste), air and water pollution. Another downstream effect is reduced potential for Rwandan hydropower generation due to siltation (reduced water storage) and lower water levels.

Climate change is expected to increase vulnerability to existing stresses mentioned above, thus putting additional burdens notably on the rural poor. Rwanda, highly dependent on rain fed agriculture, existing problems with land degradation, low economic diversification and high poverty rates, is particularly vulnerable to climate change. The NAPA found that the eastern and southern provinces are most vulnerable to drought risks whereas the northern and western provinces are most vulnerable to intensive precipitation, floods and erosion. Expected impacts of climate change include: high degradation of arable land (erosion), desertification trend, lower lake levels and degradation of forests.⁸ There is high certainty about higher temperature and more extreme weather (floods, drought etc) in the future. However, projections on rainfall (number of rain days and timing) are uncertain.⁹ See map of areas prone to multiple climate-related disaster risks in annex I.

Key causes

Land scarcity, population pressure, poverty and lack of alternative livelihood options are main causes for unsustainable use of natural resources. Fallow periods have been drastically reduced and marginal lands, steep hills and wetlands have been encroached in search for agricultural lands and fuel wood. Poorly planned urban settlements and massive urbanisation raise significant challenges for human wellbeing due to insufficient access to basic services for water, sanitation and waste. The waste situation is aggravated by the growing compilation of hazardous e-waste, mobile phones and computers, for which no proper collection system is available. This situation is compounded by disposing untreated liquid and solid waste in ecologically fragile areas e.g. wetlands with severe consequences for human health, wellbeing and the environment.¹⁰

⁵ UNEP, 2011, From post-conflict to environmentally sustainable development

⁶ GoR, 2009 Rwanda State of the environment and outlook, Rwanda environmental management authority (REMA)

⁷ Centre for Resource Analysis, 2006

⁸ National Adaptation Plan of Action to Climate Change

⁹ IPCC, 2007

¹⁰ Republic of Rwanda, 2011, Atlas of Rwanda's changing environment - implications for climate change resilience

Opportunities

Improved management of natural resources are seen in key planning documents like Vision 2020 and the National Strategy for Green growth and climate resilience as a means to increase agricultural productivity, improve food security, reduce dependence on oil imports and adapt to climate change. The potential for exploitation of renewable energy, not least from geothermal sources is significant. Efforts to reduce water and air pollution can also improve employability and reduce health expenditures. Eco tourism is highlighted as an opportunity to increase foreign investments and expansion of a sector that is expected to more than double up to 2020¹¹. Through the operationalization and financing of FONERWA, Rwanda is well placed to attract additional financing from both domestic and external sources, including carbon finance to fund its Green growth and climate resilience strategy.¹²

Rwanda's capacity to attract and absorb funds will in part depend on overall stability and quality of institutions including aspects of human rights and democratic governance. The Rwandan government's involvement in the Democratic Republic of Congo has led to significant changes in development cooperation funding.

2. What are the effects of the environmental risks and opportunities?

Economic growth, environment and natural resources

During the last decade Rwanda has had a remarkable growth rate with an increase of GDP by an average of 8%/year.¹³ Services account for about 50% of the Rwandan economy and the growth in the sector has been fuelled by expansion in trade, transport, telecom and increases in finance and insurance. The Rwandan economy is based predominantly on agriculture although the share has fallen due to growth in nonfarm activities. The main constraint to agricultural growth is severe land scarcity, land degradation and low productivity.¹⁴ Rain fed agriculture employs about 80% of the workforce and contribute to 35% of GDP and 44% of export earnings. Agricultural productivity has gone up due to land consolidation, public and private investments in mechanisation, increased use of fertilizers, promotion of irrigation, livestock and soil protection. The share of households using chemical fertilizers and pesticides increased from 11% and 24% in 2006 to 29% and 31% in 2011 respectively. Ensuring proper use of agrochemicals is important to avoid negative health impacts and pollution of water and soils that reduce the value of the productive asset. Average farm size is 0.7 hectares but more than 60% of households cultivate less than 0,7 hectares and the trend is towards even smaller plots.

Forests could significantly increase its value to the local livelihoods and to the economy for instance if forest management, methods for charcoal production and timber processing is improved.¹⁵ In excess of 60% of forests and 70% of production forests are in private ownership.

There is also potential for extended wildlife tourism, including community based tourism, but support to develop eco-tourism is limited. Currently tourism account for 7.5 % of GDP when indirect impacts are included.¹⁶

¹¹ Republic of Rwanda, 2011, Green growth and climate resilience – national strategy for climate change and low carbon development

¹² A wide range of institutions (government ministries, district authorities, private companies and charities) are eligible for funding. Examples of activities, could include sustainable land use practices, increase forest cover, improve management of water resources, or support sustainable small-scale renewable energy installations in rural areas.

¹³ AfDB, OECD, UNDP, UNECA 2012, African Economic outlook 2012 -Rwanda

¹⁴ UNEP, 2011, From post conflict to environmentally sustainable development

¹⁵ SSC Forestry, 2013, Assistance to the forestry sector development program Rwanda

Rwanda has a relatively small mineral industry yet during 2011 high growth rates in the mining sector was reported (at 40%)¹⁷ and the mineral industry is reported to contribute to 38% of export revenues.¹⁸ However this figure is debated and some reports claim that the figure includes exports of minerals with origin from DR Congo¹⁹. Government plans to increase jobs in mining, from 20,000 in 2011/2012 to 60,000 by 2017/2018, this would require higher growth in total investment in the sub-sector from USD 150 million in 2011/2013 to USD 400 million by 2017/2018.²⁰ The drive to increase mining activities, both artisanal mining and larger scale mining activities entails risks and opportunities that need to be managed. Mining is an environmental risk as it demands high energy and water consumption and impose a negative impact on the surrounding environment and biodiversity through emissions (to air, water and soil). Alternative livelihoods and private sector development (manufacturing, mining, ICT, tourism) are to be generated in part through investments in transport network and improved energy supply.

The cost of climate change has been estimated to about 1% of GDP²¹. Ultimately, the costs of climate change to Rwanda will heavily depend on the success of global mitigation and the country's adaptive capacity.

