

RWANDA ENVIRONMENTAL MANAGEMENT  
AUTHORITY (REMA)

THE LANDSCAPE APPROACH TO FOREST RESTORATION AND  
CONSERVATION (LAFREC) PROJECT IN RWANDA  
(GISHWATI AND MUKURA FOREST RESERVES)

SOCIAL ASSESSMENT  
FINAL REPORT

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April 2014

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## ACRONYMS AND ABBREVIATIONS

12YBE: 12-Year Basic Education

7 YGP: Seven Year Government Programme

9YBE: 9-Year Basic Education

AIDS: Acquired Immunodeficiency Syndrome

BDC: *Business Development Center*,

BDS: Business Development Services

BNR: National Bank of Rwanda

CBP: Community based provision of family planning

CIP: Crop Intensification Program

CNJ: National Youth Council,

DDP: District Development Plan

DHS: Demographic and Health Survey

ECIV: Integrated Household Living Conditions Survey

EDPRS: Economic Development and Poverty Reduction Strategy

ENRSSP: Environment and Natural Resources Sector Strategic Plan

FARG: Genocide Survivors Support and Assistance Fund

GACP: Gishwati Area Conservation Program

GEF: Global Environment Facility

GER: Gross Enrolment Rate

GoR: Government of Rwanda

HHs: Households

HIV: Human Immunodeficiency Virus

ICT: Information and Communication Technology

IMCE: Integrated Management of Critical Ecosystems

INECN: National Institute for the Environment and the Conservation of Nature

IT: Information Technology

LAFREC: Landscape Approach to Forest Restoration and Conservation

LDCF: Least Developed Countries Fund

LVEMP: Lake Victoria Environmental Management Project

LWH: Land Husbandry, Water Harvesting and Hillside Irrigation

MFI: Micro Finance Institutions

MINAGRI: Ministry of Agriculture

MINALOC : Ministry of Local Governance

MINECOFIN: Ministry of Finance and Economic Planning

MINELA: Ministry of Environment and Lands

MINIRENA: Ministry of Natural Resources

NAPA: National Adaptation Plan of Action

NER: Net Enrolment Rate

NGO: Non-Governmental Organisation

NISR: National Institute of Statistics of Rwanda

O.P.: Operational Policy

PMTCT: Prevention of Mother to Child Transmission

RAB: Rwanda Agricultural Board

RCA: Rwanda Cooperative Agency

RDRC: Rwanda Demobilization and Reintegration Commission

REMA: Rwanda Environmental Management Authority

RIM: Réseau Interdiocesain de Microfinance (Inter-diocesan Microfinance)

RNAPA: Rwanda's National Adaptation Plan of Action

RPF: Resettlement Policy Framework

SACCO: Savings and Credit Co-operative

SESECO: Société d'Etudes, Surveillance, Expertise et Construction

SLM: Sustainable Land Management

SOPYRWA: Société de Pyrèthre au Rwanda (Rwanda Pyrethrum Society)

SPIU: Special Projects Implementation Unit (housed in REMA)

TFR: Total Fertility Rate

UNDP: United Nations Development Programme

UNEP: United Nations Environment Program United

USDA: United States Department of Agriculture

VCT: Voluntary Counselling and Testing

VSGs: Vulnerable Social Groups

VUP: Vision 2020 Umurenge programme

## EXECUTIVE SUMMARY

### 1.1 Objective of the Study

This study feeds into the preparation process for the Landscape Approach to Forest Restoration and Conservation (LAFREC) project. Its main objective was to assess in a consultative process if the proposed LAFREC activities are likely to affect the socioeconomic and cultural fabric of Gishwati and Mukura neighbouring people so that suggestions to abide by the World Bank safeguard policies are provided. It was intended to inform the livelihood component, the delineation of the buffer zone of the reserves and the community based conservation efforts.

### 1.2 Methodology

Although many types of impact assessments heavily borrow from the positivistic approach with lots of decisions informed by statistical inferences, the Social Impact Assessment presents a lot of unpredictable, multidimensional and human-centric and specific issues that cannot be fully apprehended quantitatively. This assessment therefore mainly subscribes to the relativist paradigm. Much as it used both qualitative and quantitative data, analysis and interpretation heavily borrowed from qualitative approach since it intended to bring the human/social angle that most research undertakings had not been stressing. It heavily borrowed from Interactive Community Forum Approach. Practically, it used less structured personal interviews, focus group discussions, document review and observations.

The study worked with a non-probability/ purposive sample of people who were assumed to be more likely to have desired information. It involved the following:

- **Desk study**, that reviewed and analysed the available relevant information on households and livelihood as well as related projects
- **Primary data collection** (using mainly qualitative data collection/generation tools like personal interviews, focus group discussions, document review and observations )
- **Community consultation** (in form of group discussions with samples from directly affected communities)
- **Discussion/meeting with local stakeholders** (including sample informants from the private sector)
- **Key-informant interviews** with purposively selected informants (more likely to have information about the livelihood and social issues related to the project or closely linked to the project)
- **Personal interviews with target groups** to explore the priorities they define for their desired livelihood options.

- Frameworks development (Resettlement policy framework and Resettlement process framework)
- Validation workshops (these are series of meetings with participants geared towards crosschecking information with participants so that they can help detect whether their productions were properly captured).

### 1.2.1 Desk review

The desk review rotated around the following:

- Understanding project social assessment and the social assessment of environmental projects
- Understanding the Landscape Approach to Forest Restoration and Conservation (LAFREC) and related issues
- Reviewing the literature on Gishwati Reserve
- Documenting forest reserves and impact of artisanal mining activities in the area to both population and forest (Gishwati core forest area, Mukura Forest Reserve buffer zones, Gishwati - Mukura Corridor)
- Reviewing the literature on Lake Victoria Environmental Management Project (LVEMP) and/or Land Husbandry, Water Harvesting and Hillside Irrigation (LWH) Project
- Assessing Social structures and social, cultural and economic issues of concerned communities that have to do with project undertakings (if available in existing literature)
- Project social assessment methodology polishing

### 1.2.2 Field Research

The field research involved the following:

- Field visits to LAFREC project sites (Gishwati, Mukura and Gishwati-Mukura Corridor)
- Visiting the communities likely to be affected by the project
- Visiting the communities recently resettled from the former Gishwati Forest Reserve to enquire on their current status
- Primary data collection/ generation (Personal Interviews - in their various forms, Focus Group Discussions, Document Review, Observation)
- Validation sessions with participants at the field

### 1.2.3 Sample and sampling technique

Given the location of the project site, the assessment covered 4 Districts of Western Province. Rutsiro and Ngororero Districts as LAFREC intervention zones were considered as the primary research site. However, Nyabihu and Rubavu as Districts that host people who got relocated from

Gishwati reserve was also considered in order to study the current relationship between relocated people and LAFREC intervention. In order to maximize chances of having all information about the social impact assessment, the study abode by the suggestions by Becker et al., (2003) and used the following community categories in Interactive Community Forums:

- Elected officials
- Community service organizations and clubs
- Business owners and economic development
- Education interests
- Healthcare professionals and caregivers
- Historic or environmental protection (e.g., historians, conservation organizations)
- Land-Based Resource Production (e.g., farmers, loggers, miners)
- Community conservatives
- Community liberals
- Religious interests
- Minority and vulnerability interests (like porters, homeless, women, widow(er)s, child-parents and family heads)
- Newcomers (residence of 1– 3 years)
- Senior citizens (60 years of age and older)
- Other active and involved residents (that participants will judge directly concerned but not in the list)

Because of the large number of people within the research site, it was not possible to obtain information about each individual/community within the time frame of the assessment. Therefore, in order to get individuals from the above community categories, a theoretical sampling approach, *purposive sampling technique* was used to select a purposive sample of individuals based on a typology of predetermined criteria such as economic diversity, proximity to the impact area, state of residence, population size, key economic dependency (e.g., agriculture, timber production, tourism), recent social changes, community resiliency, anticipated project related changes in transportation modes and nodes, energy production, construction, recreation, etc.

For each community category, twenty people were selected, i.e., five participants from each District. This means that at least 260 people were worked with as participants in the assessment. For quick results, in identifying individuals for each community category in a selected District, a snowball sampling process was also applied.

### 1.3 Key Findings

People around Mukura forest reserve mainly live on agriculture. Their livelihood is directly linked to cultivation and cattle rearing. However, in addition to these main activities, people on Mukura live



on mining, logging, bee keeping. Their crops include tea, potatoes (mainly Irish), maize, beans, etc. The mining, now more than artisanal, is mainly practised by young men and focuses on coltan, cassiterite, wolfram (minerals people prevail in that region).

Activities that spoil the environment are related to the following: firewood, charcoal, mining, logging, water sources, sand and calcareous soil quarrying, fires, etc. The fires were caused by people who wanted to expand the grazing land but the practice stopped.

People neighbouring Gishwati forest also live on agriculture. They cultivate tea, potatoes (mainly Irish), maize, beans, etc. Many of them are also cattle keepers. The activities that spoil the forest also include firewood, charcoal, mining, logging, water sources, sand and calcareous soil quarrying. The forest is also used for medicinal plants.

So far, the place that might serve as the corridor is a normal inhabited place scattered with hills and valleys. It has plantations of different crops and their houses. Crops in the area include tea, Irish potatoes, peas, artificial tree plantations (mainly eucalyptus and pine), grazing land for cows, sheep and goats, etc. The place also has some infrastructure and public facilities like schools, health centres, churches and small-scale shops and markets. The buffer zones, which should normally allow people's exploitation with certain restrictions, are not physically demarcated. In some parts, especially in Gishwati forest, people's settlements go up to the core forest without any visible buffer.

People are aware of the importance of Gishwati and Mukura reserves. They also understand the importance of the Corridor and the buffer zones. Old people linked the reduction of the reserves to changes that people are facing in the area.

According to District Development Plans (Rutsiro District Development Plan 2012, Ngororero District Development Plan 2012, Nyabihu District Development Plan 2012, and Rubavu District Development Plan 2012) the socioeconomic status of people living in these Districts is among the poorest districts in the country whereas it is has the most fertile land. Detailed information about the socioeconomic status of LAFREC Districts is provided in the report in findings from secondary sources.

Though LAFREC does not envisage relocating people since it aims at supporting landscape approach to forest restoration and conservation for the improvement of ecosystem functions and services in the Gishwati and Mukura forest area, the Social Assessment has identified a number of specific issues linked to LAFREC components that need to be **thought of carefully** in order for the project to be a complete success.

In the corridor, LAFREC will simply encourage people to protect their land using proper methods and to also add new species (especially indigenous trees) which are friendly to other types of crops. This practice will also interfere with people's established habits which might cause people's resistance to the noble objectives of the project. Suggestions of mitigation measures for cases of socioeconomic and cultural breakage are also provided in the report towards the end.

The Social Assessment also identified several social groups in LAFREC area that are in a clearly disadvantaged or vulnerable position, and therefore, needing special attention in order for the project to succeed. They are categorized as follows:

- a) **People with disability**
- b) **Women and female headed households**; categorically those women without access to farm land, female heads of households with little land and big family size including those with enough land but with shortage of labour and women in illegal marriage with unclear property rights,
- c) **Youth** who are unemployed and landless,
- d) **Orphaned children** and children who become **child family heads** whose inheritance right is abused by their custodians, and
- e) **Elderly** people who may have enough land but lack a social support network and cannot access labour.
- f) **Single parents**

Suggestions on what can be done to properly engage these categories are also detailed towards the end of this report.

## 2. ASSESSMENT SCOPE AND METHODOLOGY

This report presents findings from a desk review and field visits to LAFREC area. These are areas neighbouring Gishwati forest reserve and Mukura forest reserve. These forest reserves are located in Western Province in Rwanda and are neighboured by four Districts Rutsiro District, Ngororero District, Nyabihu District and Rubavu District.

Checklists prepared during the Social Assessment Inception Period were used to collect socio-economic data in a period of March-April 2014.

The study worked with a non-probability/ purposive sample of people who were assumed to be more likely to have desired information. It involved the following:

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### 2.1 Selection of Areas and Target Groups

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- Community liberals
- Religious interests
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## 2.2 Applied Definition of Vulnerable Social Groups

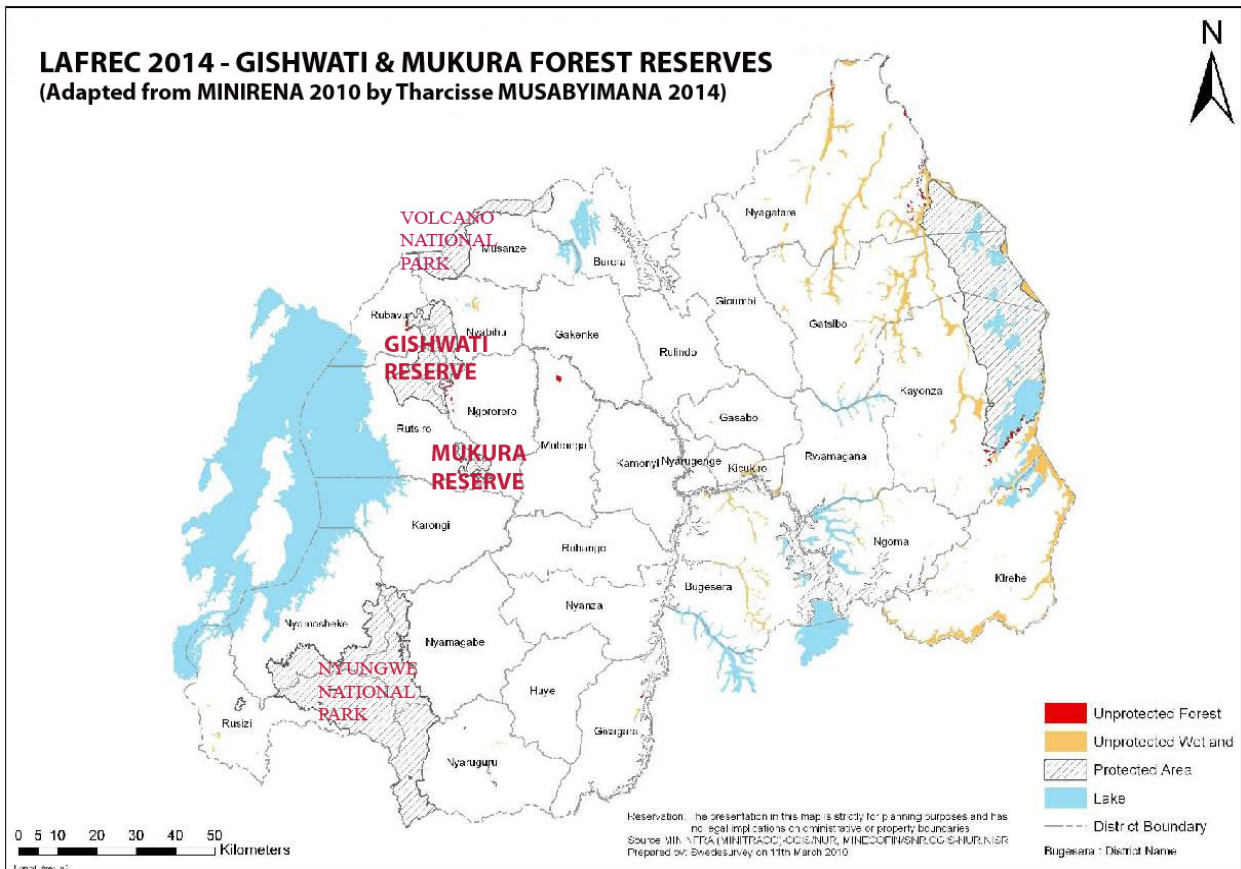
During the social assessment, the term vulnerability was considered as a concept broadly encompassing all disadvantaged social groups in respect to their socio-cultural status as well as their sharing of benefits or negative effects of mainstream development activities and in this case LAFREC. The Social Assessment identified major vulnerable social groups in LAFREC area touching on four Districts (Rutsiro, Ngororero, Nyabihu and Rubavu): people with disability, landless and/or unemployed youth, different categories of female and child headed households, orphans, elders without adequate means of social security, and single parents.

### 3. REVIEW OF DATA FROM SECONDARY SOURCES

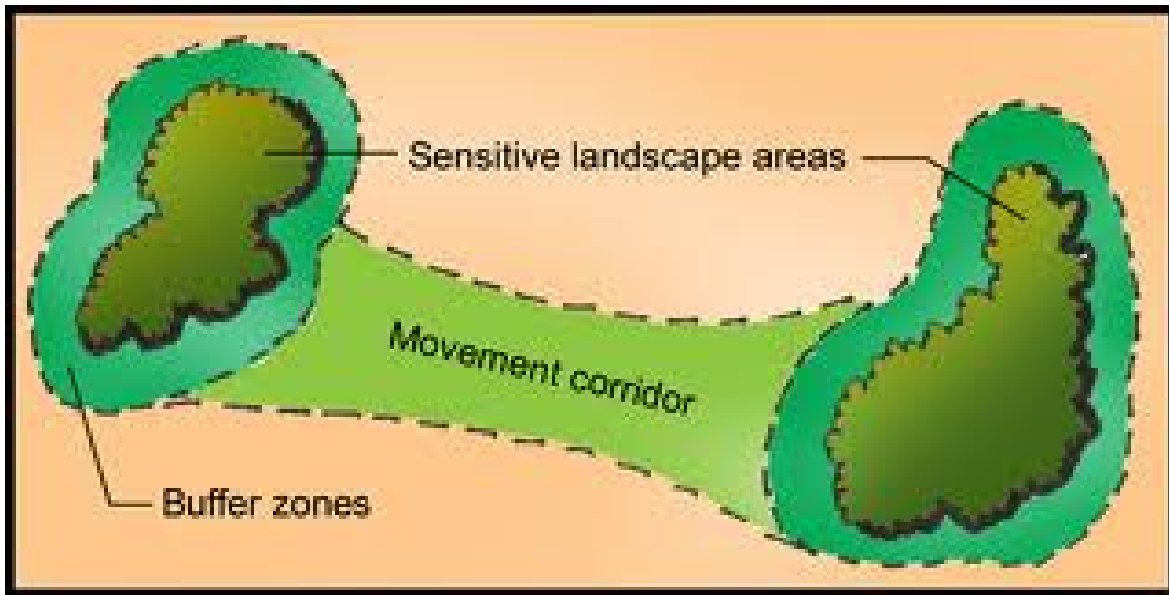
#### 3.1 MUKURA AND GISHWATI FOREST RESERVES

##### 3.1.1 A short description of Mukura and Gishwati forest reserves and Mukura and Gishwati corridor as LAFREC site

Mukura and Gishwati forest reserves are situated in North-Western part of Rwanda. They touch 4 districts, Rutsiro and Rubavu in their West towards Lake Kivu and Ngororero and Nyabihu in their East. While Gishwati reserve touches all the four districts, Mukura is located within Rutsiro and Ngororero Districts. The corridor is between Rutsiro and Ngororero. Much as these reserves are now disconnected, history shows that Mukura Forest used to be attached to Gishwati and Nyungwe before agents of deforestation came in. History also shows the probability that these reserves might have been once linked to the Volcanoes National Park area. To date, the reserves have undergone severe depletion and MINIRENA (2010) observed that if deforestation and land degradation continued at the same pace, there would be complete loss of these reserves in 2020. The following map indicates the region where the reserves are situated (note, the core forest of Gishwati is much smaller than the wider landscape shown on this map).



Schematically, Mukura and Gishwati together with associated corridor and buffer zones can be represented as follows:



Connecting protected areas with corridors can benefit biodiversity by providing access to other areas of habitat, increasing gene flow and population viability, enabling “re-colonisation” of patches, and providing habitat (USDA, 2014).

USDA (2014) provides key considerations in designing corridors:

- Design corridors at several spatial and temporal scales.
- Provide quality habitat in a corridor whenever possible.
- Locate corridors along dispersal and migration routes.
- Corridors, particularly regional corridors, should not be limited to a single topographic setting.
- Similarity in vegetation between corridors and patches is beneficial.
- Restore historical connections and generally avoid linking areas not historically connected.

For the case of Mukura - Gishwati corridor, most participants in the social assessment proposed a two- kilometre wide corridor. However, they added that given the wide number of species and the quality and diversity of the needed habitat, it would be better if that width is increased. The project will not require people to move from their lands and forest within the corridor to link the core reserves – but increase the number of trees across the landscape (on steep slopes, along rivers, in clumps through enhancing BD of small eucalyptus plantations) and agroforestry within cropping areas. Participants also proposed a one-kilometre wide buffer zone for all the reserves. It is worth noting that much as the mapping has been thought of (theoretical level), the exact physical demarcation will need to wait for the related law which might be promulgated anytime (very soon).

### 3.1.2 Mukura Forest Reserve

Mukura Forest is a protected reserve in the North-West part of Rwanda covering about 1,988 ha. It is a great natural resource for the Great Lakes region and the surrounding community. It used to be attached to Gishwati and Nyungwe before agents of deforestations came in. Mukura Forest reserve was created in 1951 with an area of 3,000 ha. Today about 50% of the forest's area has been lost due to deforestation and only about 1,600 ha of the original forest remains. This has resulted with high loss of biodiversity. The forest is mainly covered by Softwood plantation like Pinus spp, Cupressus spp and Callitris spp.

Mukura forest is home of over 402 species of mammal species over 1,061 species of birds, over 293 species of reptiles and amphibians and over 5,793 species higher plants.

In order to restore the forest, the following is going on:

- Protection of the forest through provision of Forest guards, capacity building and creating a wide range public awareness on the advantages of forests.
- Identification of forestry as one of the pillars of national economy playing a role in supporting Agriculture, Tourism, Environmental stability and Energy.
- Setting a target of 30% tree coverage nation-wide by the year 2020 planting
- Involving local communities in the conservation of the Mukura forest reserve including the protection activities of the forest
- Increasing income generating activities outside the forest to motivate local communities for the conservation of the forest
- Creating local cooperatives to facilitate income generating activities
- Involving more women and the youth for the conservation and the development of the forest

### 3.1.3 Gishwati Forest Reserve

Gishwati Forest is a protected reserve in the north-western part of Rwanda, not far from Lake Kivu. The reserve's forests were largely intact in 1978, and substantial forest cover still remained in 1986. During the Rwandan Genocide, wave after wave of refugees arrived in Gishwati Forest and began clearing it, often for subsistence farming. By 2001, only a small circular patch of native forest remained, 1,500 acres (6.1 km<sup>2</sup>) of the forest's original 250,000. In addition to tremendous loss of biodiversity, the region experiences soil erosion and degradation and landslides. Reforestation efforts in the past few years have increased the remnant native forest to about 1,440 ha. Large tea estates occupy the central and northern parts of the reserve.

The Gishwati Forest used to be one piece in a complex system of rainforests through the middle of Africa. It used to extend west beyond Lake Kivu connecting with the rainforests of the Congo, and



south connecting with Nyungwe Forest. These forest systems have become fragmented due to population increase and deforestation. The Rwandan Genocide put strain on the site as refugees fled and the population increased as people were displaced from their homes. However, even after genocide with many returnees from Democratic Republic of Congo, part of the reserve was given to these people for settlement and agricultural use. When the plan to relocate them from this reserve, some people remained inside as there was not enough land to resettle all of them. The area was degraded for cattle ranching and agriculture until it became unproductive. Erosion, landslides, reduced water quality, and soil infertility had resulted from this degradation of the land.

The Gishwati Area Conservation Program (GACP) began in 2007 with the collaboration of Rwandan President, Paul Kagame, and Great Ape Trust, founded by Ted Townsend. The initiative began with the idea of creating a national conservation park in Rwanda to protect the biodiversity of the Gishwati Forest area and stop some of the rapid degradation. In 1930 the Gishwati Forest covered 70,000 acres but lost about 90 per cent of its cover, this initiative aimed to restore the dramatic loss the area has seen over the last decade and therefore named the site the Forest of Hope.

Since the Forest of Hope has been in place there has been a 67 per cent increase in size of the Gishwati Forest. The local chimpanzee population has grown and many research and conservation initiatives have been employed within the reserve. The Gishwati Area Conservation Program began with the hopes that down the road the Rwandan government would take over the area make it a national park.

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

A wide range of fauna can be found within the reserve. Four species of primates are found, the Eastern Chimpanzee (*Pan troglodytes schweinfurtii*), the golden monkey, the blue monkey, and the L'Hoest's monkey (also known as mountain monkey). Though not since 2002, a fifth species of primate, the black and white colobus has been reportedly sighted. There are currently estimated to be 20 East African chimpanzees in the forest. This is a 54% increase in population size from the 13 chimps in 2008, when the GACP first started. This includes five infants. The average density of chimpanzee nests was found to be 1.473 per km<sup>2</sup> by Dr. Plumtree. Other mammals include the red

river hog (*Potamochoerus porcus*), the black front duiker (*Cephalophus nigrifrons*), the southern tree hyrax (*Dendrohyrax arboreus*), the serval (*Felis serval*), and *Felis aurata*.

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

## 3.2 SOCIO-ECONOMIC PROFILES OF DISTRICTS TOUCHING ON MUKURA AND GISHWATI FORESTS

To understand the socio-economic situation of people neighbouring Gishwati and Mukura forest reserves, one needs to first understand the socio-economic profiles of each District among the 4 Districts concerned by the assignment. The following profiles of the 4 concerned Districts were drawn from District Development Plans 2012 (Rutsiro District Development Plan 2012, Ngororero District Development Plan 2012, Nyabihu District Development Plan 2012, and Rubavu District Development Plan 2012).

### 3.2.1 Rutsiro District

#### 3.2.1.1 Population

RUTSIRO District has a total population of 323,251 habitants, including 152,231 males (47.5%) and 171,020 females (52.9%) all on a total area of 1,157.3 km<sup>2</sup> with a density of 279 inhabitants per sq.km. Only 47% of the population of RUTSIRO District is identified as non-poor and 53% is poor from which 26.1% was identified as in extreme poverty. Compared to the Western Province, the poverty indicators for this district are higher than the average of the Province, which has 48.4% of poor population (including extreme poor) (NISR/Census 2012)). 78% of households are farmers while more than 52% of households have less than 0.3 ha of land cultivated and only 49% of incomes are coming from agriculture. 45 % of the total population are children and 35% are youth. The two categories represent 80% of the total population of Rutsiro District. Old people (more than 65 years) represent only 3% of the population. The active population is 17% of the total district population. Only 17% of the population is active and 13.7% of population with 16 years and above is inactive (ECIV 3). There is lack of off farm jobs creation (only 8% of the population).

The average annual growth rate of the District is 2.0% and it is higher in Mukura (3.1%) and lowest in Kigeyo and Mushonyi with 0.7% and 0.8% respectively. The population density of the Rutsiro District is 279 people per s.q.km. This density is very high in Kivumu sector (1,133 inhabitants per sq.km) and relatively higher in Mushonyi (747 persons per sq.km) and Boneza (671 persons per

sq.km), and relatively lower in the sectors of Nyabirasi (319 persons per sq.km) and Mukura (330 persons per sq.km).

### *3.2.1.2 People's livelihoods and social structures*

The economy of the Rutsiro District is based primarily on agricultural production. According to EICV3 report, more than 90% of the population of Rutsiro is farmers and 49% of incomes is from agriculture.

Coffee and tea are the major cash crops grown in Rutsiro District. The western part of the District (the shores of Lake Kivu composed by sectors Kigeyo, Mushonyi, Boneza, Musasa Gihango and Mushubati) is particularly favourable for coffee. There are 15 coffee washing stations in Rutsiro District that constitute concrete development. Those are KOPAKAMA/Mushubati; BWISHAZA Coffee; COOPAC Kirorero/Boneza; COOPAC Gishamwana/Mushonyi; API Musasa; API Mushonyi; NKORA Coffee; SOCOR Coffee/Boneza; SOCOR Coffee/Rugamba; COOPAC Kabirizi/Kivumu; INGOBOKA/Kigeyo; CAFERWA ltd Cyebumba; SACOF Kigeyo; API Kivumu; CYIMBIRI AEBR/Kigeyo. Tea is grown mainly in the Northern part of the District which is close to Gishwati forest. In 2007 the District had a baseline of 5,000 T of green tea and the production was 1,667T instead of 8,000T targeted in 2012.

The main food crops for Rutsiro District are maize, beans, Irish potatoes, banana plantations and cassava. According to the District Development Plan 2012, the district had a baseline in 2007 of 19,263 T of maize, 91,375T of beans, 14,865T of Irish potatoes, 27,297T of banana and 7,609T of cassava. It targeted for 2012 the production as following: 200,000T of maize, 95,000T of beans, 20,000T of Irish potatoes, 32,00T of banana and 10,000T of cassava. But the achievements were respectively 39,454T; 8,551T; 72,843T; 67,339T and 56,250T.

Fruits produced are pineapple, passion fruit, Japanese plum (tomato tree). The following administrative sectors have a high potential for pineapple production (Musasa, Gihango, Mushubati, Mushonyi).

With regard to livestock, Rutsiro District practices farming livestock such as cows, small livestock such as goats, sheep, pigs, fish, etc. This livestock is however almost traditional and its production is insufficient.

*Table 1: Status of Livestock in Rutsiro District*

Year	Cows	Goats	Sheep	Pigs	poultry	Rabbit s
	20,859	44,743	26,167	8,545	14,143	29,275
Status 2008	14.5%	31.1%	18.2%	6%	9.8%	20.4%
	48,507	34,532	31,774	14,126	36,941	48,144
Status 2012	22.7%	16.1%	14.8%	0.7%	17.3%	22.5%

*Source: District Report 2012*

According to the District Report 2012, small livestock dominates in the District. Families have more goats, sheep, pigs, chickens and rabbits than cows. This small farm animals represent more than 73% of the livestock in the District.

**Table 2: Number of households with livestock**

Sectors	Total of HHs	Total of HHs with livestock	HHs with Cows	HHs with small livestock
Mushubati	5,640	5,474	2,252	2,668
Manihira	3,430	2,704	1,657	1,406
Ruhango	5,780	5,186	2,315	2,871
Kigeyo	5,253	5,095	1,914	3,181
Gihango	5,135	4,249	3,299	3,718
Murunda	7,078	4,587	2,775	1,747
Boneza	5,199	3,826	1,214	1,811
Mushonyi	4,369	4,118	2,183	1,915
Musasa	5,201	3,904	1,728	2,188
Nyabirasi	5,079	4,639	2,431	2,207
Rusebeya	5,932	4,425	2,258	2,171
Kivumu	5,435	4,675	1,790	2,885
Mukura	6,511	4,538	1,053	3,556
	70,042	57,420	26,869	32,324

Source: District Report 2011

The District Report 2011 reveals that there is a production of milk of 82,807 litres and 1,451 tons of meat (cows, goats, cheeps, pig and poultry). A total of leather from cows, goats and sheep is 937.

Veterinary products are procured from Rubavu and Kigali, and this negatively affects the animal health. In 2007 the District had 1% of small veterinary pharmacy and this data has stagnated while the target 2012 was 30%.

Considering the potential of biological honey, the District wishes to focus on beekeeping and encourage the private sector to invest more in the vitalization of this sector through production, processing, packaging and marketing of honey. Agricultural output is still insufficient, because the methods used in agriculture are, in many cases, traditional and there is limited accessibility to agricultural land as raw materials for agro-processing industries.

The National Institute of Statistics of Rwanda in its EICV3 report have revealed that 84.4 % of cultivating households cultivate less than 0.9 ha of land whereas 53.89% of households have less than 0.3 ha. 62.5% of cultivating households do not use fertilizers (be it organic or inorganic) and the use of quality seeds is achieved at the rate of 5%. The same report of EICV3 reveals that more than 90% of land is protected against soil erosion including 3% of radical terracing.

Serious problems facing food production in the District are not only linked to poor soil fertility due to soil acidity but also to extreme land fragmentation and very small scale agriculture production by families. Poverty among farmers has hampered the capacity of families to invest in the improvement of their land capital and scattered housing system makes land development very difficult. Other factors which have made the agricultural situation even worse include:

- Acute soil erosion caused by surface rain water;
- Soil acidity;
- Over exploitation of existing land;
- Reduction of farmland available to each family due to demographic pressure;
- Lack of agricultural inputs including organic fertilizers;
- Lack of quality seeds;
- Unpredictable climatic conditions;
- Reduced number of livestock;
- Insufficient systems against soil erosion.

All these factors make agricultural production poor and hence a large portion of the population remains underfed. Rutsiro District is among the parts of the country with large proportion of its population living below the poverty line and constantly facing food insecurity. With the economy of the District based on agricultural activities, access to agricultural land should be one of the drivers of development of the District. So efforts are needed in proper settlement as well as basic infrastructure, e.g.: electricity and roads.

### *3.2.1.3 Settlement*

According to the District self-assessment report 2012, the District had planned to elaborate layout plans for 62 sites by 2012, but only layout plans for 39 rural settlement sites were elaborated. 316 rural settlement sites have been identified. A distance of 100km of roads in settlement sites was planned and the target has been overachieved with 126 km of roads.

According to EICV report, population in planned rural settlement sites is estimated at 53.5%. From the same source, 4.1% of households have houses with cement floor and there are 3.5% of households with houses of mud-covered tree trunks as wall material whereas the national average is respectively 18% and 36%.

### *3.2.1.4 Energy*

The number of people using electricity is one of the lowest of the country even if the micro hydro power plant located on Rwishwa River was restored and the use of solar energy reinforced. The study of the rehabilitation and extension of a micro hydropower of Nkora and construction of a micro hydropower of Cyimbili have been concluded. But power is not used by local population.

Only Congo Nile, Nkora, Nkomero, Gakeri and Bugabo trading centres are connected to the national electricity grid. According to the EICV3 report, there is a lower percentage of people (0.4% of all households: source: NISR, EICV3) that use electricity as the main source of lighting. More than 99.2% of homesteads (NISR, EICV3) use firewood and its derivatives or charcoal as a source of energy to cook their food. Only 6 sectors are connected to electricity (Nyabirasi, Manihira, Mukura, Rusebeya, Kigeyo and Boneza).

### *3.2.1.5 Transport*

The main road connecting Rutsiro to the two neighbouring districts, Karongi and Rubavu is in poor condition. Transport of goods and people is still a problem due to the lack of maintenance of 1,500 km of roads, which need to be regularly maintained or rehabilitated. During the rainy season, transport is seriously hampered due to seasonal rivers which overflow, bridges which collapse and landslides which make roads impassable.

### *3.2.1.6 Environment and Natural Resources*

The coverage of forest is at 12% but this percentage is still less than the national target set by Vision 2020 for the forest cover to reach 30% of national land area by 2020. The rehabilitation of Gishwati and Mukura was planned to be achieved at 100% in 2012 but the District is far from achieving this target because so far only the strategic plan of the rehabilitation is available.

The shores of Kivu Lake have been protected at 70% as well as rivers and watersheds; 76 committees are available and 48 clubs in secondary schools have been created and have been trained in environment and climate change issues.

In mining, 5 companies have obtained the license of exploitation and 8 cooperatives are operational in Rutsiro District.

#### *3.2.1.7 ICT*

Concerning ICT, the internet connection is being developed with the arrival of the optic fibre but this is only used by District administrative office, Murunda Hospital, RSSB, Court and District Police Unit. There is only one internet cyber café in poor condition. Other internet users use MTN or TIGO wireless modems. According the EICV3 report, 76.4% of the population do not know about the use of internet; 0.7% of the population are computer literate whereas the national average rate is 4.2%.

The use of mobile phones has progressed with the telephone network covering the entire District. However, the percentage of subscription (34.6%) to mobile phone is still lower than the national average of 45% of people as well as the percentage of households owning radio (51.8% against the national average of 60.3%).

#### *3.2.1.8 Financial Sector Development*

The District has 4 branches of Banque Populaire in Gihango, Murunda, Ruhango and Kivumu Sectors. CLECAM also has 4 agencies in Nyabirasi, Mushonyi, Ruhango and Boneza. Umurenge SACCO has an agency in each sector with a total of 13 agencies. COPEC Inkunga is operational in Gihango sector. 35 % of households have at least one savings account. The level of financial inclusion, literacy and access are still low.

Rutsiro District has many associations grouped according to activities they are engaged in, e.g.: association of craftsmen, farmers, Moto taxi drivers, welders, carpenters, tailors, masons, shoe repairers, blacksmith, etc. Agricultural and Livestock farmers' associations help their members to access loan facilities and agricultural inputs.

#### *3.2.1.9 Private Sector Development*

In general, business is not well developed and organized in the District. It is practised in markets, shops, small pubs of sorghum or banana beer and some restaurants. According to EICV3 report, 69.6% of people work less than 35 hours per week and business income is 12.3%. The business mainly

concerns the flow of food products and some essential items available in shops located in trading centres in the District.

EICV3 report reveals that 49.4% of income is from agriculture, 23.2% from wages, 12.7% from business, 6.9% from private transfers, 1.4% from public transfers and 6.4% are from rents. The craft is also underdeveloped. Basket weaving, brick, carpentry, tile, sewing and embroidery activities are known in the Rutsiro District. This craft, however, registers production failure due to lack of financial resources, materials, creativity, innovation, and training.

#### *3.2.1.10 Cooperatives*

Cooperatives are in Agriculture, Livestock, Services, Commerce, Saving and credit, Handcraft and Mining. There are 125 Cooperatives with definitive license provided by Rwanda Cooperative Agency (RCA) and 58 Cooperatives have provisional license provided by the District. All these cooperatives total 30,446 members with 56% of male and 44% of women. The percentage of women is lower (less than 40%) in cooperatives.

#### *3.2.1.11 Industry*

Rutsiro District has 15 operational coffee washing stations. One Tea Factory is under construction. There is a need to establish agro-processing units for the transformation of fruits like pineapple, passion fruit, Japanese plum (tomato tree). The sectors with high potential of pineapple production are Musasa, Gihango, Mushubati, and Mushonyi. The key challenges are limited access to agricultural land (raw materials for agro-processing industries), the low level of off-farm jobs and the lack of adequate financing schemes for long-term investment (no long-term agricultural financing, access to finance for Small and Medium Enterprises).