Population, poverty, health and conflict

Rwanda's population is estimated at 11,7 million with an annual growth of 2,7 %. About 45 % of the population are living below the national poverty line with large regional disparities. The highest poverty rates are found in Southern Province. In Kigali, the poverty rate is about 7,8% and like other urban areas the city is rapidly growing. One third of Rwandan households reported being adversely affected by environmental problems.²² Most often mentioned were erosion, reduced soil fertility, and destructive rains; the latter had a stronger impact on urban dwellers. Coverage rates for safe water supply have increased between 2005-6 and 2010/11 from 70% to 74%.²³ 75% of households have access to sanitation, whereas the situation in rural areas has improved with close to 18% points, mostly explained by the transition from unimproved to improved latrines.

¹⁶World Travel and Tourism Council, This refers to direct and indirect contribution of tourism.

¹⁷AfDB, OECD, UNDP, UNECA 2012, African Economic outlook 2012 -Rwanda

¹⁸ Republic of Rwanda, 2011, Green growth and climate resilience.

¹⁹ NGO reports suggest that this figure is inflated as it includes illegally imported minerals from DR Congo that are exported from Rwanda (see for example Bafilemba et al (2012). According to a SIPRI report, (De Koning, 2011) Rwandan domestic production statistics are "likely to include legal and illegal imports from DRC as processed minerals automatically are registered as Rwanda country of origin."

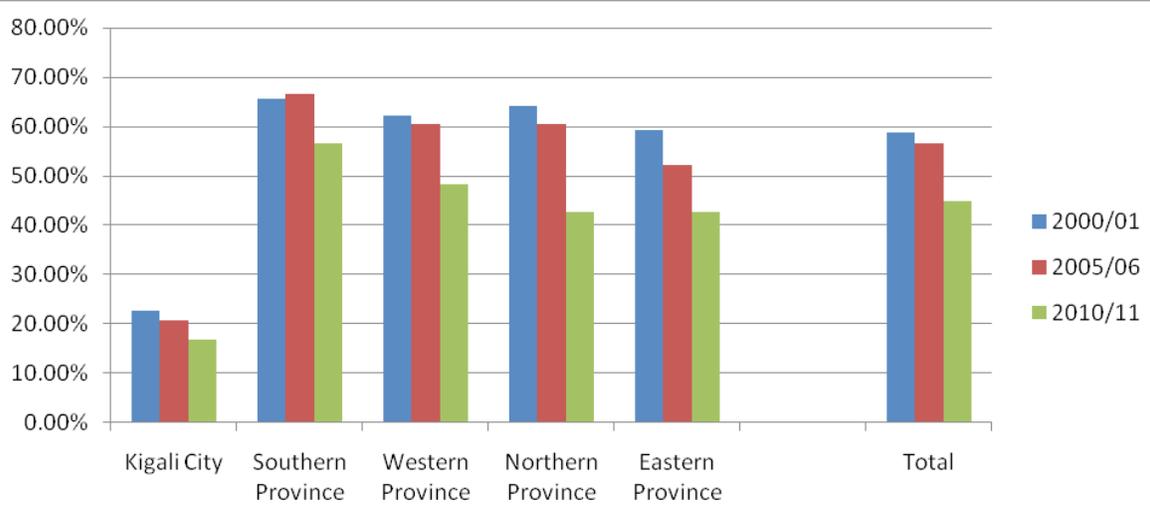
²⁰GoR, 2012, Five year strategic plan for the environment and natural resources sector plan, Ministry of natural resources, Final version 7-12-2012

²¹ Stockholm Environment Institute, 2009, Economics of climate change in Rwanda

²²National Institute of Statistics of Rwanda, 2012, The third integrated household living condition survey (EICV3)

²³ National Institute of Statistics of Rwanda, 2012, The third integrated household living condition survey (EICV3)

Regional changes in poverty in Rwanda
2000/01201011



Source: National Institute of Statistics, 2012

Unsustainable use of natural resources and pollution tend to affect women more than men. Over 94 % of Rwandans depend on wood fuel for domestic energy and the demand for fuel wood outweighs the supply. Women often spend longer hours to collect fire wood and water as resources decline and are more exposed to indoor air pollution (respiratory diseases). In Rwanda, about 30 000 deaths annually are attributed to poor water quality and hygiene (57%), indoor air pollution (42%) and outdoor air pollution (1%).²⁴ The table below shows of figures for Rwanda, Kenya and Uganda for comparison.

Table 1. Estimated deaths and DALYs²⁵ attributable to selected environmental risk factors

WHO estimates	Water Sanitation & Hygiene	Indoor air pollution		Outdoor air pollution	
Country	Diarrhoea DALYs/1000 capita per year	Deaths/year	DALYs/1000 capita per year	Deaths/year	DALYs/1000 capita per year
Kenya	24	14 300	13	600	0,2
Rwanda	62	12 500	46	300	0.6
Uganda	35	19 700	23	100	0,1

Source: WHO (2009)

Poor health due to polluted water and air reduce employability and participation in education, especially for the poor.

Natural resources scarcity is perceived to have contributed to the genocide in 1994.²⁶ Land disputes are frequent, but the land reform and efforts to mediate conflicts have contributed to fewer

²⁴ WHO, 2009

²⁵ Disability-adjusted life year (DALY) is a measure of overall disease burden, expressed as the number of years lost due to ill-health, disability or early death.

conflicts. In the past five years the number of people that have migrated due to conflict or disaster is lower than in the previous five year period.²⁷ Abundant natural resources in neighbouring countries, particularly Democratic Republic of Congo (minerals, forests) has provided a motivation and the means for perpetuating conflict in the Great Lakes.²⁸ The problem of minerals conflict is essentially a problem of security rather than one of informal or illegal trade. Measures to stop illegal smuggling and certification/tagging systems has improved the situation but according to recent reviews smuggling continues and Rwanda is criticized for exporting minerals from DR Congo.²⁹

Furthermore, insecurity and weak governance in DRC has implications for other natural resources as well. A recent report for WWF reveals that 60 000 cubic meters of timber from DRC entered into neighbouring countries like Uganda, and Rwanda without paying proper taxes.³⁰

3. What are key actors doing to manage the Environmental risks and opportunities and to what extent are responses implemented?

National development plans and institutional capacity

An enabling environmental governance framework has been created at the institutional, policy and legal levels. This is part of the overall strengthening of public sector management systems including compliance with international best practice in budget credibility, transparency and comprehensiveness and improvements in governance indicators like government effectiveness, regulatory quality and control of corruption.³¹ New laws to liberalise media and grant access to information have been enacted. However the indicator for voice and accountability, show no sign of progress between 2004 and 2011³² and freedom of expression and political space are severely restricted according to a number of NGO's and organisations³³

To be efficient the environmental governance systems requires sustained capacity-building, technical and financial assistance.³⁴ Integration of environment and natural resources management was significantly improved in the first EDPRS, and consecutively in Vision 2020 (2009) and the Green growth and climate resilience strategy (2011). According to UNDP-UNEP Rwanda has been very successful in mainstreaming poverty environment issues in government plans and procedures³⁵ and the president's leadership on green economy has been praised by UNEP. Prospects for integration in EDPRS II appear to be substantial. Table 1 show environmental challenges related to the Vision 2020 pillars.

²⁶Homer-Dixon, 1996, Ohlsson, 2001

²⁷National Institute of Statistics of Rwanda, 2012, The third integrated household living condition survey (EICV3). Conflicts over land are among the most frequent causes of complaints with the Ombudsman.

²⁸De Koning, R., 2011, Conflict minerals in the democratic republic of the Congo – aligning trade and security interventions, SIPRI policy paper 27

²⁹Bafilemba et al, 2012, From Congress to Congo – turning the tide on conflict minerals, closing loopholes and empowering miners, The Enough project

³⁰The Observer (Kampala) 27 November 2012

³¹AfDB, OECD, UNDP, UNECA, 2012, African Economic Outlook, Rwanda

³²World Bank, 2013, World Worldwide governance indicators, 2004-2011

³³Human Rights Watch, 2012, World Report 2012: Rwanda, Freedom House, Freedom of the Press 2012, Rwanda, Amnesty International, 2012, Rwanda

³⁴UNEP, 2011, From post conflict to environmentally sustainable development

³⁵UNDP-UNEP Poverty Environment Initiative, 2011, Annual progress report 2010;

<http://www.unep.org/wed/2010/english/news.asp>

Vision 2020 Pillars	Targets with Environmental Challenges
1. Good governance and a capable state	Efficiency in deploying scarce resources
2. Human resource development and a knowledge based economy	Malaria and other potential epidemic diseases controlled
3. A private sector-led economy	Facilitate creation of 1.4 million jobs outside agriculture at the estimated 13 million population level in 2020
4. Infrastructure development	Consumption of wood to decrease from the current 94% (in 2000) to 50% of national energy consumption by 2020
	Grouped settlements (IMidugudu) based on economic activity equipped with basic infrastructure and services serve as an entry point into the development of non-agricultural income generating activities
	Land consolidation to create adequate space for modern and viable farming
	Proportion of those living in towns and cities will increase from 12% to 30% (from 5% in 1995)
	Consumption of wood to decrease from the current 94% (in 2000) to 50% of national energy consumption by 2020
	Rural and urban areas to have sufficient sewerage and waste disposal systems
	Each town to be endowed with an adequate unit for treating and compressing solid wastes for disposal
5. Productive and Market Oriented Agriculture	Households to master and practice good hygiene and waste disposal
	Use of high yielding varieties and intensive input use, especially fertilizers
6. Regional and International Economic integration	Environmental control measures to halt the decline in soil fertility
	Consolidate Rwanda's niche in services and communication sectors and take advantage of growing regional cooperation in the Great Lakes/ Eastern African Region through Export Processing Zones, coupled with the industrial reforms

Source: Republic of Rwanda, 2011, Atlas of Rwanda's changing environment

The draft Environment and natural resources sector strategy 2013-2016 is well written but financing is unclear. The Public Environmental expenditure review made in 2009 found that investments in environmental sustainability and climate change were “seriously underfunded”, 1,8% of total public budget expenditures.³⁶

Examples of progress:

-Between 2005 and 2010 the forested area has increased by 2,4% annually.³⁷ . The launch in 2011 of the Rwanda's Forest Landscape Restoration signals a political interest to invest in sustainable management of forest resources. While protected areas have more than doubled in the post -conflict period there has been a significant decline in wildlife populations and a substantial downsizing in the overall protected area network.³⁸

-Deforestation and conversion of wetlands such as Rugezi-Burera-Ruhondo significantly contributed to lower water flows in rivers and reduced capacity of the Ntaruka and Mukungwa hydropower stations. The Government responded with actions to rehabilitate the wetland by promoting agricultural and watershed management measures including erosion control measures, plantation of trees and promotion of non-farm activities. The hydro power plant has returned to full operational capacity.³⁹

³⁶ Glocom, 2009, Public expenditure review for environment to support PEI in Rwanda. The 1,8 per cent of budget expenditures for environment in 2008 can be compared to 0,2 % in 2003.

³⁷ FAO, 2010 Global Forest Resources Assessment.

³⁸ UNEP, 2011, From post-conflict to environmentally sustainable development

³⁹ WRI, 2011, World Resources Report, Maintenance of Hydropower Potential in Rwanda Through Ecosystem Restoration

-Implementation of the land tenure regularization program indicates a large impact on investment and maintenance of soil conservation measures and improved land access for women.⁴⁰

-Legal provisions for Environmental Impact Assessment and Strategic Environmental Assessment. However, only 10% of projects that require EIA are compliant to EIA conditions which mean that the intention of the policy is only marginally fulfilled due to weak law enforcement mechanism.⁴¹

-The integration of environment and climate change as cross cutting issues in strategic documents such as the EDPRS II and as a result the inclusion of the issues in the Budget Call Circular (BCC) on a pilot basis for the productive sectors of Agriculture, Energy and Private sector during the 2010/2011 budget year on a pilot basis and subsequent scale up to other economic and social sectors.