#### *3.2.1.12 Education*

Rutsiro District has 29 secondary schools, 87 primary schools and 24 kindergartens. It does not have any higher learning institution. The District has increased primary and secondary schools as well as enrolment rates.

The District self-assessment report shows that Rutsiro District has only 24 pre-primary schools. The total enrolment in pre-primary is 435 girls and 431 boys. The District has 87 primary schools with an average of 85,867 pupils. Among these schools, 31 schools have launched the 9YBE programme and 23 of them have already started the 12YBE.

The total number of pupils in primary education increased from 73,224 in 2007 to 85,867 in 2012. This is due to government policy of nine years basic education (9YBE) and public sensitization about



education. The number of male pupils enrolled is greater than that of females thus males represent 50.8% of the total enrolment while females represent 49.2% which gives a gender disparity difference of 1.6%. There is a need for more public sensitization on girl child education. The Primary Net Enrolment Rate (NER) has not improved for both girls and boys and is 78.2%.

The District has a high gross enrolment rate (GER) of 145%. This indicates that a significant proportion of out-of-age children are still enrolled in primary school. A GER of 145% still indicates that Rutsiro district has an additional 24.9% of students to cater for in primary schooling. In practice this means 45% more classrooms required, teachers to be employed and learning resources and support to be provided. Considering the ratio Teacher/Pupil, the District has decreased from 1/67.4 to 1/60 against the target 2012 of 1/45. This target has been underachieved while the national one is 1/38. It is the same scenario for the ratio Latrine/pupil; the baseline 2007 was 1/90, in the DDP 2011 the District had targeted two latrines for 45 pupils i.e., 1/22.5 but the achievement is 1/76.5.

The literacy rate in Rutsiro District is 83.1 % for people aged from 15 to 24 and among people aged 15 and above the literacy rate is 64.2 % which is less than the national average of 70% of literacy rate. The literacy rate among population aged 15-49 is 69.6% of male and 73% of female.

There are 46 secondary schools including 9 and 12YBE, and the number of students in these schools continues to increase as a result of 9 and 12YBE. The enrolment of girls makes up 48.9% (2,503) of students in Secondary Education overall. The Net Attendance Rate for females is higher than that for males with respectively 14.6% and 7.1%.

Generally, in the early years of upper school the number of girls is greater than that of boys however from 18 years and above the number of Girls fall tremendously compared to that of boys, this indicates that the dropout rate of females is greater than that of male students, this may be due to early marriages orchestrated by traditional and cultural beliefs.

According to the District report 2011, in the teaching field the number of qualified females is far lower to that of males. Rutsiro District has 29 secondary schools. These schools are faced with enormous problems related to personnel, both in terms of quality and qualifications. In fact, the qualified teachers represent 44.6% and the ratio teacher/pupil is 25. The administration faces problems related to recruiting qualified teachers who don't like to be posted to remote areas of the District.

Available infrastructures and equipment also require urgent rehabilitation or restocking. Sports and sanitation infrastructures in secondary schools are in dire need of either construction or rehabilitation.

### *3.2.1.13 Health sector*

Rutsiro District has 17 health centres. 78.1% of the population has been subscribed to medical insurance. The percentage rate of population with access to health services is 65% and 69.6% of population use more than 30 minutes to go to health centres.

The percentage of people using natural and modern contraceptive methods is 26.9% which is still below at the national level of 49%. Total Fertility Rate (TFR) in Rwanda has been consistently reduced over the past ten years and currently stands at 4.6 children per woman but Rutsiro district has still a high fertility rate of 5.2 which remains a threat to sustainable development. The Births attended by skilled health personnel are 69.9%. The infant mortality rate is 47/1000, the rate for children under 5 years is 75/1000 and chronic malnutrition attains 0.8% (DHS, 2010). The level of integration of HIV/AIDS services in health centres has passed from 57 to 63.1 % instead of 85% (DDP, 2011).

The low performance of the health sector can be justified by insufficient Doctors, Nurses, Midwives and lab technicians in the District. The District report, 2011 reveals that the ratio Doctor/population, Nurse/population, midwives/ population and Lab technician/population are as follows: 1 Dr/33,334; 1 Nurse/1500 and 1 Midwife/12,941 and 1 Lab technician/12,941 and there is still lack of specialists in District hospitals.

Population 15-24 year-old who have comprehensive correct knowledge of HIV/AIDS are 50% of female and 24% of male.

EICV3 report shows that 87.5% of the population of Rutsiro District walks more than 30 minutes to reach basic health services.

### *3.2.1.14 Access to clean water*

Rutsiro District is situated in zones with sufficient water sources which can potentially satisfy the demand of the population water needs. The total improved water source is 59.9% against 74.2% at national level. Protected spring water is at the rate of 38.3% at national level against 50.3% protected ones in Rutsiro District.

### *3.2.1.15 Sanitation in Rutsiro District*

EICV3 report reveals that the total improved sanitation of 63.4 against the national average of 74.5 is promising although there is a need to improve even beyond the national average because sanitation is central to human well-being. 11.6% of households do not have toilet facilities and 24.8% of latrines do

not meet the required hygienic standards whilst 62.7% of households use compost heap as waste management facilities. There is 0% of rubbish collection service and 31.5% of households throw rubbish in bushes or fields.

#### *3.2.1.16 Social Protection Sector*

The situation of orphanage is not very critical. There is 15,6% of orphans (one parent or both parents) among population aged 0–20 while the national average is 18 % but there is a high percentage of disabled people 7,6% against the national average of 4,4% ( EICV3). Also, 28% of households are headed by females.

The social protection in Rutsiro District is in line with the initiative of the Government of Rwanda which began in June 2008 with three components namely:

- The support for vulnerable unable to work (Direct Support);
- Public Works reserved to the poor but who can work; (Public Works)
- And the Credits to be guaranteed to the first two categories of people who do not have guarantees identified by Ubudehe programme (financial Services).

From 2008 to 2012, the programme has gradually installed in five sectors namely: Manihira, Mukura, Kivumu Rusebeya and Mushubati and now has added two others which are Gihango and Nyabirasi sectors where there is only the component of “Direct Support programme”. In addition, the beneficiaries who have been supported are as follows:

- For Direct Support, 3,439 households have benefited from direct support with the amount of 169,605,400 Rwf
- For Public Works, 7,873 people were employed in the various projects. These workers have cost an amount of 381,262,916 Rwf in the past 5 year;
- For Financial Services, 3895 families have received loans amounting to Rwf 35,368,000

Through Public Works, various projects have been completed as follows:

- Creation of intercellular routes (Manihira, Mukura, Rusebeya) over a length of 52 km,
- Development of radical terraces (Manihira, Mukura) for an area of 600 ha,
- Construction of 26 classrooms (Manihira, Kivumu Mukura) Anti-erosion ditches, on the area of 2,500 ha.

With Financial services, several types of projects have been developed in different sectors of the population. These are agricultural projects, farms, small businesses, crafts, modern ovens, etc. In addition, the VUP programme within the Rutsiro District has been very beneficial to both the

beneficiary population programme interventions and sectors covered several areas of socio-economic development (District report, 2011).

District has planned to build 483 houses for genocide survivors during the period of 2007- 2012 and the target have been overachieved 65% with 3257 houses available. The assistance to child survivors of the genocide in education has been provided. The District has also planned to identify, categorize, and support the disabled (physical, mental, albino, deaf, epileptic, blind) and other vulnerable groups.

From 2008 to 2011:

- 150 cows have been distributed and 2,549 houses have been built for households of vulnerable groups. 331 households have received a direct support and 2,145 people with health insurance.
- 3,218 people have received some kind of public benefits (educational scholarship, food relief or cash grant) within the last year.

#### *3.2.1.17 Youth*

Rutsiro population is predominantly young. The youth between 14 to 35 years represents 37.9% of all the population and 53.9% are females while male represent 46.1% of all the population. In the context of decentralization, an office of the National Youth Council (CNJ), composed of 8 members at the district level has been elected, with a primary mission to mobilize young people to join together in cooperatives, clubs and coordinate all operations.

The EICV3 reports that 86.3% of employment rate and 13% of inactivity rate. This last point is due to the insufficient jobs in the area and the investors are uncouncted. There is also a problem of a few educated people in the area. It means a large number is inactive.

The challenges of youth sector in Rutsiro are summarized as following: insufficient jobs for young people due to the lack of education oriented to vocational training to support income generating projects. To address this challenge, the priority is the creation of income generating prospects and access to micro finance credit through BDCs.

Folkloric troops at Sector and District levels must be organized. So, the efforts are needed in equipment, training and technical support. The majority of memorials for the victims of genocide are worn and need maintenance and rehabilitation.

### *3.2.1.18 Key challenges confronting Rutsiro District*

According to the results of different reports (EICV3, DHS4, District Report, etc.) key challenges of Rutsiro District are the following:

- Limited agricultural products as raw materials for agro-processing industries due to limited land;
- Low agriculture production and productivity;
- Lack of agro-processing units;
- Insufficient infrastructures, especially roads and energy
- Low level of off-farm jobs;
- Limited market access and supply chain failures;
- Lack of adequate financing schemes for long-term investment (no long-term agricultural financing, accessing to finance for Small and Medium Enterprises);
- Inadequate infrastructure for education to meet increasing enrolment;
- Limited availability of qualified teachers and trainers;
- Limited accessibility to health services due to the insufficient skilled professional staff and health infrastructures;
- Limited accessibility to water source and improved sanitation;
- Insufficient ICT infrastructures ICT facilities;
- Insufficient forest cover, trees, post-harvest technology and degradation of ecosystems;
- Low level of financial inclusion and access
- Services delivery quality and timelines parameters not well defined
- Inconveniency of Cells, Sectors and District Offices
- Lack of women in key positions
- - - Low absorptive capacity of the budget
- Insufficient income generating activities of youth and limited employability skills
- Inadequate soil protection system
- Skills gap in environment and climate change issue
- Low level of rule of law, accountability and competitiveness
- Unsustainable assistance provided to vulnerable groups.

## **3.2.2 NGORORERO DISTRICT**

### *3.2.2.1 Population and livelihoods*

Ngororero District has 334,413 inhabitants with a density of 493 inhabitants per km<sup>2</sup> (NISR, 2012 population and housing census: provisional results). The district population is distributed in 74,613 households of which 46.3% of the population is male against 53.7% of female. The average population per household is estimated to be between 4 and 5 persons (4.5%).

With regard to the economic activities, 87.9% of workforce in Ngororero District is working compared to 80.9% of national average; unemployment rate is at 0.5% in Ngororero while inactivity rate is at 11.6%. The private formal employment rate accounts for 13.8% against 71.8% of private informal employment rate. The public employment rate stands at 11.3% above from the national average of 9.1%; likewise, the parastatal employment rate is at 2.2% against 3.4% at national level.

Although there is a high number of employed people in the District, most of them have reported being under-employed. In fact, considering all categories of jobs executed during a week, only 16.1% in average seem to work more than 46 hours against 20.4% and 24.2% who have reported working between 26-35 and 16-25 hours respectively (NISR, 2010/11, EICV 3 Thematic report -economic activities). Like elsewhere in the country, agriculture is the backbone of the District economy. Crop production constitutes the major part of agricultural production for the District households with most of them producing a wide diversity of crops. Nearly all cultivating households produce at least one staple crop and the majority also produces a range of fruits and vegetables. The percentage of households cultivating at least one parcel of land is over 90% while 84% of cultivating households cultivate less than 0.9 ha.

The District agriculture activities are mainly subsistence agriculture with the production of food crops such as cassava, maize, bananas, beans, potatoes, fruits and vegetables. Export crops like tea and coffee are also cultivated. Tea is cultivated in the high altitude zones characterized by cold and humid climate with heavy rains, these are the zones around the Gishwati forest; Coffee is grown in the areas where the climate is relatively warm. The food crops of potatoes, wheat, and maize are produced in the high mountains while bananas, cassava, beans, soybeans, various vegetables and fruits (passion fruits, pineapple, etc.) are produced in the lower elevation sites. According to the EDPRS self-assessment report, the District carries strong competitive advantages in potatoes, fruits vegetables and beans.

The mean size of cultivated land (ha) in Ngororero District is 0.63 ha. 46.4% of the agricultural household are cultivating a land sized between 0.3 - 0.9 ha; 16.3% of them are cultivating a land size of between 0.9- 3 ha and only 2.2% have a land equal or superior to 3 ha. Out of 46 000 ha of cultivated land area in the District, only 6.1% of the area is affected by land-use consolidation, 1.5% is irrigated while 86.6% is reported as being protected against erosion. The crop commercialization in Ngororero District is such that overall 11.7% of harvest is sold, while it is 7.9% for staple crops, 7.9% for CIP crops, 12.3% for fruits and vegetables and 90.8% for coffee. 83.1% of the District households are raising livestock of which: cattle (50.6%), sheep (24.6%), goat (43.9), pigs (37.8), chicken (29.7) and others (12.0%) (NISR, 2012; EICV3 Agriculture Thematic Area report).

The proportion of the District agricultural households purchasing agricultural inputs is 13.9% for organic fertilizers, 29.1% for chemical fertilizers, 21.6% for improved seeds and 25.2% for insecticides (NISR, 2010/11, EICV 3). The EICV3 report on agriculture thematic area indicates that the district agricultural households are producing the following staple crops: dry beans (93.1%), maize (67.7%), sweet potatoes (92.4%), Irish potatoes (55.1%), cooking banana (60.4%), banana fruit (59.5%), cassava (59.0%), sorghum (6.0%), peas (29.7%), peanut (0.2%), wheat (14.3%), and rice (3.5%). Concerning the export crops, 7.2% of the district households are cultivating coffee while 1.2% is cultivating tea. The table below presents the households cultivating various fruits, vegetables and export crops.

In addition to crops, livestock is another important activity for the population of Ngororero District, 83.1% of the District households are raising some livestock. The following table presents the different types of livestock found in the District.

*Table 3: Different types of livestock found in the District*

Type of Livestock	% of HHs
Cattle	50.6
Sheep	24.6
Goats	43.9
Pigs	37.8
Rabbits	41.6
Chicken	29.7

Source: District Report 2012

In total, 83.1% (be it 62 000) of the District households are raising certain livestock. Compared to the national average, the District can perform better in sheep, pigs and rabbits.

Fish farming and beekeeping are not developed. Fishing is almost non-existent in Ngororero, there is very small number of fish ponds along the Nyabarongo and Satinsyi rivers. Among the problems encountered in livestock are: low livestock yields due to insufficient pasture and inadequate production of forage, low practices of insemination, inadequate veterinary infrastructures and equipment as well as livestock species which are still local races.

### *3.2.2.2 Industry and trade*

With regard to industrial crops, the district produces coffee and tea, which are traditional farm crops grown in almost all sectors of the district. The district agro-ecological conditions are favorable for the tea crop especially in the sectors of Kageyo, kavumu, Muhanda and Sovu. Coffee is grown in the low altitude areas of the district in Gatumba, Hindiro, Kabaya, Kageyo, Muhoror and Ngororero. Coffee promotion is done through cooperatives of coffee farmers who receive agricultural inputs and credit facilities. The district has three coffee washing stations and, coffee from Kageyo sector won the 2010 cup of excellence.

The art and craft industry is usually practiced at the level of associations and individuals. The major artisanal activities are masonry, shoe making, carpentry, pottery, brick making, joinery, hair dressing, weaving, watch, radio and bicycle repairing.

Concerning trade, the District has low potentiality in trade development due to the fact that it is a land-locked district compared to the other districts of the western province; the district has only one tarmacked road. Feeder roads which connect all sectors are not always used especially during the rain period; this is a constraint for the development of trade in the district. However, the District has some modern markets (4 in total).

### *3.2.2.3 Natural Resources*

With regard to natural resources and minerals, the district has many rivers and springs and is relatively full of minerals and quarries. However, the traditional and unlawful exploitation of mines and quarries affects the rivers, making it murky and hence unsafe for drinking even after boiling. The minerals available in the district include Cassiterite, wolfram, Columbo-tantalite (coltan). Most sectors in the district of Ngororero contain minerals (Kabaya, Matyazo, Bwira, Ndarro, Gatumba, Hindiro, Sovu, Nyange, Muhororo, Muhanda, and Kavumu).

The approved operators include Comikaba, Cemir, Kknmc, Hmc, Coemiki, Munsad Minerals, Bmdc, Cemiex, Nld, Niyigena, Gmc, Nrd, Success Holding Comivunya, Rmac, Union Stonehmc, Kamina Mining Development and SESECO (District Report, 2012).

Quarrying and mining has caused damage to the mountains and the district is unable to rehabilitate degraded soils. Sites where sand and stones have been removed for construction fill with rainwater and contribute to soil erosion. The district has two waterfalls of Rucanzogera and Nyentanga which are not well valued and used.



#### *3.2.2.4 Financial Institutions*

The district possesses some financial institutions such as "Banque Populaire" branches of Hindiro, Kivumu, Kabaya and Ramba and Bank of Kigali which perform operations of savings and credits. Apart from these, there are also Microfinance institutions such as Umurenge SACCO in every sector, RIM in Muramba, Umutanguha and CLECAM in Kabaya which also play the role of channelling savings into distribution through small loans.

#### *3.2.2.5 District Poverty level and Challenges*

The EICV3 results has indicated that from an estimated population of 341,382 in Ngororero District, 51.9% are under poverty line, compared to 44.9% at the national level, and 29.5% are in extreme poverty compared to 21.4% at national level (NISR, 2010; EICV 3). In fact, the District is the tenth last poorest of the country. The national target is to have 20% of the population under poverty line in 2020 (Vision 2020 target).

#### *3.2.2.6 Access to Energy*

With regards to access to energy, the EICV3 indicated that about 11% (10.8%) of households in Rwanda have access to electricity. This is far above those in Ngororero District where only 0.4% have access to electricity. 98.8% of the District population relies on firewood as primary fuel used for cooking and 19.1% use firewood as primary fuel used for lighting against 86.3% and 8.8% respectively at the national level. 1.2% of the households in the district are using charcoal causing progressive and serious environment degradation in the district.

The Vision 2020 target is to have at least 70% of the Rwandan population with access to electricity as source of lighting and reduced usage of firewood/biomass to 50%. This indicates a long way that the District has to go to achieve the national target. The scattered and isolated type of habitat makes it very challenging to provide access to electricity to the district population.

There are initiatives in the District, such as TABARO that has invented its own "micro-central" power supply that is shared with the neighbours to light up at night. The District is finding means of popularizing the use of the improved methods of hearths commonly known as "Rondereza" to reduce the problem of environmental degradation.

#### *3.2.2.7 ICT Penetration*

With regard to the ICT penetration, Ngororero District has a low percentage of ownership in almost all ICT devices compared to the national average. Only 32.1% of the District population own mobile phones against 45.2% at national level. None of the District people have a computer nor a TV set. 55.8% of the District population have radios compared to 60.3% of the national average, while 90.0%

of this population does not use internet service facilities and does not even know how to use it. The national target is to have at least 50 internet users per 100 people and at least 60 mobile subscribers per 100 people (vision 2020 target).