-Establishment of FONERWA ,(Sustainable Financing Mechanism for Environment and Climate change Initiatives in Rwanda). It is a basket fund with various windows and corresponding eligibility criteria and at least 20% of funds target the private sector. Currently, DFID has provided 22 Million GBP (funds announced in April 2013) to the fund in addition to the operational support funds of 1.5 Million GBP for the coming 2 years.⁴²

The main barriers to achieving the ENR sector objectives include; capacity building, a weak Monitoring and Evaluation system⁴³, coordination of civil society and private sector as well as mainstreaming climate and environment issues into national plans. Limited ownership of environmental sustainability and climate change issues particularly in productive sectors reduces national ability to adopt and implement the green growth strategy.⁴⁴

The strong push for agricultural intensification and growth in the mineral sector in government's policies involve large environmental risks and could involve significant downstream effects (erosion and pollution) with impact on livelihoods of downstream communities. Government signals awareness of these risks but it's still unclear if the risks will be properly managed.⁴⁵ Rwanda has not declared an interest for joining the Extractive Industries Transparency Initiative.

Private sector

About 90% of Rwanda's workforce is employed in the private sector. Over 123 000 small and medium-sized enterprises (SMEs) operate in the private sector, accounting for 98% of all businesses and 84% of private-sector employment. However, 88% of these SMEs are informal and, as such, their contribution to tax revenues remains very minimal (less than 2% in 2009/10). Transport and energy bottlenecks, as well as deficiencies in core business competencies such as business planning and management, particularly for SMEs, are key impediments to private-sector development. Rwanda has registered marked improvements in the regulatory environment for

⁴⁰ Ali et al, 2011, Environmental and gender impacts of land tenure regularization in Africa, Policy research working paper, World Bank

⁴¹ GoR, ENR sector strategic plan, final version 7-12-2012. This is a strong signal of a non-functioning system. baseline for 2012/2013 is 10% and the optimistic target for 2014/15 is 80%.

⁴² Alex Mulisa, FONERWA, personal communication 2013-04-23

⁴³ The Swedish Embassy in Rwanda is funding a study for developing result based management Monitoring and Evaluation for the ENR sector. However, the implementation phase, constituted mainly by its operationalization, capacity building and training of the ENR Sector staff, is likely to be affected by the suspension of aid cooperation.

⁴⁴ GoR, ENR sector strategic plan, final version 7-12-2012

⁴⁵ According to the ENR sector plan, page 42, mining related activities will ensure sustainable exploitation of mineral and quarry resources. By 2017/2018, 100% of all mine sites will have efficient water & wastes management system and safe, secure working conditions.

business and in the past five years has been commended as a lead reformer in East Africa, third in sub-Saharan Africa and second top consistent reformer overall.⁴⁶

Rwanda attracted investments of about 1,1 billion USD in 2012. The sectors that attracted the greatest investments were tourism, 30%, energy and water 15%, construction and real estate 15%, and agriculture about 12 %. Domestic investments were less than 50%.⁴⁷

Rwanda is the most generous of the EAC countries in providing tax incentives for FDI and domestic investment, foregoing about a quarter of its potential revenue each year in tax incentives from businesses alone, 14 per cent of its potential budget. The revenue foregone would be sufficient to more than double spending on health or nearly double that on education.⁴⁸

Cooperatives are promoted by government to create jobs and stimulate the economy. According to the Rwanda Cooperative Agency there are about 4600 cooperatives in Agriculture (divided into crops like rice), Forestry, Public Transportation, Micro credits etc. The most important challenges for cooperatives is the low education of members and lack of autonomy in some cooperatives.⁴⁹

Regional institutions, donors, NGO's

The East African Community (EAC) is the regional intergovernmental organisation of the five Riparian States, Kenya, Uganda, Tanzania, Rwanda and Burundi with its headquarters in Arusha, Tanzania. Within EAC, the Lake Victoria Basin Commission (LVBC) is the most important regional coordination body for environmental management and natural resources in the basin. The tasks of the commission include promoting and coordinating: harmonization of laws and regulations, promotion of stakeholder participation, monitoring, evaluation and compliance with agreed actions. Rwanda hosts NELSAP, the Nile Equatorial Lakes Subsidiary Action Program coordination unit and a number of NELSAP projects.

A range of bilateral and multilateral donors have been active in the environmental sector (NL, SE, UNDP, UNEP, World Bank, African Development Bank etc). The UN security council sanction committee has stated that Rwanda supports the rebel group M23 that operate in DR Congo⁵⁰. As a result many donors, including Sweden have modified their support. Sweden has stopped channelling funds via Rwandan government. An overview from 2012 of key environmental programmes and supporting donors from 2012 is found in annex II. A list of donor and NGO activity in the forest sector is found in Annex III.

UNDP-UNEP has been an influential partner since 2005 through the Poverty Environment Initiative with a focus on mainstreaming poverty environment in key national documents and processes including the budget process.

There are many international and national NGO's/CSO's working on issues related to MDG7 ranging from land rights, environmental protection, gorillas, access to water and sanitation, health and hygiene, waste management and agro forestry.⁵¹

⁴⁶ AfDB, OECD, UNDP, UNECA, 2012, African Economic Outlook, Rwanda

⁴⁷ The Independent, 2013, Rwanda investment rebounds

Abbot, P., 2011, East African taxation project: Rwanda Country case study, Institute of policy analysis and research- Rwanda

⁴⁹ Mukarugwiza, E., 2010, The hope for rural transformation a rejuvenating cooperative movement in Rwanda, ILO

⁵⁰ United Nations Security Council, 2012, Letter dated 12 November 2012 from the Chair of the Security Council committee established pursuant to resolution 1533 (2004) concerning the Democratic Republic of the Congo addressed to the President of the Security Council, S/2012/843

⁵¹ Rwanda environmental management authority, 2012, List of NGO's, CBO's participant in REMA training /Musanze from 3rd to 4th May 2012 The document gives names of organisations with and interest in

4. What are the implications for Sida?

Below follows ideas on how Sweden could work on MDG 7 to strengthen the resilience of the population of Rwanda in the future.

MDG 7, Ensuring environmental sustainability, is cross cutting in character and stretches from issues like access to water and sanitation, energy, sustainable use of land and forests, chemicals and waste management and biodiversity. Despite better policies, political commitment and strengthened environmental governance Rwanda is unlikely to reach the target for MDG 7 by 2015. This in turn will make it more difficult to reach other MDGs and Rwanda's Vision 2020 primarily due to overexploitation of assets upon which poor men and women depend. Making more out of scarce resources and the creation of alternative livelihoods other than traditional farming is critical.

Results in achieving the goal of Environmental sustainability require systematic integration of environmental considerations in policy development and investment decisions. In addition it requires financial resources and knowledge. It is the responsibility of government to create enabling frameworks for sustainable development. However, without a well-informed civil society and private sector this cannot be achieved. People must have access to relevant information including their rights to be able to hold government to account. Similarly business must be able to make well informed decisions when investing and should comply with rules and regulations. The Swedish approach to MDG 7 can be interpreted in the light of the Government's Policy for Environment and Climate Change issues (2010-2014), which shall be implemented through results strategies with countries, regions and multilateral organisations. The policy establishes that environment and climate change aspects are a central point of departure for all development cooperation. Moreover, environment and climate change constitutes one of three thematic priorities to be integrated into Swedish development cooperation. Thus, environment (including climate change, ecosystem services and disaster risk reduction) is both a sector in itself and a cross-cutting issue, to be integrated into other sectors. Sweden shall contribute to resilient societies, see Box 1⁵² and limited climate impact, and in particular focus its activities on the following areas:

- Strengthened institutional capacity in public administration
- Improved food security and sustainable use of ecosystem services
- Improved water resources management, greater access to safe water and basic sanitation
- Increased access to sustainable energy sources
- Sustainable urban development.

Box 1 A safe and resilient community:

- ...is knowledgeable and healthy. It has the ability to assess, manage and monitor its risks. It can learn new skills and build on past experiences
- ...is organised. It has the capacity to identify problems, establish priorities and act.
- ...is connected. It has relationships with external actors who provide a wider supportive environment, and supply goods and services when needed.
- ...has infrastructure and services. It has strong housing, transport, power, water and sanitation systems. It has the ability to maintain, repair and renovate them.
- ...has economic opportunities. It has a diverse range of employment opportunities, income and financial services. It is flexible, resourceful and has the capacity to accept uncertainty and respond (proactively) to change.

environment participating in a workshop with REMA in 2012. Relevant organisations working on land rights, access to water and sanitation etc are largely missing from the list.

⁵²Sida's "working definition" of resilience is "The ability of an individual, a community, a country or a region to anticipate risks, respond and cope with shocks and stresses, while addressing the underlying root causes of risks, to then recover and continue to develop"

Rwanda would greatly benefit from continuous strengthening of the capacity of public administration to inform, plan, coordinate, budget and monitor MDG 7, including land and city planning. The country also needs public investments in water, sanitation, extension services, renewable energy and city development. However, due to government's reported involvement in DR Congo these much needed areas cannot directly be supported by Sweden.

Given the country context described in this brief and the restrictions against entering in new cooperation with the Rwandan government the following issues and entry points for addressing MDG 7 are suggested for consideration by the Embassy.

An integration approach, where environment and climate change aspects are integrated in all relevant sectors and programs is suggested. A dialogue which contributes to greater awareness in society is key for national ownership for securing a healthy environment and protection of critical assets upon which poor women and men depend.

Sweden could:

- help ensure that private sector is well informed about environment and climate change risks, regulations and opportunities;
- promote activities that reduce pressure on soils, forests, wetlands and water by increasing value addition and alternative livelihoods;
- help ensure civil society is well informed about environment and climate change risks, opportunities and government plans and have sufficient capacity to monitor compliance with social and environmental standards;
- seek to expand synergies with regional programs.

A **well informed private sector** have access to information on weather, climate and disaster risks and mitigation measures, are aware of benefits of soil and water conservation techniques, safe use of agro inputs etc. A well informed private sector is aware of markets for organic and fair trade value chains, eco-tourism, opportunities for carbon finance and global and national search for low carbon development paths that drive innovation and is suitable for the regional market. It could also relate to artisanal mining practices that are safer and have lower environmental impacts. The private sector also needs information about government plans, procurements and regulations, including environment and social requirements. Opportunities for engagement could include strengthening of media, business organisations and cooperatives, universities/research institutes (agriculture, forestry value chains etc) and NGO's working with the private sector.

Reducing pressure on natural resources is a tall order when a significant part of the population largely lacks other assets. A combination of efforts to increase incomes from natural resources through value addition and better management techniques and more non-farm activities are needed. Opportunities for engagement include supporting many of those mentioned above related to knowledge and information i.e. cooperatives, NGO's working with private sector etc). There is documented potential in the forestry sector, including agro forestry practices. This is an area where Sweden has comparative advantages due to the large and strong forestry sector in Sweden and (businesses, forest cooperatives, academia, government institutions) with expertise from forest management to processing and value addition of forest resources to high value products. Swedish development cooperation in the forest sector has been significant targeting both government institutions and NGO's including VI Agroforestry, Swedish Cooperative Center, in East Africa. In a Rwandan context, Swedish support to the land tenure regularisation programme can be an advantage, primarily as an enabling factor for better forest management due to improved tenure security. Experiences from Swedish regional support to agroforestry, of which some specifically relates to Rwanda can also be used. From available information it seems like support to forest

cooperatives and capacity development for forest management and value addition of forest products are areas not fully exploited by other actors. However additional analysis may be required to reduce the risk of duplication. Improved energy access is important for reducing pressure on forests. Other opportunities for engagement could include support through the private sector share FONERWA⁵³ for instance Programme 6 Sustainable small-scale energy installations in rural areas or Programme 10 Low carbon urban systems (waste). There may also be opportunities to support the private sector through challenge funds e.g. Africa Enterprise Challenge Funds⁵⁴.

A **well informed and capable civil society** can greatly contribute to results related to MDG7. An active civil society can have an influence on how specific environmentally related issues such as allocation of water, waste, energy access, are addressed in policy making processes such as the EDPRS II. Furthermore if civil society have information about regulations, plans and budgets from national to district level chances of improved service delivery (water, sanitation), or protection of land rights or compliance with environmental regulations are greater. How much is budgeted for water in district A? What are the social and environmental requirements on investor B? As an example, civil society should be consulted when an Environmental Impact Assessment is made in Rwanda. Beyond initial participation the EIA process also creates opportunities for monitoring of how recommendations are addressed and implemented in practice. Government capacity to monitor is currently very weak. Thus civil society could play an important complementary role, not least through the use of ICT, if empowered to do so. Opportunities for engagement include a variety of civil society organizations working on access to basic services such as water and sanitation, protection of resource rights, working on responsible investments, not least in the mining sector, or support to the media. Experiences from PPIMA Citizen scorecards are highly relevant and synergies should be explored. Support to NUR is relevant for these aspects.