### *3.2.2.8 Financial Sector*

Despite the presence of a good number of Financial Institutions, 32.0% of the District population do not enjoy financial services while 55.2% are using informal mechanisms compared to only 38.1% using formal financial services (MINECOFIN, 2012; FinScope Rwanda: Consumer Survey Topline Findings). The proportion of District households with saving accounts is 30.6% against 39.4% at national level (NISR, 2010/11, EICV 3). This low coverage of the District in terms of financial sector development requires a lot of effort to achieve the national target of 100% of adult people having access to financial services.

### *3.2.2.9 Transport sector*

With regard to the transport sector, the principal mean of transport in Ngororero District is the public or common road transport which is regularly used by 46.6% of the population compared to 24% of the Rwandan population. This is mainly due to the fact that very low proportion of the District population has their own transport facilities: bicycles (3.3%), motorcycles (0.2%) and cars (0.0%). Most of the population (46.7%) found that the transport services are too expensive and therefore walk long distances to nearest roads: 51.5% said they have to walk between 0-20 minutes to reach the nearest road (NISR, 2010/11, EICV 3).

Ngororero District has low potentials in trade development due to the fact that it is a land-locked District compared to other Districts of the Western Province. The District is crossed by only one tarmacked road and feeder roads which connect all sectors are difficult to use especially during the rainy period. This is a constraint for the development of trade in the District. However, the District has some modern markets and the entire population has access to trading centres and markets. The trading centres of Gatumba, Rusumo, Birembo and Kabaya are considered as District poles of trade development. Birembo, Rusumo and Cyome constitute the big District markets gathering different sellers and vendors from different regions of the country, especially from the neighbouring Districts. Food crops are the major products sold in these markets.

### *3.2.2.10 Industry Sector*

The industrial sector is almost non-existent in Ngororero District due to lack of basic infrastructure like electricity. The District has only one single factory which is a tea factory in addition to few processing units of agricultural products which are in place with the aim of increasing the value of certain products like coffee, that represent a considerable economic potential for the District. Other

transformation units available in the district include the small handcraft units, sewing / embroidery, tile and brick and mining. These activities provide employment and income for many households.

The low capacity of organization and management of craftsmen, lack of raw materials, insufficient incomes, a weak purchasing power, difficulty in accessing markets as well as lack of quality products that can compete on the market are some of many factors which contribute to the lethargy of the arts and crafts industry.

### *3.2.2.11 Urbanization and Rural Settlement*

Ngororero is a rural District with only two sectors (Gatumba and Kabaya) is developed compared to the rest. Like everywhere in rural areas of the country, the communities are scattered with 87.6% of its people living in isolated rural housing compared to 8.5% living in Imidugudu, 2.5% in agglomeration and 0% in modern planned area.

### *3.2.2.12 Tourism and Hospitality*

Tourism and hospitality are not developed in Ngororero District, though the high mountains in the district offer panoramic views of the volcanic chain, the Gishwati natural forest and salted water of Bugobora River in Magaba and Nshili cells of Gatumba Sector can potentially provide opportunities for eco-tourism. . The District possesses a non-developed touristic site where the German explorer Von Gotzen and the King Kigeri IV and King Rwabugiri met in Kageyo Sector. Though tourism sector is not yet developed it can be a source of employment and income generation to a large number of people.

### *3.2.2.13 Agriculture*

Land in Ngororero District, like other districts of the country, are over exploited causing degradation. The inappropriate exploitation of land combined with inadequate anti-erosion system and the absence of mechanisms for collecting and channelling rainwater are the major causes of erosion.

The proportion of the district agricultural households using agricultural inputs is 13.9% for organic fertilizers, 29.1% for chemical fertilizers, 21.6% for improved seeds and 25.2% for insecticides (NISR, 2010/11, EICV 3). From these statistics, it is imminent to say that the use of agricultural inputs is still in its earlier stage especially the use of mineral fertilizers. This is due to (i) the lack of these inputs, (ii) the low purchasing power of farmers (due to difficult to get access to agricultural credit) and (iii) lack of knowledge on how to use such inputs.

In addition to agricultural crops, livestock is another important source of income and food for agricultural households; the district of Ngororero raises cattle, goats, sheep, pigs, rabbits and poultry and district has received support from the “one cow per family” program by granting cows to families fulfilling the requirements. Though the livestock system in Ngororero district is extensive, the breeding efforts deployed mainly focusing on cattle and poultry.

#### *3.2.2.14 Access to clean water*

As far as access to clean water is concerned, 63.7% of the district households have access to improved water source compared to 74.1% at national level. However, the time spent to fetch water from the main source still remains a challenge: 25.9% of households of the district still use between 15-29 minutes while 13.5% are using between 30-59 minutes (NISR, 2010; EICV3) to collect water. The national target in the vision 2020 is that all households (100%) should have access to safe water.

Concerning sanitation, 90.2% of the total households of the district of Ngororero have the basic sanitation facilities compared to 74.5% of national average. None of the households has flush toilet whilst 4.4% of the households do not have toilet facilities.

#### *3.2.2.15 Access to health services*

81.4% of the District households are covered by health insurance compared to 90% of national average; the national target of health insurance is 100%. 76.8% of children receive all vaccinations while the fertility rate is at 4.6% in Ngororero District which is the same as the national average; the national target is to achieve 3.4%. The proportion of women who delivered in health facilities is at 59.3% compared to 69% of the national average (NISR, 2010/11; DHS 4). Concerning the health facilities, the District has 2 referral hospitals and 20 health centres.

The proportion of married women using modern family planning methods is 60.2% in Ngororero against 62.4% of the national average; the unmet needs for family planning account for 17.0% in Ngororero district compared to 18.9% of the national average. 96.3% of pregnant women receive antenatal care from a skilled provider compared to 98% of the national average, 21.8% of women in Ngororero receive antenatal care from doctors and 74.4% from nurses or medical assistants. 59.0% of births in Ngororero District occur in public health facilities compared to 69% of the national average. 0.3% of births occur in private health facilities and 38.7% at home. Births assisted by doctors account for 22.1% in Ngororero, 37.8% by nurse or medical assistant, 0.7% by midwife and 27.3% by relative and other while 60.5% are delivered by a skilled provider compared to the national level of 69.0% for delivered by skilled provider, 16% for the delivered assisted by untrained relatives or friends and 10% for the unassisted.

The proportion of children under 5 years classified as malnourished, according to the 3 anthropometric indices of nutritional status, is 53.4% against 44.2% at national level. The proportion of underweight children is 14.3% against 11.4% at national level. The severely stunted children under five account for 23.8% against 17.0% at the national level (NISR, 2010/11, DHS 4).

#### *3.2.2.16 Access to Education*

The District access to Primary Education has improved, with the proportion of people aged between 7 and 12 years in primary school at 92% in 2010/-11. The literacy rate in Ngororero District is at 63.8% for people aged from 15 and above compared to 69.7% of the national average. Net primary school enrolment rate is 91.4% in Ngororero District against 91.7% at the national level. Net secondary school enrolment rate is 14.8% in Ngororero against 20.9% at the national level. The computer literacy rate for persons aged 15 years and older is 1.7% in Ngororero against 5.3% at the national level (NISR, 2010/11, EICV 3).

According to the NISR statistical year book (NISR; 2012), there has been an increase in the primary pupils enrolment in the District: from 83 587 (40431 boys and 43156 girls) to 85765 (41361 boys and 44401 girls); the number of primary teachers has also increased from 1317 (525 males and 792 female) to 1454 (762 male and 692 female); this increase goes with the increase in number of schools (from 98 to 100), classrooms (from 970 to 1006) and desks (from 15396 to 16048) respectively for the period of 2010 and 2011.

Likewise there has been an increase of students in secondary education in Ngororero District. This is to say 10,505 students in total for the lower secondary (4861 boys and 5644 girls) and 3518 in upper secondary (1889 boys and 1629 girls). The total number of secondary students is 14023 be it 6750 boys and 7273 girls in 2011. The number of schools, classrooms and desks has also increased from 44 to 48 schools, 288 to 335 classrooms and 5780 to 6834 respectively from 2010 to 2011. The total staff of teachers is estimated at 602 (428 male and 174 female).

Although there has been improved performance in education sector due to the introduction of free basic education, Ngororero District is not above any national average. This indicates how much the District still has to do to improve the District education status.

#### *3.2.2.17 Social Protection*

The District of Ngororero implements national programmes favouring the vulnerable groups and the poor people in the District. Among other programmes implemented at District level include the vision 2020 Umurenge (VUP) with its three pillars of public works for the poor who are able to

work, direct supports for very poor households without labour capacity and financial services such as the Ubudehe Credit Scheme.

In addition to the VUP, there are other national social assistance schemes implemented at the District level such as the Genocide Survivors Support and Assistance Fund (FARG), the Rwanda Demobilization and Reintegration Commission (RDRC), the One Cow-Per-Poor Family, the free basic education, the subsidized subscriptions for mutual health insurance, and many others. Despite the lack of District disaggregated data on social protection interventions, the EICV 3 report for social protection indicates that 65.8% of the District population is covered by government health insurance compared to 68.8% at national level. This highlights how the population of Ngororero District is not able to support themselves with health insurance schemes. 3.4% of the District households have received one cow per family compared to 14.0% who received animals under other programmes.

#### *3.2.2.18 Gender*

Gender related sensitizations activities have been conducted, mechanisms for the women empowerment have been put in place, Gender Based Violence committees from Village to District level were established and strengthened, Children forums are in place. Five projects were prepared and implemented as part of promoting women in Ngororero District and about 642 000 000 Rwf were allocated to gender mainstreaming, empowerment and Gender Based Violence related activities., 34% of households in the District are female headed, 83% of small scale farms are for female. However, more gender related disaggregated data has been a big challenge during the implementation of EDPRS1.

#### *3.2.2.19 HIV/AIDS*

Awareness information regarding HIV/AIDS has been provided widely. The strategy was to mobilize the population of Ngororero District to fight against HIV/AIDS and other sexual transmitted diseases, VCT/PMTCT services are delivered in all health centres. The District has allocated about 433 000 000 Rwf of its budget to the HIV/AIDS prevention and treatment projects. This has resulted in only 1.3% of people aged between 15 and 49 years old as HIV+ compared to 3.0% at national level with 34.8% and 51.5% respectively for women and men having a comprehensive knowledge about AIDS compared to the national average of 55.5% and 51.6% respectively.

#### *3.2.2.20 Environment Protection*

Environment protection and land conservation aspects have been given their due priority such that activities like reforestation, erosion control by radical and progressive terraces, water and mining management systems have been carried out.

Despite the effort made in forestation, available forest resources are still inadequate to meet the local population needs as well as production requirements for construction, furnishing houses, cooking pots and other arts and crafts made from woods. These activities require an increase of reforestation to 50 ha and an extension of forest by more than 15% of the existing forest area.

#### *3.2.2.21 Capacity Building*

Concerning the capacity building aspect, the District of Ngororero does not have the technology to facilitate the monitoring and evaluation of forest activities according to a harmonized results monitoring framework. There is no formal training manual for the District staff with clear and defined roles, responsibilities and reporting system. However, according to the District capacity building strategy (2012), the required staff at the district headquarter is in place while there is still a gap at administrative sector levels, there are vacant posts which have to be filled. . The existing staff the cell levels does not have adequate skills and/or qualifications to monitor the forest activities, including project planning as well as related contract negotiation and management.

#### *3.2.2.22 Disaster Management*

With regard to environmental protection and anti-erosion, the District has 1,530 hectares of public woodland of Eucalyptus, Pinus, Cypress, Acacia and Alums as the common species in the forest. Besides, the District has the natural forest of Gishwati which is subject to fires and damage as a result of unauthorized cutting of wood for energy needs.

Although 94.1% of the District lands are protected against erosion, 11.3% of the District lands are subject to problems resulting from the environment destruction (NISR, 2012, EICV3 Agriculture and environment thematic reports). 10.8% of district lands are covered by forest against 22.1% at national level (NISR, 20010/11, EICV3, Environment thematic area). The national target is to have 30% of National land area covered by forest in 2020.

The District is highly affected by land degradation and soil erosion in all its administrative sectors, caused by soil acidity and uncontrolled mining and quarrying, f the high population pressure, frequent rainfall and cultivation on steep slopes.

### **3.2.3 NYABIHU DISTRICT**

#### *3.2.3.1 Population*

According to the 2012 Census on Population and Housing, the population of Nyabihu District is estimated at 295,580 inhabitants with 1% population growth, which is the lowest nationally. Nevertheless, Nyabihu District has a very high density estimated at 556 inhabitants per square km according to the same source. Concerning the total fertility rate, Nyabihu District has an average rate

of 4.9 which is higher than the national average which is 4.6. The average age at the first marriage is 21.5 years for girls against 23 years for boys. 62.5% of households have children less than 7 years and 53.2% of households are headed by women. This situation involves significant investments in education sector and specific programmes to support women.

### *3.2.3.2 Livelihoods- Agriculture*

The economy of the District is heavily dependent on subsistence agriculture, where the majority of households are smallholders. Approximately 74%, or 105,672 people from the total population of 143,000 in the District, derive their income from the exploitation of the land. However, there is a scarcity of land because; according EICV3, 50% of the population has an area less than 0.3 ha. This lack of land pushes farmers to work an average of 5 hours a day instead of at least 8 hours. This has led to unemployment among economically active people, especially among the youths.

Agricultural food products, industrial and ornamental are grown extensively. For food, there are Irish potatoes, corn, beans, wheat and banana and vegetables as well. Irish potatoes, maize and beans are cultivated by 76.6% of households by an average of 51,000 households. Irish potatoes are most cultivated with 83.7% followed by maize (74.3%) and beans (71.9%). Maize production represents 47.3% of the agricultural production in the District against 8.9% wheat. 84% of potatoes are produced in five sectors which are Kabatwa, Jenda, Bigogwe, Mukamira and Karago. Wheat is cultivated at 80% in the areas of Mulinga, Jomba, Rugera, Rurembo and Kintobo. But it is widely cultivated in Karago, Rurembo, Mulinga, Shyira and Rambura sectors. The six areas cover 82% of the total production of Nyabihu District.

Banana cultivation is less developed in Nyabihu District, but it is cultivated in two sectors that are Rugera and Shyira whose annual production in 2012 was 75% in Rugera sector against 19% in Shyira sector. According to Nyabihu District report of 2012, the current yield per hectare is still low with an average of 25 kgs per banana. Due to the promotion of the improved seed of banana, the yield will be 65 kgs. Currently, the District planted these improved seed on 700 hectares, of which 70% are covered by two categories of food banana commonly known as Injagi and Morogoma; and 30% bearing export banana called THIA 17 with the yield of 100 and 120 Kgs per banana. According the District report 2012, in two sectors of the District where banana is grown, there are 480 ha available for planting improved banana seeds.

Cultivation areas for seasons A and B have increased significantly for cereal crop with an average increase of 109.1% between 2007 and 2012 against 8.1% for legumes including beans (25%). For tubers, the average change for all products was 5.3% with 36.8% for Irish potatoes. Cereals including maize (109.2%) and wheat (108.3%) have explosive variations compared to other products including



industrial agricultural products which are coffee (50.8%), tea (32.7%) and pyrethrum (still less than 1%). Although the space for pyrethrum was not raised like other products in the past six years, it plays an important role in the economy of the country in terms of contribution to foreign currencies income, job creation and income distribution to farmers.

In Nyabihu District, there are different cash crops that contribute to economic development and household welfare improvement. These products are tea, coffee, pyrethrum and patchouli. The tea production is still low and covers only 30% of Nyabihu tea factory. This presents a big challenge to the District to supply raw material in order to overcome the gap of the remaining 70% that affects the competitiveness of the company and export revenues increment. Currently, the annual production of the factory is estimated to 40.000 metric tons by the end of 2012. The District plans to expand the tea plantation which will allow an increment of 27,000 metric tons as new production that represents the gap of 133, 333 metric tons of Nyabihu tea factory total capacity installed.

According to SOPYRWA HORIZON, the world pyrethrum market is experiencing a remarkable problem concerning the supply of raw materials. Market needs are covered at 50% distributed as follows: Australia with 70%, Rwanda 20% and 10% for Kenya and other countries. The market is still new. However, there has been a remarkable conflict between cultivators of Irish potatoes and SOPYRWA in increasing pyrethrum production. Farmers are more interested in Irish potatoes cultivation than pyrethrum cultivation. This District development plan should think about the mechanisms that encourage people to promote pyrethrum cultivation in order to take advantage of this opportunity of international market deficit.

The agricultural productivity is very low, limiting food security and it's ability to generate a surplus for the market. For example, Irish potatoes yield is 10 tons per hectare for the majority of farmers, but 40 tons for specialist cultivators. This low productivity is explained by several causes, including the lack of knowledge in cultivation techniques by farmers, low use of fertilizers, lack of seeds or improved seeds, high cost of agricultural inputs and lack of land.

Only 14% of households use organic fertilizers. 12.7% use improved seeds, 61.6% and 59% respectively use chemical fertilizers and pesticides. Unfortunately, chemical fertilizers and pesticides contribute to the degradation of the environment and deteriorate the health of human beings. Consideration should be given to the promotion of organic fertilizers and advocating a decrease in the use of chemical fertilizers (or use of a combination of the two), combined with an increase in the distribution of improved seeds and an accelerated the programme of land consolidation and human settlement together to increase agricultural productivity. Nyabihu District

has economic potential in the area of livestock production, which can help in the promotion of the organic fertilizer production as it would provide the necessary manure as a by-product.

In general, the district faces the following challenges in the sector of agriculture:

- Insufficient land;
- Land fragmentation;
- Lack of improved seeds because they are very expensive and inadequate to the climate, especially maize, wheat, and particularly for Irish potatoes. These negatively affect agriculture productivity;
- Low price of agriculture products especially during harvest period;
- Strong land degradation due to harsh weather and nature of the geographical relief;
- Weak capacity of farmers to use agricultural techniques that have positive effects on the productivity;

#### *3.2.3.3 Livelihoods - Animal husbandry*

The District has more than 35,000 cows. However, there is low number of milk cattle which is 1,704 of good heifers for milk production from artificial insemination. This represents 4.9% of all cows of the District. Milk production by end of 2012, was 13,000 litres which represent 26% of capacity of Mukamira dairy that is still under construction and that will need 50,000 litres per year in order to fill its capacity installed. The District plans to expand the space with a new redistribution of 1,300 hectares to farmers. This would increase the number of cows and environmental protection as farmers are among the people who are destroying the forests in search of grass for their cows.

In addition, statistics show that 64.1% of households have significantly increased the number of their livestock especially for cows with 45% according to EICV3 report. However, quality of dairy cows is still very low. There is also the challenge of strengthening the organization of veterinary and ensure access to quality food for livestock in order to increase the artificial insemination practice and reduce the problem of transport means for veterinary medicine (Productivity of cows 7 litres target 20 litres).

#### *3.2.3.4 Transport sector*

Nyabibu District has 290 Km of roads. 88% is dirt roads and 12% is paved. The District has access to three paved roads which are:

- Kigali - Rubavu-Goma/ DRC ;
- Mukamira - Ngororero-Muhanga-Huye-Burundi and Bukavu / DRC,
- Muhanga – Karongi- Musanze - Cyanika - Uganda.