Synergies with regional programs supporting organisations like EAC, and management of shared resources like the Nile basin and Lake Victoria (NELSAP, LVBC/LVEMPII) should be explored. This could include promoting the efficient use of information generated in these programs such as knowledge, investment plans and policies.

⁵³At least 20 % of FONERWA funds are earmarked for the private sector.

⁵⁴In Tanzania Sweden channels support to AECF and the specific windows for Tanzania. However AECF has only one project in Rwanda and experiences suggest that a critical mass is important for the challenge funds to be effective. www.aecfafrica.org

Selected indicators for Rwanda, from World Bank Little Green Data book

Population (millions)	10.6	Land area (1,000 sq. km)	25	GDP (\$ billions)	5.6
	Country data	Sub-Saharan Africa group	Low-income group		
GNI per capita, <i>World Bank Atlas</i> method (\$)	520	1,176	528		
Adjusted net national income per capita (\$)	467	946	472		
Urban population (% of total)	18.9	37.4	28.3		
Urban population growth (avg. annual %, 1990–2010)	8.3	4.0	3.7		
Agriculture					
Agricultural land (% land area)	81	45	38		
Agricultural productivity, value added per worker (2000 \$)	..	322	288		
Food production Index (2004–2006=100)	121	130	133		
Forests and biodiversity					
Forest area (% land area)	17.6	28.0	27.6		
Deforestation (avg. annual %, 1990–2010)	-1.6	0.6	0.6		
Nationally protected terrestrial areas (% of land area)	10.0	11.7	10.7		
Threatened species, mammals	20				
Threatened species, birds	12				
Threatened species, fish	9				
Threatened species, higher plants	4				
GEF benefits index for biodiversity (0–100, median is 1.5)	0.9				
Oceans					
Total fisheries production (thousand metric tons)	9.7	6,190	10,725		
Capture fisheries growth (avg. annual %, 1990–2010)	7.0	1.8	3.9		
Aquaculture growth (avg. annual %, 1990–2010)	6.9	16.3	4.8		
Marine protected areas (% of territorial waters)	..	5.8	..		
Coral reef area (sq. km)	..	18,550	15,120		
Mangroves area (sq. km)	..	27,815	25,817		
Energy and emissions					
Energy use per capita (kg oil equivalent)	..	689	365		
Energy from biomass products and waste (% of total)	..	57.3	65.9		
Electric power consumption per capita (kWh)	..	511	229		
Electricity generated using fossil fuel (% of total)	..	65.2	32.0		
Electricity generated by hydropower (% of total)	..	18.2	45.7		
CO ₂ emissions per capita (metric tons)	0.1	0.8	0.3		
Water and sanitation					
Internal freshwater resources per capita (cu. m)	921	4,635	5,381		
Total freshwater withdrawal (% of internal resources)	1.6	2.2	4.3		
Agriculture (% of total freshwater withdrawal)	68	84	90		
Access to improved water source (% of total population)	65	61	65		
Rural (% of rural population)	63	49	57		
Urban (% of urban population)	76	83	86		
Access to improved sanitation (% of total population)	55	31	37		
Rural (% of rural population)	56	23	32		
Urban (% of urban population)	52	42	47		
Environment and health					
Particulate matter (urban-pop.-weighted avg., µg/cu. m)	23	46	56		
Acute resp. infection prevalence (% of children under five)	15		
Diarrhea prevalence (% of children under five)	14	15	15		
Under-five mortality rate (per 1,000 live births)	91	121	108		
National accounting aggregates—savings, depletion and degradation					
Gross savings (% of GNI)	15.1	18.0	25.1		
Consumption of fixed capital (% of GNI)	8.0	10.9	7.7		
Education expenditure (% of GNI)	4.2	3.6	3.0		
Energy depletion (% of GNI)	0.0	9.4	1.3		
Mineral depletion (% of GNI)	0.1	1.9	1.2		
Net forest depletion (% of GNI)	3.0	0.5	1.2		
CO ₂ damage (% of GNI)	0.1	0.5	0.3		
Particulate emissions damage (% of GNI)	0.1	0.5	0.4		
Adjusted net savings (% of GNI)	7.7	-2.1	15.9		

References:

- Abbot, P., 2011, *East African taxation project: Rwanda Country case study*, Institute of policy analysis and research- Rwanda
- AfDB, 2012, *African Statistical Yearbook 2012*, African Development Bank
- AfDB, OECD, UNDP, UNECA 2012, *African Economic outlook 2012 –Rwanda*
- Amnesty International, 2012, Rwanda
- Ali et al, 2011, *Environmental and gender impacts of land tenure regularization in Africa*, Policy research working paper, World Bank
- Bafilemba et al, 2012, From Congress to Congo – turning the tide on conflict minerals, closing loopholes and empowering miners, The Enough project
- Centre for Resource Analysis, 2006, *National Transboundary Diagnostic Analysis for the Lake Victoria Basin*
- De Koning, R., 2011, *Conflict minerals in the democratic republic of the Congo – aligning trade and security interventions*, SIPRI policy paper 27
- East African Community, 2006, *Transboundary Diagnostic Analysis of the Lake Victoria Basin Economic Intelligence Unit* (2006). Country Profile Rwanda
- Freedom House, 2012, *Freedom of the Press 2012*, Rwanda
- EM-DAT: The OFDA/CRED *International Disaster Database* - www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium
- GoR, 2009 *Rwanda State of the environment and outlook*, Rwanda environmental management authority (REMA)
- GoR, 2012, *Five year strategic plan for the environment and natural resources sector plan*, Ministry of natural resources, Final version 7-12-2012
- Human Rights Watch, 2012, *World Report 2012: Rwanda*
- The Independent, 2013, *Rwanda investment rebounds*, 11 January 2013, <http://www.independent.co.ug/rwanda-ed/rwanda/7197-rwanda-investment-rebounds>
accessed 2013-03-06
- Institute for Security Studies, 2005, *From the Ground Up: Land Rights, Conflicts and Peace in Sub-Saharan Africa*
- Mukarugwiza, E., 2010, *The hope for rural transformation a rejuvenating cooperative movement in Rwanda*, ILO
- National Institute of Statistics of Rwanda, 2012, *The third integrated household living condition survey (EICV3)*
- The Observer (Kampala) 27 November 2012 *Timber smuggling in Congo worries east africa*
http://www.observer.ug/index.php?option=com_content&view=article&id=22329:timber-smuggling-in-congo-worries-east-africa&catid=79:businessstories
Accessed the 2013-03-06
- Republic of Rwanda, 2011, *Green growth and climate resilience –National strategy for climate change and low carbon development*

Rwanda environmental management authority, 2012, *List of NGO's, CBO's participant in REMA training /Musanze from 3rd to 4th May 2012*

http://rema.gov.rw/rema_doc/EEM/List%20of%20NGO%27s%20_participant.pdf

SSC Forestry, 2013, *Assistance to the forestry sector development program Rwanda-Feb 13*

Stockholm Environment Institute, 2009, *Economics of climate change in Rwanda*

UNDP-UNEP Poverty Environment Initiative, 2011, *PEI annual progress report 2010*

UNEP, 2011, *From post-conflict to environmentally sustainable development*

UNEP

<http://www.unep.org/wed/2010/english/news.asp>

United Nations Security Council, 2012, *Letter dated 12 November 2012 from the Chair of the Security council committee established pursuant to resolution 1533 (2004) concerning the Democratic Republic of the Congo addressed to the President of the Security Council, S/2012/843*

WHO, 2009, *Environmental burden of disease Rwanda*, (accessed 2013-03-15)

http://www.who.int/quantifying_ehimpacts/national/countryprofile/rwanda.pdf

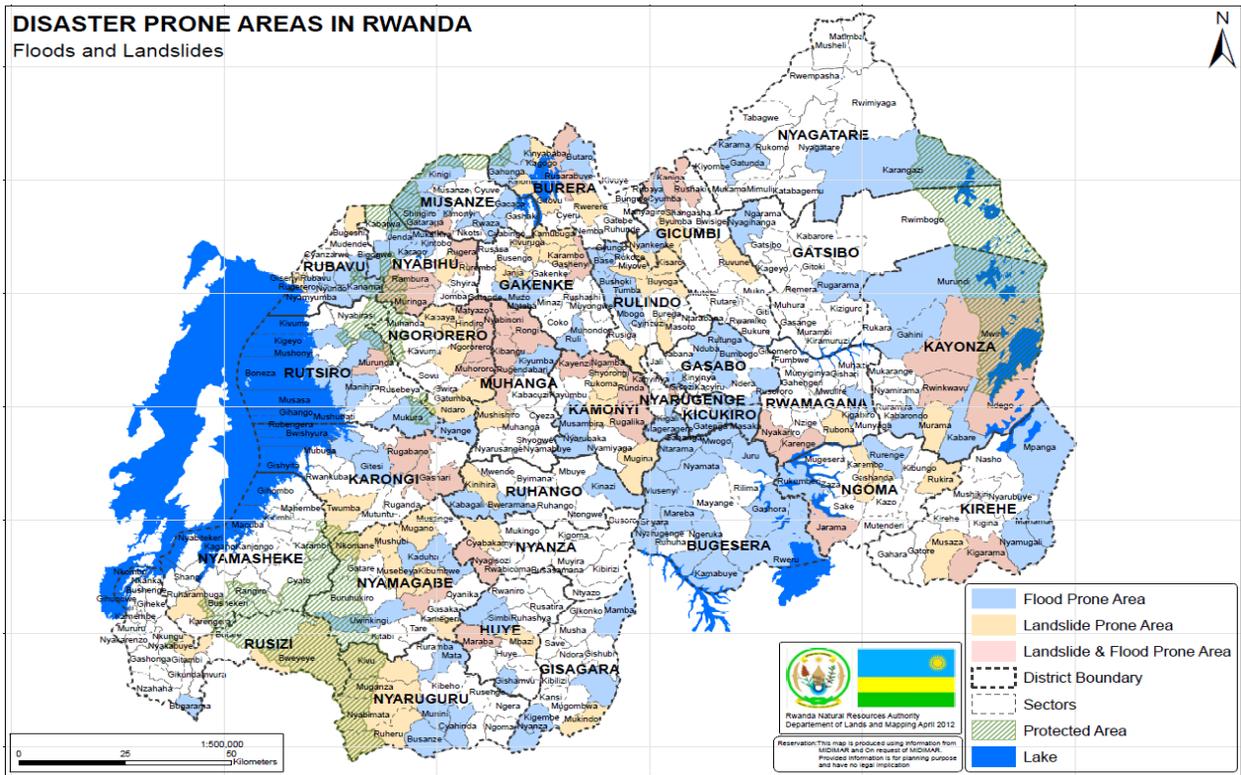
World Bank, 2013, *World Worldwide governance indicators, 2004-2011*

<http://databank.worldbank.org/data> Accessed 2013-04-05)

World Travel and Tourism Council

www.wttc.travel/eng/Research/Tourism_Satellite_Accounting/TSA_Country_Reports/Rwandai/index.php accessed 2013-03-07

Annex I Map: Areas Prone to multiple climate-related disaster risks in Rwanda



Annex II: Major environmental programs and donor activities

[Type text]

[Type text]

[Type text]