There is also the road under construction that will play a major role in the promotion of intra-regional trade that would allow the District to maximize its benefits. This is the road of KARONGI–RUSIZI. It has also feeder roads that are regularly in poor conditions due to the high mountains and strong regular rainfall. These roads connect farms to agricultural products sale points. However, in some sectors, people walk more than 30 minutes to access the nearest road network. The poor quality and lack of roads connecting the supply area and the collection centre is a major concern.

During the rainy season, these roads become almost impassable, while during dry season the drought, there is too much dust that affects milk quality. In addition, the prices offered to farmers and ranchers by intermediate traders are insignificant and therefore decrease their income.

### *3.2.3.5 Energy Sector*

According to EICV3 report, only 10% of households have access to electricity. However, it is projected to increase this percentage till to 75% at the end of 2018. These households cannot watch TV, use Internet and nor enjoy lighting. For cooking, Nyabihu District uses wood and charcoal. This situation makes the District the second most user of charcoal with 10.5% after Rubavu district (25.5%) in the western province. It is important to note that 88.7% of households use wood as a source of energy in Nyabihu District.

The lack of energy and fuel in the district increases the use of natural resources, puts pressure on forests and land. The use of wood for cooking and lighting degrades the status of the health of the human being, increases dropout rate in school when children spend hours to look for wood. The use of other sources of energy is needed including biogas which is still in its embryonic stage. Only 0.02%, or 13 households use this source of energy, very low compared to the national forecast of 50% of households by 2017. Achieving this goal would reduce the use of wood as an energy source up to 50% of households.

### *3.2.3.6 Trade, Industry and Mining*

The private sector is characterized by the predominance of cooperatives and small traders who trade small and sundries. The informal sector is dominant and represents 82.2% of all economic activities. The banking system is dominated by micro-finance institutions (15) and BPR /Banque Populaire du Rwanda (3) and Unguka Bank (2).

Compared to formal banks, the informal financial sector is experiencing unprecedented development. At the end of 2012, the informal financial system showed a growth of 78.6% against only 43.2% for the formal finance system. This growth is justified and reinforced by the insignificant

level of savings. There are only five markets in four sectors out of twelve in Nyabihu District. The trade of small articles and the trade of agricultural products are predominant. They are located in small shopping centres in five markets which are Bikingi, Kora, Mukamira, Gasiza and Vunga situated respectively in the area of Bigogwe, Mukamira, Rambura and Shyira. The majority of commercial operators are not legally recognized, some have official authorization document to operate as traders.

There are 17,183 entrepreneurs of whom 6,886 are women grouped into 182 cooperatives of which 36.8% are legally recognized and have legal status delivered by RCA. On the other hand, 48.9% work using provisional status delivered by the District and their duration value does not exceed 6 months. Finally, 14.3% work without any authorization either from RCA, the BNR or the District. So 62% of cooperatives in Nyabihu District need to be legally registered so that they can carry out their activities formally with rights to access benefits reserved to legally recognized unions.

Industry and commerce sectors are still under developed. Nyabihu District has only one tea factory, a small unit of coffee washing, two small banana wine production units and maize mill in Mukamira which is no longer operational due to mismanagement. There is also the milk collection centre of Mukamira which is under construction as well as units of cheese production.

### *3.2.3.7 Water and Sanitation*

In Nyabihu District, 79.7% of households have access to improved drinking water, although 30% (16,259 HHs) use more than 30 minutes to reach clean water. 82.6% are supplied free of charge. 52.5% and 25.6% of households are supplied from protected spring and public standpipe sources respectively. The District shows high performance compared to national averages (74.2%) and province (73.9%) and others Western Province's districts after Rubavu District (93.4%).

Concerning rain water management, only 0.7% of households are harvesting rain although the District is qualified at high risk zone to climate change disaster. The District needs to increase this ratio during settlement programme implementation because it is one of the strategic measures against climate change disasters, strengthens environment protection and supplies free water. Out of 68,000 households, 13,872 (20.4%) from the District are supplied from unprotected water sources with serious negative effects on the health of the population.

The District has the poorest performance of waste management compared to the rest of the districts of the Western Province, 44.6% of waste is thrown in inappropriate areas, such as bushes, rivers and fields. Waste management is a critical issue for the economy and social protection and for the welfare of the communities. The District is far from reaching the national target of 2017 where 100%

of waste will be well managed in order to avoid and prevent all risks from poor management of waste. Nyabihu District does not have any clear waste management system.

According to the EICV 3 report, in Nyabihu District, 70.4% of households have access to improved sanitation, a lower percentage than the provincial level which is 78.8% and the country (74.5%). It is expected to achieve 100% of households with access to improved latrines in 2017. Officials in charge of sanitation in the District say that the geographic location of Nyabihu District which is characterized by the volcanic soil makes difficult all attempts to excavate. Even one meter has financial cost implication which is beyond the financial means of the population. This is the major cause of inaccessibility to improved sanitation.

#### *3.2.3.8 Urbanization and rural Settlement*

Nyabihu District is characterized by unplanned housing and households that are scattered on hills at high risk. The insecurity of people and their properties is enormous. According to the EICV3 NISR, only 20% of households live in planned sites whilst the national target in 2017 is to achieve a performance of 65%. There is a gap of 45% of households living in unplanned areas. According to statistics from the District, 3,005 households live in high risk areas. 64.4% of them or 1,936 households are not able to build houses in the sites identified in the settlement. This population represents 4.4% of the total households of Nyabihu District.

With regard to the industrial park which is the foundation for attraction and promotion of private investment, the District has identified a site measuring 53 hectares.

#### *3.2.3.9 Forests, Environment and Natural Resources*

Nyabihu District is among districts at high risk in the country that require special attention in environment protection. The total area that needs to be protected is equivalent to an area of 51,250 hectares. 30% of this or 15,375 hectares have to be reforested in accordance with national environment protection policy, which states that 30% of the entire national territory must be covered by forests. For now, a stretch of 8,700 hectares or 56.6% was planted in agro forestry fruit and ornamental trees. 6,675 hectares are remaining to achieve 30% which was the national target in 2007. The District began rehabilitating Gishwati forest devastated by the population in 1995 with the aim of getting arable land. 1,405 hectares of forest have already been planted out of 1,948 hectares.

Even if 25,000 households that is 36.7% of all households in the District have installed the Rondereza (least consuming cooking stoves), the method has not been applied by the households living in the volcanic area for several reasons including lack of raw materials such as clay, baked bricks and very cold region that requires other means to heat homes.

In the framework of the fight against erosion and prevent risks related to the nature of the terrain where there are regular precipitation, fragile soil, high mountains 90% of all land, promotion of radical terraces has been one of the solutions to protect the soil against erosion. In addition, 500,000 agro forestry trees were planted out of 600,000 expected, or 80% of the total cultivable area of 28,000 hectares. Rivers and lakes are also experiencing pressure from flooding and Lake Karago was protected by planting trees around the lake within 50 m from the surface of the lake.

Although this programme shows performance in the fight against erosion, there were floods and landslides. Thus seeds, harvest, tea, roads were damaged. In total 210 hectares were destroyed, 431 houses were totally destroyed and 2,300 people are homeless. Fight against erosion and disaster prevention is a major challenge for the District.

#### *3.2.3.10 Financial Sector*

Nyabihu District is characterized by the predominance of the informal financial system development and represents a high rate of savings compared to national average. Concerning the integration of adults in banking system, Nyabihu District showed a better performance compared to the national level. It has grown to about 2 times between 2008 and 2012 from 21.1% to 43.2% respectively. However, the informal sector has experienced a growth of 78.6% while the formal finance system has grown by 43.2% for the same period.

Nyabihu residents trust more informal than formal financial institutions. Compared to the total active women population aged 19-65 years of 75,000 people, only 11% are members of SACCOs against 23.4% of men in a population of 56,000 people. The numbers of accounts in the SACCOs are very small compared to the total active population. The number of accounts of women that hold the SACCO is 13.1% for a population of 9,833 people. The number of accounts opened by men is more than twice that of women and covers only 28% for a population of 15,706 people. People who are in cooperatives are ignored because the number of accounts opened by the cooperative is only 6.9% of all open accounts in various financial institutions.

Concerning the distribution of credits, only 0.3% of women have received credit from SACCOs against 1% of men in the same year. The population with low-income does not save. According to the BNR law, in which the microfinance institutions should only distribute 80% of their deposits, SACCOs should provide an average loan of Rwf 3,520, amount that cannot finance any project. However, the District has thousands of Rwandan francs that are circulating outside of the banking system.

The social mobilization of the community to access funds from SACCOs and the banks is overly time consuming to avail their services. Savings rates are far from being at the level of 80% expected in 2007 by the Government of Rwanda of adults working with banks. It could be difficult to have 90% expected in 2020. Farmers in cooperatives and the population in general prefer to work with the informal financial institutions (IBIMINA) despite their monthly average interest rate of 10% which is very high compared to the 2.5% interest rate for SACCOs. In addition, SACCOs impose their conditions and their heavy procedures while Tontines/IBIMINA provides credit faster with fewer conditions to their customers and only charge interest.

According to them, tontines allow to meet their urgent needs including children's schooling, education, purchase of inputs and seeds payable at harvest, paying health community insurance subscription and food during crisis period. This is why informal financial sector is growing faster than the formal system, although the interest rate is four times less than the rate of IBIMINA (Tontines).

In brief, the following causes are the basis of the preference of the tontines than SACCOs, because these impose onerous conditions for farmers. Their costs related to account management have been revised upwards, products and credit terms that do not fit the needs of farmers and the agricultural production cycle, delay in processing loans and the issue of bank guarantees. With this situation, the SACCOs are far from accomplishing their mission of developing the environment in which they operate as one of partners in economic development and poverty reduction programmes.

### *3.2.3.II ICT Sector*

According to the EICV 3 report, the level of use of various ICT tools shows poor performance. Only 42.1% of people in Nyabihu District use mobile phones while radios are owned by 54.8%. There is an improvement even if they are lower than the national average of 45.2% and 60.3% respectively. Regarding the use of fibre optic, the situation is dramatic even at national level with 0.8% only. Only 0.6% of households use this infrastructure. It is the same for the use of the computer (0.4%) and television (2.7%). The low level of computer use explains why people who use the Internet regularly are 0.3% of total households.

In Nyabihu District, 85% of 68,000 households have never heard about the internet. There is a problem of awareness of the existing opportunities available in the District. However, the internet is important and easy way to help businessmen to meet their tax obligations on time and at less cost.

### *3.2.3.12 Youth Sector*

The majority of active people in Nyabihu District depend on farm wages. So, according to EICV3 data, in Nyabihu District, the youth population aged between 14 and 35 represents 38% of the total population which is almost equal to the national ratio of 38.6%. However, of the young from ages 14-19, there are many more men (38.5%) against (36.2%) for women. There is a decrease of men in favour of women (17.4%) and 16.2% for men in the age group 30-35 years. In education sector, there is also a low rate of secondary school enrolment of children aged over 12.

Concerning employment among the youth, professional technical employment (0.8%) is still lowest compared to sales and services (4.4%) and agriculture (89.3%). This shows that there is a lot to do in order to reverse the share and meet national goal relating to professional technical job promotion. The District shows the lowest rate compared to the average of Western Province (1.5%).

### *3.2.3.13 Social Protection Sector*

The desegregated data by gender show that the District has more women than men. Women represent 53.3% of the total population of the District. These women are more dependent on farm revenues 82.1% and 2% for off-farm revenues. Concerning men, 63.3% depend on farm income and 22.3% earn their income in off-farm activities.

The population living under poverty line is 28.6% of the total population of 330,525 of which 11.9% is in extreme poverty where the District is ranked fourth nationally behind two districts of Kigali City that are Kicukiro and Nyarugenge and Musanze Districts. Indeed, these people are an important segment of the population excluded from the consumption of goods and services. These are key factors for the development of private enterprises, broadening the tax base and job creation.

To help these poorest people to move out of poverty the District has provided more direct support to them including one cow per poor family under Girinka programme and regular financial support. It provided employment to physically active people in public works.

In practice, much of the funds lent are in small projects of people grouped in cooperatives that are not yet recognized by any regulatory agency. Formation of groups maximizes funds for collective development projects. However, the impact of the programme on the wellbeing of assisted people is still invisible and the sustainability of self-financing programme is not yet assured. Thus, the following causes are responsible for the poor performance of the direct financing of small projects and constitute a significant barrier to reducing poverty. These are:

- Diversion of resources allocated due to the dishonesty of certain beneficiaries;



- Ignorance due to low levels of literacy;
- Non-bankable projects;
- Problem of monitoring and evaluation of loans granted by local authorities and low capacity of Vision 2020 Umurenge Programme staff in charge of credit recovery.

#### *3.2.3.14 Education Sector*

The enrolment rate in secondary education is very low and equals to the national average of 20.9% and higher than the provincial level which is 17.7%. This means that 80.1% do not follow high school and take the way of agricultural fields, exposed to earlier marriage, drugs abuse, etc... Considering the gross enrolment rate, the level of attendance increases to 44.5% and is higher than the provincial and national levels, respectively 40.9 and 36.9%. This rate is still below the target of 100% enrolment rate and is probably due to the level of poverty and a strong dependence of the household income on traditional practices in agriculture.

The illiteracy level of the population aged over 15 years is also significant because 31.6% cannot read or write and it is slightly higher than the national average (30.3%) and lower than the Western provincial average which is 31.8%.

With regard to the qualification of teachers, a set of 662 teachers in the District 79.9%, that is 529 secondary school teachers have no teaching training. Among these, 49.3% or 261 teachers have a degree of level A1 and 23.4% have a degree of A2 level (secondary school certificate). Finding qualified teachers is a major problem for the District because the new finalists of educational institutions prefer to work in the city or remain unemployed instead of working in rural areas.

In addition, teachers do not have financial means to pay for distance learning opportunities that exist. Then, 60%, or 4 secondary schools in the District do not have basic infrastructure including access to electricity and ICT to facilitate distance learning.

Nyabihu District has 935 classrooms for primary education. 51% of them or 478 rooms are built of adobes. These classes built with unsustainable materials that are old might fall down on the students during the rainy season considering the high and steady precipitation that characterize the region or reproduction of unexpected events such as weather related to the arrival of winds. These classrooms and 722 latrine doors require full rehabilitation. A classroom has a capacity to host 40 students, which is lower compared to international standard which is 46 students maximum.

The adult literacy programme for people aged between 15 and 65 produced poor results because for a total of 17,097 people only 32% attend literacy centres. Nyabihu District counts a total of 10,625, 35.8% of women against 25.8% of men who cannot read and write. That is why there are more women than men in these literacy centres. 6,472 people attended the training programme for adults. In total, there are 135 training centres with an average of 127 people per centre.

### *3.2.3.15 Gender*

Nyabihu District has a population of 295,580 people with 53 % female and 47 % male. However, women are not well represented in decision making organs. Moreover, the national policy aiming at economic development will only be achieved if vulnerable groups are equally assisted not only in education but also in socio-economic development. Among the challenges that the District faces are: 3.9 % of households are headed by disabled people; and 11 % of households are headed by persons under 21 years of age. The District has also 22,244 illiterate people. The overall population and mainly women are not used to the cooperative spirit as well as the savings policy.

### *3.2.3.16 Disability and social inclusion*

According to NISR report, households which are managed by children of less than 21 years of age and the ones which are managed by vulnerable people represent 5.5% of the total population of Nyabihu. The historically marginalized people are particularly concerned by the social programmes of the Government of Rwanda. Nyabihu District has a total of 205 identified homeless families or slum dweller exposed to destruction during heavy rains. Thus, 177 houses were built for vulnerable families and they represent 86.3% of achievement compared to the total need in houses.

District is experiencing the regular migratory flows from other Districts and the lack of financial resources to satisfy their basic needs. There are also a big number of unemployed people and this situation constitutes a bottleneck for poverty reduction in Nyabihu District. The following three problems are yet to solved in order to achieve the goal of making unemployed people economically productive: lack of cultivable land, resistance to change due to people's mentality to join cooperatives, lack of culture of savings and credit among people, lack of supervision and monitoring of children's parents during the school days, regular famine faced by families that prevents children to join classes on a regular basis.

A total of 1,314 genocide survivors were identified in Nyabihu District. Among them, 363 vulnerable families were identified and 326 houses were built for them and 90% are completed. So there is still a need of houses for 37 families. The following issues were highlighted and require appropriate measures in order to support genocide survivors. These are: lack of arable land, lower level of entrepreneurship and lack of enough financial resources from FARG.

In Nyabihu District, 6,432 people with disabilities were identified and 1,239 of them are grouped into agricultural cooperatives, craft, trade, etc. People grouped into cooperatives represent only 19.3% of all people who need assistance. There is still a need of creating jobs for 5,193 people, which represents 80.7% of people who need to improve their wellbeing and contribute to the development of their District. The following issues were raised as factors hindering assistance to people with disabilities: lack of funding, lack of arable land to cooperatives, small assistance from the National Council of People with Disabilities, lack of qualified staff to coordinate disabled people.

#### *3.2.3.17 Disaster Management*

Nyabihu District is among districts at high risk countrywide that require special attention in the context of the environment management. Its geographical relief is characterized at 90% by high mountains with a slope of more than 55% exposed to the high risk of erosion and therefore the need for the establishment of effective mechanisms for control and prevention of erosion and other harms related to climate change. Although there has been some performance in the fight against erosion, there were often floods and landslides in this area.

In the framework of the fight against erosion and prevention of risks related to the nature of the terrain where the precipitation is regular, the soil is fragile and mountains occupy 90% of the entire land, radical terraces were identified as one of the solutions to protect the soil against erosion. In addition, 500,000 agro-forestry trees were planted out of 600,000 expected and represent 80% of the total cultivable area of 28,000 hectares. Rivers and lakes also experience pressure from flooding and Lake Karago has been protected through planting trees around the lake in 50 metres.

#### *3.2.3.18 Health and related issues*

Out of 1000 live births, there are 79 deaths. This rate is higher than the national rate which is 50 deaths per 1000 live births and the rate of 27 deaths per 1000 live is expected in 2017. The worst situation could be the result of several factors, including lack of access to health services (geographic and financial inaccessibility), lack of post natal counselling, low vaccination coverage, lack of support by midwives during childbirth, gynaecologic and paediatric equipment to monitor births.

Concerning the malnutrition, it has been reported that there is a chronic malnutrition of 51% of children. This ratio is higher than the 2010 national average and the expected rate in 2017 which are respectively 44% and 15% undernourished according DHS4 results. Ignorance and poverty among certain families are the main causes of children malnutrition in Nyabihu District.

As for moderate malnutrition of 11.1%, often used by the District and the World Health Organisation to measure the country economy status is almost equal to the national average of 11% which is far from the 8% expected in 2017 according to the health statistics analysts. The following causes underlie this poor performance in malnutrition among children of less than 5 years: poverty, ignorance, lack of parental monitoring, famine within families. Another indicator that measure malnutrition is weight for age (0.9%) where the District shows a good performance more than the national level of 3%. If the current trend is maintained then the expected target of 0.5% in 2017 would be achieved. The causes are many, but the lack of balanced diet is the main cause. It often leads to the risk of non-brain development and therefore very low Intelligence Quotient, fragility to diseases, short life and household economic deterioration and.

Health promotion requires a lot of caution in order to prevent risks of diseases resulting from the lack of washing hands system. So, Nyabihu District ranks second with a rate of 6.6% in using washing hands system. This is due the promotion of “Kandagira ukarabe programme” (a hand washing device/programme). Even if this rate is higher than the provincial average (4.3%), this performance is insignificant compared to the expectations and there is a need to raise awareness on appropriate technology in order to protect themselves against diseases.

With regard to HIV/AIDS, Nyabihu District displays a rate of 0% knowledge regarding HIV/AIDS among young women and men aged between 15 and 24 years while the whole Western province has an average rate of 0.6% for the same age group. The situation is opposite in the population aged between 15 and 49 years, although the District is second in prevalence (2.7%) after Ngororero (2.1%), it has higher rates among men (3.4%) compared to the whole Western Provincial average (3%). So, men are more likely not to use preventive measures than women. There is thus the risk of contamination of new-borns and facilitate the spread of HIV to other people.

### 3.2.4 RUBAVU DISTRICT

#### *3.2.4.1 Population and employment*

According to the NISR/Census provision result 2012, the total population of Rubavu District is estimated to 404, 278. The female sex is represented by 208,938 against 195,340 of male sex. This means that the female sex is 51.68% and the percentage of male sex is 48.32%. The density of population is 1,041 inhabitants per square kilometre. The population growth rate is 3.3 (DHS4) from 2002 and the sex ratio is 93 men for 100 women. The main household size is 5.2 against 4.8 at national level.

The Rubavu District self-assessment done in September 2012 shows that employment rate stands around 76.21% (EICV) and 1,778 non-farm job created from 2010 to 2012. This is an important

challenge for development. However, the low income of households is caused by the lack of land productivity. This implies the lack of consumption which leads to the high rate of chronic malnutrition (0.97%) for the children under five years. Then, in case of low income of households, the rate of investment is therefore rare, hence the capital formation is not possible and the number of taxpayers is low. It is for this reason that the number of households affiliated to Mutual health insurance is low (33.5%). This leads to the low use of curative health services (51.6%) from which the chronic diseases handicaps productivity in terms of financial accessibility of healthcare.

#### *3.2.4.2 Health issues and sanitation*

Delivery assisted by professional health workers is only 94.1% and the rate of family planning is 36% (EICV 3). The rate of maternal mortality and infant mortality are 110 per 100 000 birth lives and 52.8 per 1000 birth lives respectively. In Rubavu District, the poverty is the main factor influencing the prevalence and the incidence of HIV/AIDS (3.3%). From this evidence, orphans and people with disability cannot access healthcare in case of illness due to geographical accessibility related to the low level of improved road network (0.4 Km/Km<sup>2</sup> or 40% ).

The lack of access to clean water to 74% of households leads to the high prevalence of diarrhoea and ophthalmic affections with respectively 17 and 13 %. The lack of electricity (25%) contributes to the low HHs income. The low household income affects the population skills and reduces the knowledge based society. Taking into consideration of this common understanding, the poverty explanatory variable of the low rate of education in Rubavu District for girls and boys to the extent that the school -drop -out is 23% in primary school. The high rate of illiteracy explains the low use of ICT of 6%.

On the one hand, the unhealthy housing and environmental sanitation limit the productivity of labour force. On the other hand, the low agricultural production is negatively correlated with the economic growth and poverty alleviation. In this fact, the modernised agriculture land is estimated to 63.5%; the financial credits from SACCO are 65%. The soil protection is 91.2% and the rate of reforestation of 10.2%.

#### *3.2.4.3 Livelihoods*

Although Rubavu has 12 modern market halls and 41 trade centres and Five Sectors sharing borders with eastern DRC and conduct many cross-border commercial transactions, the level trade of derivatives products of agriculture related to border trade is not developed to help and to ensure high quality agricultural exports and therefore to increase the selling price. Inadequate infrastructure such as roads denies producers to markets, and then the problem is aggravated by the insufficiency of electricity and water for production.

The touristic potentialities of the District of Rubavu are under-exploited. The Lake Kivu offers a place of interest which can generate a multitude of activities capable of increasing tourism-related incomes and to creating jobs. In addition to this lake there are the Volcano National Park, the caves of Busasamana, the thermal water of Nyamyumba and the natural forest of Gishwati which can attract tourists.

Taking into account the situation above, the District will emphasise on the area of agriculture and economic development which lies in six proposed strategies: Providing more food to the rapidly expanding population; Increasing the demand for industrial products and thus necessitating the expansion of the secondary and tertiary sectors; Providing additional foreign exchange by specialisation in the production of an agriculture goods for export; increasing rural income by granting credits; providing productive employment and improving the welfare of the rural people.

Agriculture and livestock is the pillar of the District economy where more than 94% (CBP document, Rubavu, 2012) of the population in rural area is employed. The majority of the population in formal and informal off-farm employment both in public and private sector is based in Gisenyi city where a great number of institutions are concentrated. The use of agricultural inputs remains low but in general greater than the Rwandan averages. The crops of maize are estimated to 6.92%; beans 7.25%, and Irish potatoes 17.46%. It is observed that 71.5% of farms are exploiting less than 0.5 ha. The majority is in category of those who have 0-0.1 ha (30.4%), there are no households that hold more than 5 ha of land.

To enhance economic growth and to reduce poverty, the government programme of One Cow Per Family has been implemented in Rubavu District with 22% of the crossed cows at 50%. The livestock of goats, sheep, bees, pigs and fish is developing with the support of some stakeholders involved in agriculture interventions. The sectors of Nyamyumba, Nyundo and Kanama represent the District in the production of tea with a transformation unit of Pfunda Tea Company, while Coffee is cultivated in Nyamyumba sector with one coffee wash. The pyrethrum is developed in the northern sectors of the District such as Bugeshi, Mudende, Kageshi and Busasamana where it is cultivated and contributes to the economic growth of households. Concerning pyrethrum, the transformation is done in SOPYRU in Musanze District.

The factors influencing the low agricultural production and productivity in Rubavu District are: small land (over-exploited) whereby the majority of the population has less than 0.5 ha of land to be exploited; surface rain water in sectors of Nyamyumba, Kanama and Nyundo (the rate of radical terracing to fight against erosion is not improved); soil acidity in Kanama and Nyundo sector;

demographic growth with 1, 041 inhabitants per Km<sup>2</sup> on the farmland available (General National Census, 2012); low use of agricultural inputs including organic fertilisers and pesticides; lack of selected seeds; unpredictable climate changes; low level of livestock promotion; low agricultural production of food security and cash crops; insufficient animal productivity and low level of developed post-harvest handling and storage services.

In Rubavu District, the problems related to flooding have been signalled in the sectors of Kanama, Nyundo and Nyamyumba damaging a lot of households and crops around Sebeya River and Gitsimbe. The efforts should be put in place to avoid and prevent disasters from flooding in Rubavu District where the radical terracing is at the rate of 91.2%. Landslides are also rampant in Nyamyumba sector. This is due to the non-respect of REMA regulations: the settlement should be at 50 m from Kivu Lake and 10 m from rivers.

In Rubavu District, the extreme poverty rate is 19.2% with 35.8% under poverty line. The percentage of households with children under 7 years of age is 71.8%, the households headed by women are 30.1%, the households headed by widows are 18.8%, and the rate of households headed by disabled people is 7%. The employment rate is estimated to 76% and the under-employment rate at 5% for all active population with inactivity rate of 19.9%.

With regard to farm and off-farm employment, the percentage of farm wages is 11.1% against 23.9% of wages of non-farmers, the independent farmer households are estimated to 37.8% against 23.8% for households with the independent non-farmers. In public sector, 9.6% have salaried work and 10.2% in private formal. The informal private sector represents the rate of 76.2% of households at District level, according to EICV3/2011.

#### *3.2.4.4 Poverty levels*

The rate of poverty of 35.8% in Rubavu District is an important challenge for development. However, the low income of households implies the lack of consumption which leads to the high rate of malnutrition. In case of low household income, the rate of investment is therefore rare, hence the capital formation is not possible and the number of taxpayers is low. It is for the reason that the number of households affiliated to Mutual Health Insurance is low (55% against 68% at national level). This leads to the low use of curative health services (51.6%), and delivery assisted by professional health workers is only 74.1%, family planning (38.5%) and HIV/AIDS (3.30%)

#### *3.2.4.5 Energy, access to water and sanitation*

There is a negative correlation between utilization of source of energy: the low rate of the use of electricity (21%) leads to the high use of wood as source of energy (73.9%). According to the results of the third household living conditions survey (EICV3), In Rubavu District, the total access to lean water is 74% against 74.2% at national level. This indicator shows that the target of Vision 2020 and 7 YGP of 100% is possible. In this district the rain water use is estimated to 6.6% against 0.4 at the use of rain water at national level. However, the public standing pipe is used at level of 59.6% against 25.7% in Rwanda. The challenge is remarkable for the high use of rain water by households at the District level.

The rate of households using the surface water i.e. the rivers and lake's water is still high compared to the total improved water source. It is on the percentage of 5.2% against 11.6% at national level. There are no boreholes in the District against 1.8% at national level. The number of households with piped water to their homes is 12.4% against 5.9% in Rwanda. Although there is improvement in the sector of water and sanitation in Rwanda in general and in Rubavu District in particular, the challenges are still noted in terms of the time to access main water source. The percentage of households using less than 60 minutes is 5.9% against 5.7%. This could explain the high morbidity rate of the diseases from unsafe water such as diarrhoea and intestinal infections of 17% and 13%.

Concerning sanitation, the rate of improved sanitation is 80.1% against 74.5% at national level while the vision 2020 and 7 YGP (Seven Years Government Programme) suggest to attain 100%. The percentage of households with flush toilet is 2.3% in Rubavu District, and the households using the pit latrine with solid slab are at the rate of 77.8% at District level against 72.8% at national level, but the users of pit latrines without slab are 4.1% into 19.4% at national level. Among the population of Rubavu District, the rate of 15.6% does not have the toilet facilities against 6.1% at national level.

Considering the domain of waste management, in Rubavu District we count 30.6% of compost heap against 59.4% at national level. The problem identified in waste management is that 52.1% throw the solid waste in bushes or field because the rate of the households affiliated to the rubbish collection services are still low: 10.4% against 5% at national level. There are even those who use rivers and the lake: 1.9% against 2.5 at national level.

#### *3.2.4.6 Agricultural productivity*

In Rubavu District, agriculture has for a long time been a core sector of economy in terms of its contribution to domestic income and employment. The majority of women in Rubavu District are employed in agriculture as primary producers and contributes to 29.3 per cent of agriculture production against 45.7 at national level. The land management proposed the types of crops such as



Maize in sectors of Mudende, Bugeshi, and Busasamana. Beans are proposed in sectors of Nyakiriba, Rubavu, Kanama, Nyundo and Nyamyumba. Potatoes were proposed in Mudende, Bugeshi, Busasamana and Cyanzarwe.

The annual report from the unit of agriculture of Rubavu District shows the production of 4.8 tonnes per hectare of maize in 2012 on 21,300 cultivated hectares, 2.2 tonnes per hectare of beans on 17,500 cultivated hectares. Then, the production of potatoes has been 23 tonnes per hectare in 2012 on 13,600 cultivated hectares. However, cash crops like coffee in sector of Nyamyumba with one washing coffee, tea in Kanama and Nyundo with a tea factory at Pfunda which contribute strongly to the economic growth of Rubavu.

The household use of selected seeds is estimated at 19.2% against 80% at national level. According to EICV3, the percentage of household that have been exposed to land tenure regularization programme is estimated to 53.0% against 54.1 in the country. Land irrigated and protected against erosion is respectively 0.1% and 47.9% against 3.0% and 78.1% at national level. This means that the efforts should be done in soil protection as proved by the result from EICV3. According to the households using chemical and organic fertilizers, the rates are respectively 32.7% and 1.5% against 28.9% and 9.3% at national level.

The mean share of harvest sold for a total number of households cultivating land for crops production is at 21.1% for overall against 20.9% at national level, and 20.5% for staple crops against 19.3%, while the fruits and vegetable present 9.5% against 13.6% at national level. In livestock area, the percentage of households raising livestock is 47.7% against 68.2% at national level. Animal related resources promoted in Rubavu District are 50 fish cages installed in Lake Kivu, 4 modern fishponds in Rubavu sector and one modern slaughterhouse under construction.

The cultivated land is 0.26% against 0.59% at national level. The EICV results show that 74.3% of households have less than 0.3 ha. This size of cultivated land is very low compared with the total cultivated area at national level. The households with the land of over 3 ha are estimated to 2 per 1 000 against 19 per 1 000 in the country. This is a main factor which can be analysed to explain the poverty in Rubavu District.

#### *3.2.4.7 Social Protection*

In Rubavu District the quality of life can be measured on the basic of health status indicators such as the rate of use of family planning services estimated to 38.5% against 45% at national level according to the data from EICV3. People affiliated to mutual health insurance are 55% against 68% at national level. This rate is still low compared to the EDPRS and 7 YGP of 100%. The low rate of health

insurance leads to the low use of curative services which is estimated at 51.5%, while the World Health Organization stipulates that this indicator should be at least 50%. The rate of delivery assisted by the health professional is 74.1%. Then, the vaccination is estimated to 93.9% for VAR. Rubavu District has one hospital with 18 doctors in which 2 doctors are specialists, 183 nurses in which 23 of A1 level; and 60 of A2 level, and 4 with A3 level. The number of laboratory technician is 11 among them 6 at A1 level and 5 of the level of A2.

The social services are endowed by 13 workers among which 7 at the level of A2 and 5 at the level of A1. The service of Gender Based Violence is managed by a person with A0 in Social sciences. The number of Health centres is 10 with 6 health posts.

Considering the findings from EICV3, the literacy rate of Rubavu District is 68.8% among population aged 15 and above. This number is not very different from the rate at the national level which is 69.7%. Whereas, the percentage of individuals aged 6 and above that have ever attended school is estimated to 82.6% against 83.2% at national level. This means that 16.8% represents those who have never attended school. The rate of individuals with net attendance in primary school in Rubavu District is 89.7% against 91.7% at the national level and 23.3% against 20.9% in secondary school. The EICV also revealed that 90.9% in Rubavu District have never used computer before against 93.5% at national level. In those cases the programme of government should be reinforced in order to attain at least 50% proposed by Vision 2020.

The EICV 3/2011 report revealed that the percentage of persons with major disability is estimated to 2.5% in Rubavu district against 4.5% at national level but the individuals with no major disability is 97.5% against 95.6% in country for the total population of 423 respondent people at District level against 10 762 in Rwanda. Considering the sex of heads of households, the male-headed households are 65.9% against 30.1% female-headed.

#### *3.2.4.8 Key challenges for development in Rubavu District*

The following are development constraints identified in DDP 2012 in Rubavu District:

- Low agricultural productivity due to insufficient processing units for agriculture and livestock products
- Inadequate PPP (Public Private Partnership) development in tourism and other economic investment
- Limited access to electricity for many of HHs which leads to high use of wood as source of power
- Limited access to improved roads network

- Low number of HHs in planned settlements sites.
- Limited accessibility to clean/protected water spring and limited access to improved sanitation
- Inadequate computer and internet literacy
- Limited accessibility to the health facilities and services
- Insufficient accessibility to basic education for all
- Unsustainable assistance provided to vulnerable groups
- Inadequate soil protection system
- Insufficient forest cover and degradation of ecosystem and Skills gap in environment and climate change issue and low protection of Lake Kivu and rivers

### 3.3 POPULATION IN THE VICINITY OF GISHWATI AND MUKURA FORESTS

Mukura and Gishwati forest reserves touch on four Districts of the Western Province of Rwanda. These are Rutsiro, Ngororero, Nyabihu and Rubavu. However, they only contain and touch certain sectors of these Districts. The data from concerned Districts show that the cells neighbouring the reserves count a total of 224,533 people. This means that LAFREC activities are likely to affect 224,533 people. The following table shows a breakdown of people living in the vicinity of Mukura and Gishwati reserves likely to be affected by LAFREC activities (it is a breakdown by concerned cells in each district). The table contains figures that were provided by concerned Districts:

Table 4: Statistics of people living in the vicinity of GISHWATI and MUKURA forests

GISHWATI					
District	Sector	Cell	Population	Total/Sector	Total/District
Nyabihu	Jenda	Bukinyanya	5,343	5,343	53,409
	Karago	Busoro	5,166	5,166	
	Rambura	Rugamba	4,137	14,506	
		Mutaho	5,292		
		Kibisabo	5,077		
	Muringa	Rwantobo	3,780	13,683	
		Mulinga	3,698		
		Gisizi	3,180		
		Nyamasheke	3,025		
	Bigogwe	Muhe	1,752	14,711	
		Arusha	4,068		
		Kijote	8,891		

Rubavu	Kanzenze	Muramba	1,502	6,533	25,494
		Nyamikongi	5,031		
	Nyakiriba	Busizi	5,529	10,262	
		Gikombe	4,733		
	Kanama	Yungwe	3,593	8,699	
		Karambo	2,530		
Nkomane		2,576			
Ngororero	Muhanda	Gasiza	4,599	18,707	29,057
		Rutagara	5,516		
		Bugarura	4,228		
		mashya	4,364		
	Kavumu	Rugeshi	4,269	10,350	
		Tetero	6,081		
Rutsiro	Rusebeya	Remera	5,475	5,475	70,539
	Murunda	Kirwa	7,686	7,686	
	Ruhango	Kavumu	5,255	19,673	
		Rugasa	5,092		
		Rundoyi	4,375		
		Gihira	4,951		
	Mushonyi	Rurara	6,614	6,614	
	Kigeyo	Nyagahinika	5,342	12,008	
		Rukaragata	6,666		
		Mubuga	6,617		
Nyabirasi	Ngoma	6,682	19,083		
	Busuku	5,784			
Total population living in cells surrounding Gishwati forest					178,499

Source: District 2014

MUKURA					
District	Sector	Cell	Population	Total/Sector	Total/District
Rutsiro	Rusebeya	Ruronde	3,109	9,516	34,338
		Mberi	6,407		
	Mukura	Kageyo	6,498		
		Mwendo	9,783		

		Kagano	6,145	24,822	
		Kagasa	2,396		
Ngororero	Ndaro	Kibanda	6,368	11,696	11,696
	Bwira	Gashubi	5,328		
<b>Total population living in cells surrounding Mukura</b>					<b>46,034</b>

*Source: District 2014*

## 4. MAIN FIELD FINDINGS

### 4.1 Introduction

The Landscape Approach to Forest Restoration and Conservation (LAFREC) aims demonstrating landscape management for enhanced environmental services and climate resilience in one priority landscape. It aims to arrest and eventually reverse the on-going land conversion in the area through forest restoration (to the extent feasible) and promotion of agro-forestry approaches in a manner that will maximize ecological connectivity and hydrological function in the landscape, while also enhancing soil fertility, reducing degradation and providing non-timber products for marketing (e.g. fruits).

LAFREC is developed around a landscape approach which will bring the forest ecosystems into better management and develop multiple benefits. This will be achieved through the conservation and sustainable use of biodiversity, increased forest cover, climate change adaptation efforts together with combating land degradation and provision of livelihood alternatives to the impacted communities.