Project	Donor	Type	Currency	Tot Fin. (F Cur. In 000, FRW in 000000)	Exch. rate	start	End	Equival in Frw
Lake victoria environment management project phase ii (LVEMP II)	W.B	Grant	USD	15,000	600	2012	2017	9,000
Reducing vulnerability to climate change by establishing Early Warning and disaster preparedness System and support for Integrated Watershed Management in Flood Prone Area	UNDP	Grant	USD	3,486.00	600	2010	2014	2,092
The SIDA-supported natural resources and environment management in Rwanda (NREP)	SIDA	Grant	USD	5,661.60	600	2011	2014	3,397
Forestry sector development project in Rwanda	GOR	CP	RWF	320	1	2012	2015	320
Forestry sector development project in Rwanda	SIDA	Grant	EUR	4,999	813	2012	2015	4,064
Decentralization and environment management project (DEMP II)	UNDP	Grant	USD	5,620.20	600	2008	2012	3,372
Support program to the reforestation in Rwanda (PAREF I)	Netherlands	Grant	EUR	10,000	813	2009	2012	8,130
Support program to the reforestation in RWANDA (PAREF II)	BELG.	Grant	EUR	6,000	813	2011	2015	4,878
Water resources management master plan	GOR	IF	RWF	2,400	1	2011	2014	2,400
Securing community livelihoods through promotion and utilisation of bamboo resources in Rwanda	FAO	Grant	EUR	499	813	2012	2015	406
Projet de gestion durable des boisements et restauration des forets naturelles au Rwanda	GOR	CP	RWF	333	1	2012	2015	271
Projet de gestion durable des boisements et restauration des forets naturelles au Rwanda	FFBC	Grant	EUR	4,587	813	2012	2015	3,777
SystematicLand Regislration(SLR)	DFID	Grant	RWF	26,792	1	2010	2015	26,792
SystematicLand Regislration(SLR)	GOR	CP	RWF	10,653	1	2010	2015	10,653
Strengthening land administration -connecting LAIS to districts	GOR	IF	RWF	808	1	2010	2015	808
Land use planning and management project	GOR	IF	RWF	1,566	1	2011	2015	1,566
China Bamboo project	GOR	IF	RWF	2,000	1	2010	2014	2,000

Improved Information on water quantity	GOR	IF	RWF	2,223	1	2011	2013	2,223
Water quality monitoring project	GOR	IF	RWF	193	1	2011	2013	193
Rainwater harvesting promotion project	GOR	IF	RWF	1,164	1	2007	2015	1,164
Water hyacinth control project	GOR	IF	RWF	864	1	2011	2015	864
Degraded watersheds rehabilitation project	GOR	IF	RWF	1,134	1	2011	2015	1,134
LDCF	UNEP	-	RWF	642.6	1	-	2016	642.6
PEI	UNEP	-	RWF	802.06	1	-	2014	802.06

Annex III: Donor activities in forestry sector

[Type text]

[Type text] [Type text]

Annex 4 Current International Support to the Forestry Sector in Rwanda⁵⁵

There are many forestry related projects in Rwanda; some of these projects are carried out using principally direct government to government finance while others are based on public charitable giving both inside and outside Rwanda. Projects range from support for the state owned forests, to support for agroforestry activities. The significance of biomass to meet the country's energy demand means that there has been significant technical assistance in quantifying supply and demand. There has also been support to the development of cooperatives in both the forest and wood products sector.

Main partners involved in the forest sector comprise the Kingdom of Belgium and that of Netherlands. Their interventions are either channelled through bilateral government cooperation (such as PAREF) or through regional project such as CATALIST project.

Belgian cooperation

A support Program to the reforestation known as PAREF I was financed with 3 million Euros since April 2008 and ended in June 2011. Its second phase started in July 2011. Like PAREF I, it covers Ngoma, Bugesera and Kirehe Districts in the Eastern Province, and Rulindo, Gicumbi and Musanze in the Northern Province. It establishes forest plantations on public land and support farmers in creating their woodlots and practicing agroforestry.

Dutch cooperation

The Netherlands supports forestry sector through PAREF II, which is run by the same management unit of PAREF I. Its budget amounts to 10 million euros, with a lifecycle of 4 years (January 2009- December 2012). It covers 9 Districts (Rusizi, Nyamasheke, Rutsiro, Karongi, Nyabihu, Rubavu, Musanze, Burera and Gakenke) and focuses only on public forest plantations putting emphasize on increasing production of wood energy.

CATALIST project

Netherlands also funds a regional Project (CATALIST), which intervenes on private land. It supports farmers in creating their own woodlots and forests. It covers six Districts (Burera, Rulindo, Bugesera, Nyanza, Nyamagabe, Nyaruguru). The 3 year project commenced in January 2009 with a budget of 20 million euros shared among three countries (Burundi, DRC and Rwanda). In Rwanda CATALIST has concentrated on a market based approach to charcoal production. This approach has used many of the key features of M4P.

Vi-Life Agroforestry and Swedish cooperative centre

These are the main NGOs involved in agroforestry and land conservation in the framework of "lake Victoria Regional Environmental and Sustainable Agricultural Productivity

⁵⁵ This is an excerpt from Hensbergen et Ljungman, 2013, Assistance to the Forestry Sector Development Programme Rwanda – consultancy report, SSC Forestry Jan 31, 2013

Programme”. They started in 2005 and covers partially 3 districts (6 sectors in Gasabo, 6 sectors in Rulindo and 12 sectors in Gicumbi). The 2 NGOs are funded by Swedish International Development Agency (SIDA) with an annual budget of about 500,000 Euros.

It is obvious that most of partners involved in the forest sector are focusing on wood energy whereas production of wood for timber and service is overlooked. Many projects have a component on capacity building both at central level and decentralised entities, but no one is addressing the core issue of sustainability and lasting ownership of Rwandan forest sector by highly qualified citizens.

African Development Bank

The African Development Bank supported a project called PAFOR (Projet d’Appui à l’Aménagement Forestier) during the period between 2003 and 2010. The project focused on forest plantation and forest management and had funded 6 BSc in forestry. The total budget of the project was 8,900,000 Unit of account. The four components of this project were: Forest management, Protection of sensitised areas, Training and promotion of forestry activities; Institutional support.

The overall objective of the new ADB project, Rwanda Sustainable Woodland Management and Natural Forest Restoration Project is to contribute to reducing deforestation and poverty in the Congo Basin. Its specific objectives are to: (1) increase forest cover and improve the living conditions of forest-area dwellers and (2) create basic conditions that would win Rwanda eligibility for carbon market benefits and payment for ecosystem services. The project duration will be three years and its total cost is estimated at EUR 4 920 213. The direct project beneficiaries will be forest-area communities in eight districts that make up the project area. These include: (i) 600 000 households (or about 3 000 000 people) who will be provided with forest and/or fruit tree seedlings; (ii) 400 vulnerable persons who will benefit from private micro-woodlands; (iii) 1 200 farmers who will be trained, 200 of whom will be supported to form community cooperatives (seven apian cooperatives and seven women mushroom growers’ cooperatives); and (iv) 24 technicians of Rwanda Natural Resource Authority (RNRA) and its partners who will receive further training under the project. The direct beneficiaries will also include all people who will have temporary employment during seedling tree production and planting, and implementation of the forest management plan.