This project has three two components: (i) Forest-friendly and climate-resilient restoration of Gishwati-Mukura landscape, and (ii) research, monitoring and management.

The social assessment found that the proposed LAFREC components and activities are generally compatible with the needs of vulnerable social groups in the target locations researched. LAFREC will provide considerable opportunities for significant parts of rural communities that are directly engaged or otherwise related to agricultural production, people's livelihoods and environmental protection.

It is believed that LAFREC will facilitate an increase in agricultural production which is coupled with an increase in trade and other income generating activities. It will also help increase livelihood

activities and employment opportunities for the concerned people while raising environmental awareness and landscape management approaches and techniques.

## 4.2 The Socioeconomic and Cultural Fabric of People Living in LAFREC Site

### 4.2.1 People around Gishwati and Mukura forests

People around Mukura forest reserve mainly live on agriculture. Their livelihood is directly linked to cultivation and cattle rearing. However, in addition to these main activities, people on Mukura live on mining, logging, bee keeping. Their crops include tea, potatoes (mainly Irish), maize, beans, etc. The mining, now more than artisanal, is mainly practised by young men and focuses on coltan, cassiterite, wolfram (minerals people prevail in that region).

Activities that spoil the environment are related to the following: firewood, charcoal, mining, logging, water sources, sand and calcareous soil\* quarrying, fires, etc. The fires were caused by people who wanted to expand the grazing land but the practice stopped.

The people neighbouring Gishwati forest also live on agriculture. They cultivate tea, potatoes (mainly Irish), maize, beans, etc. Many of them are also cattle keepers. The activities that spoil the forest also include firewood, charcoal, mining, logging, water sources, sand and calcareous soil\* quarrying. The forest is also used for medicinal plants.

### 4.2.2 People living in the corridor

Much as some people neighbouring Mukura and Gishwati have heard of that corridor, there is not physical boundary of that corridor. They only know that there will be a corridor linking Mukura forest reserve and Gishwati forest reserve.

So far, the place that might serve as the corridor is a normal inhabited place scattered with hills and valleys. It has people's plantations of different crops and their houses. Crops in the area include tea, Irish potatoes, peas, artificial tree plantations mainly eucalyptus and pinus, grazing land for cows, sheep and goats, etc. The place also has some infrastructure and public facilities like schools, health centres, churches and small-scale shops and markets. This area accommodates rich people (reportedly enriched by mining).

People in LAFREC area understand the importance of the corridor linking Gishwati and Mukura forests. Some old people even disclosed that they heard from their grandparents that these forests used to be linked before human settlements degraded it. They believe that the corridor:

- Can promote tourism
- Can make tourism-related activities develop
- Can extend the existing protected forest which was getting smaller and smaller

- Can help protect different water sources
- Can allow introduction of new species
- Can restore a certain order in seasons, which have become unpredictable
- Should have natural-like flora and fauna

This constitutes an opportunity that LAFREC will exploit, since concerned people know about the importance of the corridor it will not be difficult to convince them to cooperate with LAFREC staff and indulge in LAFREC activities.

#### 4.2.3 People living in or neighbouring the buffer zones

While buffer zones are designated areas used to protect sensitive landscape patches (e.g., wetlands, wildlife reserves) from negative external pressures, corridors are used to connect the buffered landscape patches (USDA, 2014). USDA (2014) identifies buffer functions:

- Increase habitat area
- Protect sensitive habitats
- Restore connectivity
- Increase access to resources
- Shade stream to maintain temperature

Participants believe that Gishwati and Mukura buffer zones are not properly demarcated. They say that the use of these zones was not properly adapted to the neighbouring people. They also believe that a line of pinus should be considered for the buffer zones as these trees do not allow grazing grass, and therefore can offer more protection as cattle cannot penetrate when they cannot see grass.

#### 4.2.4 Attitudes towards the reserves

People are aware of the importance of Gishwati and Mukura reserves. They also understand the importance of the Corridor and the buffer zones. Old people linked the reduction of the reserves to changes that people are facing in the area. One of the farmers at Mwiwereko Centre expressed his understanding of the role of forest reserves in the following words:

*“In my young age, Mukura and Gishwati were considerably large forests. By then, we could not see properly their importance but now I feel it. When these forests were still in their original state, I could not see all these havocs like deadly thunders, devastating rains and suns, demolishing landslides and floods, etc. Our agricultural seasons were regular and easily predictable. Our harvests were very good and we enjoyed farming. We did not have these untimely and*

*terrible diseases. I think the spoiling of the forests might have contributed to what we are suffering from now,” (Personal interview with an old farmer in Mwiyeroko centre, Dehero Village, Karambo Cell, Mukura Sector in Rutsiro District on March 18, 2014).*

They all accept that people near the forests are spoiling these resources. They mentioned logging, firewood and charcoal, etc. They also mention that almost all the water sources used in the area originate from the reserves. Most adult and strong people, especially men in the area indulge in mining. The reserves and the area between these reserves are rich in coltan, cassiterite, wolfram, etc. All participants in the study believe that about 80% of people living near the reserves, especially people in the area between the reserves live on this mining. People in the periphery report that these people living on mining have considerably enriched themselves due to this activity. They say that these people even dig minerals in their own plots of land and many of them own cars and have started exporting their riches in other parts of the country.

People even observe that there is no way one can safeguard these forests without affecting the neighbouring population.

#### 4.2.5 Expectations of the population from LAFREC

People in LAFREC site said that they would welcome a project in line with landscape approach to forest restoration and conservation in their area. They said that they would like to see the project contribute to the following:

- ☞ Increase their adaptive capacity in response to climate change. Attraction of more tourists and investors
- ☞ Infrastructure like roads, electricity, hotels, etc.
- ☞ Increase in taxes
- ☞ Non-agricultural activities like trade, different types of art
- ☞ More employment opportunities
- ☞ Inclusion of communities in general and vulnerable groups in particular in reserve management
- ☞ Increase in people's livelihood and well-being

People in LAFREC site also expressed concerns that the project should consider for better results.



- ☞ There has been a remarkable weakness in the way people communicate development initiatives. This, in the past resulted in leaders being beaten for they were forcing unprepared residents to move.
- ☞ People need to be associated in establishing the needs and how they can be met. They are supposed to be sensitised, educated, and facilitated to accommodate change. They should be approached using various means and channels to ensure their cooperation. Local leaders, opinion leaders, clubs, traders, churches, schools, health centres, farmers need to be mobilized
- ☞ Project operators should effectively work with existing structures.
- ☞ Places where people are supposed to be resettled need to be prepared in advance and have all needed infrastructure
- ☞ Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over
- ☞ People should participate in determining the value of their properties. They should also participate in determining the needed compensation. Here they gave examples of houses built for resettled people but which are almost empty because they are not the types of houses beneficiaries needed
- ☞ People should not be told to move before they are compensated. On this issue people say that the law is clear, as they were told, that nobody can be told to move before he/she is compensated. However, there are cases of people who were told to move before compensation
- ☞ There has been a tendency to think that everything can be expressed in monetary language. People should be allowed to state what they want as compensation. For example one might need a similar plot of land elsewhere instead of money
- ☞ When projects move people they only concentrate on those that are moved and forget that there could be some people who are not moved but who were depending on the ones moved
- ☞ There should be agreement, collaboration and consultation among institutions dealing with environment and natural resources. Participants reported cases of officers in charge of mining who allowed mining activities without consulting REMA officials
- ☞ District officers pertaining to environment need to be empowered and facilitated to meet people. People said they rarely see them. There is no budget about forests and natural resources in Districts.

- ☞ Participants believe that projects should think of long lasting impact. They said that for some projects, there is not even a road leading to their actions. They said that projects utilise a lot of money but operate with Sectors with leaking roofs, very bad roads, shaky schools, etc. For them, this is why people easily forget about projects.

People in LAFREC area believe that any initiative that causes people to move or that breaks their sociocultural fabric should think of accompanying mechanisms. They said that much as when moved they would want the same or better situation, this cannot fully materialise. Participants expressed that there are things that cannot be easily or fully replaced. One of the participants expressed the following: “How can you replace good neighbourhood?”; “How can you replace one’s socialisation networks?”; “How do you replace the stress caused by moving everything?”; “How do you recover the time that one takes to cope with the new environment?”; “How do you replace the connections that a person built over years?”; “How can you restore the joy that I get when I see Satinsyi water every morning?”

Some people feel that their land can never be replaced. One old farmer in Ngororero District expressed the following: “I was given this land by my father as recognition of my loyalty to him. What monetary value can you give to that? Nobody can force me out of this place, not when I am still alive.”

Participants believe that much as people think they are compensated when relocated, relevant projects should think of other accompanying advantages that can help people’s full resettlement. They gave the following examples:

- ☞ Setting up sustainable businesses that can employ some of them
- ☞ Putting up infrastructure (like road, water and electricity) that can help develop other types of employment
- ☞ Paying school fees for a certain period of time
- ☞ Scholastic equipment and materials (e.g., note books bearing scripts and pictures about natural resources and Mukura-Gishwati conservation; T-shirts and pullovers bearing the same, etc.)
- ☞ Motivating children, e.g. rewarding best performers
- ☞ Paying health insurance for a certain period of time
- ☞ Supporting initiatives of vulnerable people (people with disability, orphans, widow (er)s, elders, etc.)

- ☞ Giving them agricultural seeds for a certain period

#### 4.3 Presence of Specific Vulnerable Social Groups in LAFREC site

LAFREC targets people neighbouring Mukura and Gishwati in all their categories. It will affect all community categories of socio economic and cultural interest as Becker et al., (2003) suggested:

- Elected officials
- Community service organizations and clubs
- Business owners and economic development
- Education interests
- Healthcare professionals and caregivers
- Historic or environmental protection (e.g., historians, conservation organizations)
- Land-Based Resource Production (e.g., farmers, loggers, miners)
- Community conservatives
- Community liberals
- Religious interests
- Minority and vulnerability interests (like porters, homeless, women, widow(er)s, child-parents and family heads)
- Newcomers (residence of 1– 3 years)
- Senior citizens (60 years of age and older)
- Other residents that might be identified during implementation of the project

However, there are vulnerable categories that need special attention during project design and implementation. The Social Assessment team understands vulnerability as a concept broadly encompassing all disadvantaged social groups in respect to their socio-cultural status as well as their sharing of benefits or negative effects of mainstream development activities. Theoretically, economic growth in LAFREC case within the agriculture sector- should be broad based and holistic, creating equitable access and choices to vulnerable social groups.

The Social Assessment identified several social groups in LAFREC area that are in a clearly disadvantaged or vulnerable position. They can be categorized as follows:

- g) **People with disability**
- h) **Women and female headed households**; categorically those women without access to farm land, female heads of households with little land and big family size including those with enough land but with shortage of labour and women in illegal marriage with unclear property rights,
- i) **Youth** who are unemployed and landless,

- j) **Orphaned children** and children who become **child family heads** whose inheritance right is abused by their custodians, and
- k) **Elderly** people who may have enough land but lack a social support network and cannot access labour.
- l) **Single parents**

Youth, children, orphans, elderly or single parent may have to be further gender disaggregated as specific proposed LAFREC activities may cause particularly negative impacts to either male or female members. Resource poor households are generally more vulnerable.

Additional location specific risk groups were also identified:

- a) **Farmers** who depend on communal land that might be gazetted or restricted for certain uses,
- b) **Any other person (miner, logger, quarrier, etc.)** who directly depends on the gazetted place/resource
- c) People who are solely **cattle keepers** who might find themselves in cultivation –devoted areas as well as **cultivators** who might find themselves in livestock-prone areas

In summary, in all visited places, vulnerable social groups, put together roughly, constitute about half of the total population. LAFREC is expected to open up opportunities. However, unless the very existence of such groups and the situation they live in is properly taken into account, there will be a danger of exclusion with potential impact of perpetuating poverty.

The history of Rwanda (genocide and other atrocities that country went through), diseases like HIV/AIDS, disasters and accidents, etc., caused a lot of widows, widowers and orphans, and sustained economic stress which might prevent resource-poor households from gainful engagement in LAFREC activities since cash for inputs, hiring of farm labour or marketing of produce is missing.

Youth, children, orphans or elderly may have to be further gender disaggregated as specific proposed LAFREC activities may cause particularly negative impacts to either male or female community members. Particularly youth is likely to engage in LAFREC and the programme has to ensure that activities do not create a situation where male youth engages in cash income generation, whereas female youth is restricted to carrying out poorly rewarded labour in primary production.

#### 4.3.1 People with disability

LAFREC needs to recognise that an equal society is an inclusive society, where reasons for exclusion are examined and addressed. It is also one which recognizes that disability is part of the human

condition in every society, rich and poor. Disability is not therefore a specialized concern but a fundamental issue of universal human rights.

LAFREC area has a significant number of people with disability who if impact is to contribute to real development are supposed to be brought on board and associated. The following is an estimate of the rate of people with disability in LAFREC area: Rutsiro District 3.3%, Ngororero 3.3%, Nyabihu 4.9%, Rubavu 2.7% (MINALOC, 2010)

#### 4.3.2 Women and Girls

In a predominantly agricultural society like Rwanda and more emphatically, LAFREC area, women play a significant role in agricultural production, household work and income generating activities. Although men do most of the ox ploughing, women are involved in multiple tasks including land levelling, weeding, harvesting, threshing or storing in addition to their regular household duties. They particularly engage in 'backyard' agricultural activities, including vegetable production, poultry rearing and feeding and watering calves and shoats. In field work, women are particularly active in weeding during the growing season protection and winnowing during threshing operations. Furthermore, women are responsible for taking care of the sick, elderly and orphan children.

Women are normally also responsible for much of the activities to earn extra income for meeting basic household needs. The more pervasive poverty is the higher workload women experience. Rural women particularly are tasked with carrying cereals for flour milling and fetching water and collecting fuel wood for ever increasing distances due to high environmental degradation.

The fuel wood issue is a growing concern in the country as most Rwandans live on biomass burning for cooking and warming. There have been some focused interventions relieving fuel wood shortages but they are yet to produce good results. Even the fuel wood saving stoves (Rondereza) introduction has not reached all the needy rural communities due to various factors.

These and several other factors lead to a situation where rural women have too little spare time to rest properly, to feed their children, to maintain household hygiene, address family matters and to focus on their personal health care that is directly related to their physical and mental strength.

#### 4.3.3 Female Headed Households

Even though data on female headed households that were given during the study were just an approximation, participants showed that the number of households headed by women is significant. The District Reports 2012 also confirm the assumption. These reports show that female-headed households are presented as follows: Rutsiro District 28%, Ngororero District 34%, Nyabihu District 53.2%, and Rubavu District 30.1%. A significant proportion of female headed households are made up

by widows in childbearing age. Female headed households with smaller family size but access to land face a shortage of labour. They depend on external labour, either through renting or share cropping farming arrangements, leaving them only with partial benefits from their farm lands.

Women from poorest households as well as resource poor female headed households and the elderly women are stuck in poverty, their main livelihood being charcoal and fire wood collection and sale. It is hard to imagine how such women will benefit from LAFREC activities unless specific interventions ensure their participation.

It is worth noting that even in normal male-headed families women might need special consideration since men sometimes do not use the income they get in the interest of the family. In the field study, women reported that in most cases when men get money, they rush to the pubs and finish all the money drinking beer without thinking about their families.

#### 4.3.4 Youth

In all studied areas, landless youth population is big. The youth in LAFREC area occupy a very important percentage (Rutsiro 35%, Ngororero 36.7%, Nyabihu 38%, Rubavu 35%). They have to be taken into consideration if the project is to have sound impact. During the social assessment, many youth reported to be landless. Most of the male youths are engaged in agricultural related activities such as casual labour works, contract farming and trading of agricultural produce. Female youths are engaged in homestead income generation activities like poultry, livestock rearing and vegetable production.

Female and male youths who are either school leavers or drop-outs also secure incomes through supported organized group activities like livestock fattening, tree planting, irrigation canal and roof catchment construction or sand, stone and white calcareous soil collection for construction purposes.

#### 4.3.5 Children and Orphans

Although their exact numbers are not always known, all consulted people have a commonly shared concern on child vulnerabilities in general and the deprivation of orphans in particular. However, even existing data from 2012 Census show that orphans occupy a good percentage. For example in Rutsiro District orphans occupy 15.6% of the District population.

The well-being and social protection of these orphans depends on their kin who serve as custodians. In some instances, orphans inheritance rights are abused by their own relatives and as a result, their benefit from inherited land is controlled by others.

Much as the participants did not come up with exact numbers, they indicated that there are a good number of child-headed families in LAFREC area. Participants in all concerned Districts indicated the existence of such child-headed households.

#### 4.3.6 Elderly

The national level population of the elderly above 65 years of age stands at 3% of the total population. The elderly are often endowed with access to resources and land. These people possess some land that they are not able to exploit. They sometimes employ landless people in ploughing, weeding and harvesting.

However, in many places visited, there are elders who have completely lost their extended family ties and therefore lack the ability to fully utilize their land, thereby endangering their social security. Most of them are very resistant to change and need a lot of communication and advocacy efforts for them to accept new initiatives or policy.

Unless this group of elderly land holders receives special recognition through LAFREC supported activities, they will definitively be excluded and the valuable land they hold will remain largely idle.

#### 4.3.7 Single Parents

Much as participants in the assessment did not provide exact numbers of single parents in the LAFREC area, they indicated that in all the concerned Districts, there are a good number of single parents. These include the single mothers, mainly young girls who prematurely gave birth to children because of various reasons. They are people who actually need parental care but who unintentionally got impregnated and produced children (child parents). They have negative attitudes towards life and are somewhat hopeless. This category also includes parents (male and/or female) who, due to various reasons, got separated, divorced or widowed but still rear children. LAFREC would do good to also associate them and make them feel part and parcel of the society capable of enjoying the same rights as others.

#### 4.3.8 Anticipated Positive LAFREC Impact

There are ample opportunities for the success of LAFREC as the designed components are theoretically compatible even with the needs and resources of vulnerable social groups. Landscape approach to natural resource restoration and conservation will be fully understood and applied. People will be provided with livelihood opportunities that will help them live comfortably without endangering natural resources. Demand and improved market prices for agricultural products encourage use of improved technologies and contract farming arrangements. Access to market information is enhanced and mobile phones are widely used. The project does its best to organize different social groups, especially landless youth, in agriculture production. LAFREC can build on the many existing self-initiated and organized groups. New initiatives to support orphans, elders and

disabled groups will be achieved by mobilizing resources from different organizations in the LAFREC area and the community at large.

#### 4.4 Anticipated Social Risks

The Social Assessment identified a number of specific risks linked to LAFREC components that need to be mitigated for achieving a broad participation of women, youth and other vulnerable social groups.

##### 4.4.1 Possible involuntary resettlement

Much as LAFREC does not intend to relocate people, there is a low probability for some people to be moved. The would-be buffer zones are inhabited and people did not respect the distance they are supposed to keep from the core reserve. Therefore, much as the Government and/or other concerned institutions might assist in resettling some of these people, the project might need to ensure that the resettlement is in line with World Bank Social Safeguards. Relevant recommendations are therefore provided in this Social Assessment Report.

##### 4.4.2 Getting people to accept to introduce new species and farming practices

LAFREC intends to encourage and help people to adhere and abide by existing laws; policies and regulations in relation to the restoration and conservation of Mukura and Gishwati forest reserves. In the core reserves, LAFREC might be required to plant new species especially indigenous trees as well as uprooting the harmful species like eucalyptus. In the buffer zones, LAFREC in collaboration with concerned institutions will contribute to campaigns to sensitise people to friendly cohabitate with the zones by exploiting them with certain agreed-upon restrictions. There will be practices which will be allowed in certain specific places and others that will not be allowed in certain specific places. In the corridor, LAFREC will not restrict or impose activities. It will however engage in a series of sensitisation and advocacy campaigns to make people willingly accept certain farming methods and practices that are in line with forest restoration and conservation, agricultural productivity and land protection. This might entail sensitising people to adopt certain anti-erosive and climate-resistant methods and accept to plant certain trees (especially indigenous trees) that cannot harm their usual crops in their plots. These practices will definitely interfere with people's socioeconomic and cultural fabric which will require certain measures to guard against social conflicts and destabilisation which might cause people's resistance to the noble objectives of the project.

##### 4.4.3 Social-Environmental Linkages

Social well-being and environment are closely interlinked. Reversing environmental degradation and poverty eradication are mutually reinforcing imperatives and have to be implemented together. The



World Bank has been encouraged to provide greater attention to environmental sustainability. Of relevance from the SA perspective is the fact that effects of environmental degradation are likely to hit the hardest those that are already disadvantaged. Traditionally, specific natural resources are utilised primarily by specific groups and according to gender and age in a rural community for either domestic or productive use. To reach the objectives of LAFREC activities, current and anticipated climate change impacts must be considered. People confirmed change in precipitation during the past decade, with more unpredictable rainy seasons and more intense rainfall. This will directly impact on the outcome of a lot of initiatives and activities.

Climate change must also be considered for choice of crops and production systems, training modules, size and allocation of infrastructure projects etc. Not considering climate change could increase the costs of interventions, as well as the vulnerability of these people to erratic weather patterns affecting e.g. food security. If new crops and technologies are introduced, they should be combined with traditional agricultural methods and there needs to be a **social protection** measure, e.g. **farmer insurance** related to crop productivity.

#### 4.4.4 Formal Access to Finance

Access to credit is found to be one critical factor for LAFREC to successfully achieve its objectives. In all visited places, there is scarcity of micro finance institutions (MFI), and in some cases, there is more than one UMURENGE Saving and Credit Cooperative (SACCO) branches. There are also a few banks like Banque Populaire du Rwanda and Bank of Kigali that have started their operations but which are not yet fully settled.

Women, youth and other farming households face two major barriers to access the MFIs services. One of the barriers is the group guarantee loan system which is the dominant lending modality in the absence of material collateral. This system is less preferred by borrowers, besides the loan size is too small to expand or diversify economic activities in a larger scale. The other barrier felt especially by growth-oriented farmers and youths is that existing loan products are rigid and small. Farmers therefore continue to become the prey of individual money lenders, who largely take the form of cash-for-in kind exchange.

#### 4.4.5 Non-Financial Services

First, unfavourable price changes that mostly follow seasonal variations are reportedly the common type of market risk for the farmers across LAFREC area. Significant increases in input prices or decreases in output prices can reduce or eliminate micro enterprise profits. In addition, an enterprise can be adversely affected by disruptions in vital business services such as marketing channels, and

transport. Losses from market risks lower the return to the household's investment in the micro enterprise.

Secondly, the commonly shared features of the visited areas are: (i) wastefulness and extravagant behaviours associated to customary practices, (ii) low saving habit in any form either cash or material, (iii) very low enterprising culture which is limited to a pre-entrepreneurial stage, and (iv) absence of properly tailored Business Development Services (BDS).

Strong, 'bottom-up' participation of women and youth is assumed in LAFREC. Youth and women have least exposure and experience to be competitive in the market. They are therefore unlikely to become fully engaged in the more profitable LAFREC activities, for example in agribusiness and in market-oriented agricultural commercialization, unless tailor-made interventions are designed to 'bring them on-board'.

Strong institutions significantly encourage trust, promote property rights and avoid the exclusion of the different sections of the population. Particularly grass root level institutions play an important role in maintaining the interest of the local people, safeguarding their physical cultural resources, facilitating development initiatives, as well as mitigating unexpected adverse effects.

In each visited area, some agriculture development agents for crop, livestock, natural resources and irrigation are found. However, development agents that monitor Vulnerable Social Groups are not available. No specific entity at this level, besides certain NGOs works **systematically** with social and vulnerability issues. LAFREC could help put in place such **social development agents** that are equipped with the necessary skills and implements to facilitate the inclusion of Vulnerable Social Groups in LAFREC.

#### 4.4.6 Gender Aspects and Institutional Capacities

There is a concern that good policies / strategies are written but the process of translating provisions into operational practice is still wanting. There is a need to build capacity of institutions at various levels to ensure specific focus on women and youth.

Evidence shows that qualified staff and better resources are based at higher levels of government institutions. The lower level such as cells and villages where the brunt of the responsibility lies do neither have the necessary human resources and supplies (office facilities and motor bicycles/cycles) for community work nor experienced staff for operation and monitoring purposes.

Staff from concerned sector offices that are trained in gender analysis and mainstreaming to spearhead /oversee the planning process, monitoring and support in applying criteria for proper evaluation of LAFREC implementation in relation to women, youth and other VSGs should train and assist to ensure that social issues are integrated in LAFREC implementation.

#### 4.4.7 VSG Sensitive Cross-Sectorial Coordination

A lack of cross-sector planning is likely to impact negatively on LAFREC when it comes to applying socially inclusive approaches. Some staff of several social institutions in the visited areas was not aware of the project at all. Experts in these offices, after the consultation meetings, became more interested in making their contribution to the project and facilitate its implementation.

There is a need to assist in increasing staff skills in general project cycle management, especially in planning and analysis, monitoring and evaluation, but also specifically in the techniques of planning & budgeting, monitoring and evaluation that is sensitive to the needs of vulnerable community members.

#### 4.4.8 Access to Information for All

LAFREC implementation will have to consider the issue of equitable access to information. Experience from similar projects shows that crucial information about upcoming development initiatives like LAFREC first of all reaches local elites that may monopolize this knowledge for a considerable amount of time. LAFREC design, budget allocation and implementation of investments and trainings must include awareness campaigns and continued communication and advocacy mechanisms that reach even those that often are not participating in 'regular' meetings at community levels.

#### 4.4.9 Monitoring Capacity

Experts capable of implementing and undertaking M&E of project components are lacking. LAFREC might need to have an adequate number of qualified staff to effectively implement the project.

A monitoring system with simple indicators should be put in place that captures exactly who benefited from project investments to prevent that LAFREC benefits are reaching only already better-off local elites.

#### 4.4.10 Local Level Actor Coordination and LAFREC Task Forces

The implementation of LAFREC requires coordinated efforts among the different sectors. The active participation of these stakeholders in a) decision making and b) continuous provision of advice is crucial. Their participation is also essential to monitor the progress of the project at each step and speed up implementation when needed.

Non-state actors are often having their focus on poor and marginalized groups of society. They also possess a lot of experience on 'what works and what doesn't. LAFREC should definitely use the opportunity to tap into these experiences for making the project more responsive to the needs of vulnerable groups in an efficient and effective manner.

#### 4.5 Recommendations: Risk Mitigation Measures and Strategies

Women and youth are specific LAFREC target groups. LAFREC must reflect the fact that they actually make up the majority of the project site, and that they are major productive actors and crucial for any sustainable rural poverty alleviation. LAFREC cannot afford to treat them as passive recipients or exclude them from full participation. To ensure that youth, women and other vulnerable social groups identified by the Social Assessment participate and benefit as intended, it is important to:

- a) Revisit the programme design and its components to create additional opportunities for these groups of society,
- b) Include mechanisms that promote their full participation in the entire project cycle
- c) Build the capacity for staff entrusted with overseeing actual implementation of LAFREC activities.
- d) Use communication and advocacy, not as a mere one-time activity but as an integral component that will accompany the project in all its steps and keep all stakeholders, especially VSGs focused

##### 4.5.1 Getting people's acceptance and cooperation and satisfaction of LAFREC activities

During the recent relocation process of people in Gishwati forest, authorities met problems at the beginning. Due to the strong attachment the people have to their place (fertile land compared to other places in the country, presence of minerals, etc.) they were not willing and prepared to move. Participants in the Social Assessment revealed that authorities who tried to force people to move were beaten by people who were even ready to die instead of leaving their places.

##### *Measures*

- People need to be associated in establishing the needs and how they can be met. They are supposed to be sensitised, educated, and facilitated to accommodate change. They should be approached using various means and channels to ensure their cooperation. Local leaders, opinion leaders, clubs, traders, churches, schools, health centres, farmers need to be mobilized
- Project operators should effectively work with existing structures.
- Places where people are supposed to be resettled need to be prepared in advance and have all needed infrastructure

- Alternatives to activities like mining and logging (especially for people that were exploiting their own plots of land) should first be pondered over
- People should participate in determining the value of their properties. They should also participate in determining the needed compensation. Here they gave examples of houses built for resettled people but which are almost empty because they are not the types of houses beneficiaries needed
- People should not be told to move before they are compensated. On this issue people say that the law is clear, as they were told, that nobody can be told to move before he/she is compensated. However, there are cases of people who were told to move before compensation
- There has been a tendency to think that everything can be expressed in monetary language. People should be allowed to state what they want as compensation. For example one might need a similar plot of land elsewhere instead of money
- When projects move people they only concentrate on those that are moved and forget that there could be some people who are not moved but who were depending on the ones moved
- There should be agreement, collaboration and consultation among institutions dealing with environment and natural resources. Participants reported cases of officers in charge of mining who allowed mining activities without consulting REMA officials
- District officers pertaining to environment need to be empowered and facilitated to meet people. People said they rarely see them. There is no budget about forests and natural resources in Districts.
- Participants believe that projects should think of long lasting impact. They said that for some projects, there is not even a road leading to their actions. They said that projects utilise a lot of money but operate with Sectors with leaking roofs, very bad roads, shaky schools, etc. For them, this is why people easily forget about projects.

#### 4.5.2 Accompanying resettled or relocated people for full resettlement

People who got resettled recently from Gishwati in Nyabihu District show a high level of dissatisfaction of their living conditions after resettlement. People in LAFREC area believe that any initiative that causes people to move or that breaks their sociocultural fabric should think of accompanying mechanisms. They said that much as when moved they would want the same or better situation, this cannot fully materialise. Participants expressed that there are things that cannot be easily or fully replaced. One of the participants expressed the following: “How can you replace good neighbourhood?”; “How can you replace one’s socialisation networks?”; “How do you replace the

stress caused by moving everything?"; "How do you recover the time that one takes to cope with the new environment?"; "How do you replace the connections that a person built over years?"; "How can you restore the joy that I get when I see Satinsyi water every morning?"

Some people feel that their land can never be replaced. One old farmer in Ngororero District expressed the following: "I was given this land by my father as recognition of my loyalty to him. What monetary value can you give to that? Nobody can force me out of this place, not when I am still alive."

### Measures

Participants believe that much as people think they are compensated when relocated, relevant projects should think of other accompanying advantages that can help people's full resettlement. They gave the following examples:

- Setting up sustainable businesses that can employ some of them
- Putting up infrastructure (like road, water and electricity) that can help develop other types of employment
- Paying school fees for a certain period of time
- Scholastic equipment and materials (e.g., note books bearing scripts and pictures about natural resources and Mukura-Gishwati conservation; T-shirts and pullovers bearing the same, etc.)
- Motivating children, e.g. rewarding best performers
- Paying health insurance for a certain period of time
- Supporting initiatives of vulnerable people (people with disability, orphans, widow (er)s, elders, etc.)
- Giving them agricultural seeds for a certain period
- Etc.

#### 4.5.3 Facilitating Women and Girls Participation in LAFREC

If LAFREC wishes to succeed in increasing women's active participation in the program, the various proposed activities must consider the element of female time poverty.

Most rural women in LAFREC site cannot be considered a productive force *per se* unless they are given the means to free time for income generating activities. They also need spare time to attend

participatory planning exercises, training sessions, for forming of associations and for taking part in project monitoring.

As long as 'traditional' duties prevent them from doing so, it is likely that women will not participate in LAFREC as expected.

#### *Measures*

- 'Roll out' the existing regional gender mainstreaming guidelines.
- Consider initiatives that can actively reduce work load of women and girls.
- Ensure that the introduction of new labour intensive production, processing, transporting, marketing or rural infrastructure maintenance activities in the LAFREC value chains do not create additional work load on women and girls.
- Include the issue of sharing of expected work load between men and women in sub-project screening criteria.
- Insist on inclusion of women in entire sub-project cycle.
- Consider women's role in the agricultural calendar when timing sub-project implementation.
- Create access to appropriate technology for women in production, processing and transport.
- Create access to alternative energy sources to free time for income generating activities.

#### **4.5.4 Broaden Access to Business Development Services**

Commonly shared features of the visited areas are lavish spending during times of plenty and very low saving rates. This is usually coupled with a low enterprising culture at pre-entrepreneurial stage, and compounded by the absence of properly tailored Business Development Support Services. The above applies to male and female headed households alike, but particularly youth and women have the least exposure and experience for becoming competitive actors in the agriculture commodity market.

#### *Measures*

The SA team recommends Business Development Services to be given ample consideration in LAFREC with the following specific interventions:

##### **a) Training:**

- Include demand-driven, business skills training for women and youth using existing good practices

##### **(b) Value Chain Support:**

- Identify and sub-contract BDS providers from private and public sector.

- BDS facilitators provide business training for existing self-initiated and organized women and youth groups resulting in concrete business plan and value chain development by the operator.
- Involve agricultural subject matter specialists and other professionals for training and on-the-spot advice according to specific value chain needs.
- Use BDS facilitators to link the business operators' projects with LAFREC steering committees for support.

#### 4.5.5 Broaden Access to Financial Services

Existing financial services by rural cooperatives are underdeveloped. Existing Microfinance institutions have limitations to reach out with small loans to youth and women clients, while growth-oriented entrepreneurs cannot obtain sufficiently large loans.

##### *Measures*

Appropriate Financial services should be available to all farmers that wish to engage in income generating and growth enhancing activities. The proposed options are generally applicable, but can also be used for creating tailor made loan products specifically targeting women, youth and other marginalized or vulnerable groups of rural society. Commercial banks and MFIs are the main entry points for LAFREC. Two options might emerge:

##### **(a) Credit Guarantee Arrangements**

- Introduce “matching grant scheme” through commercial banks that have the capacity to use own resources.
- Provide ‘seed capital’ through soft loans to rural MFIs that have a better reach to women and youth.
- Support MFIs in designing tailor-made loans for particularly marginalized groups of society.

##### **(b) Warehouse Receipts System**

- Introduce a Warehouse Receipts System, also known as inventory credits, offering credit for inventory of products held in storage. Stored agricultural commodities can serve as collateral, be sold, traded or used for delivery against financial instruments including future contracts.
- Provide technical and capacity support to existing cooperatives and unions in the area of crop fumigation, stock control, management and warehouse construction.

#### 4.5.6 Recognizing Social-Environmental Linkages

Social well-being and environment are closely interlinked and already vulnerable groups are most likely to suffer from further environmental degradation. LAFREC cannot aggravate stress on already



overused natural resources. Increases in productivity must not only be achieved by using costly externally supplied inputs that resource poor HHs cannot afford. Mitigation measures against increasingly erratic weather patterns must be included in the project.

#### *Measures*

- Consider the limited ability of vulnerable groups to adopt new crops/new technology
- Promote application of low-input soil improvement techniques affordable for resource poor HHs
- Identify mitigation measures for climate change effects on resource poor farming HHs with labour shortage and/or those on already marginal lands

#### **4.5.7 Training and Information Needs at Cell levels**

LAFREC should provide capacity building support in a broad range of gender, social and vulnerability issues, but also insist that responsible institutions are staffed by people with relevant skills.

The coordination between various units working with Vulnerable Social Groups (VSG) issues is equally important.

#### *Measures*

- Include a set of minimum criteria that have to be met before funds for sub-projects can be released covering 'minimum staffing requirements according to staffing plan are met'.
- Capture capacity gaps in regard to working with vulnerable groups in comprehensive training needs assessment.
- Consider putting in place well-trained and equipped Social Development Agents.
- Design and implement a VSG capacity building strategy.
- Institutionalise coordination between various LAFREC units and offices working with VSG issues.
- Design and implement an initial awareness campaign and information dissemination strategy on social and environmental issues.

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World Bank Involuntary Resettlement Operational Policy OP 4.11 & 4.12

## APPENDICES

### APPENDIX I: SOCIAL ASSESSMENT OF THE LANDSCAPE APPROACH TO FOREST RESTORATION AND CONSERVATION (LAFREC) PROJECT AREA: INTERVIEW AND DISCUSSION GUIDE

The data needed for the social impact assessment of LAFREC are both qualitative and to a lesser extent quantitative. However, the paradigm being relativist and the approach being predominantly qualitative, the consultant will not work with strictly designed questionnaires with pre-coded and anticipated answers geared towards purely statistical analysis and inferences. Instead, much as the consultant will also use some numerical data, the design remains relativist and qualitative. He will therefore predominantly use less structured interviews and discussions intended to elicit informants' long narrations and productions in order to maximise the chances of exhausting sociocultural data associated with LAFREC. The following is a guide that will lead interviews and discussions. It is worth mentioning that it will be used as a guide and follow-up questions, adjustments and explanations will be needed in the actual discussions to make it more understandable and useful.

#### I. INFORMANT PARTICULARS

1. Name (Optional)
2. Gender
3. Place of birth
4. Place of work/living
5. For how long have you been living here?
6. What made you leave your birth place? (if applicable)
7. How do you earn a living?

#### II. CONNECTION WITH GISHWATI AND MUKURA

1. What do you know about Gishwati Forest Reserve/ Mukura Forest Reserve/ Gishwati-Mukura corridor?
2. How have Gishwati Forest Reserve/ Mukura Forest Reserve/ Gishwati - Mukura corridor contributed to the development of this area?

3. Outline how Gishwati Forest Reserve/Mukura Forest Reserve/Gishwati- Mukura corridor are linked to your everyday life
4. What are the sociocultural values attached to Gishwati Forest Reserve/Mukura Forest Reserve/Gishwati- Mukura corridor?
5. How do you think these resources benefit the neighbouring population?
6. Are there people who spoil these resources? Who are they and how do they spoil the resources? Why do they spoil the resources? What do you think can be done to make them to become friendly to those resources?
7. Describe the social and cultural characteristics of displaced communities
8. What formal and informal institutions (e.g., community organizations, non-governmental organizations) may be relevant to the consultation strategy and to designing and implementing the livelihood activities?
9. What historical and socio-economic situation of the households displaced from the reserve?

### III. RESETTLEMENT INITIATIVES

1. What is the state of livelihoods of resettled people? What are the most vulnerable groups?
2. Do you feel vulnerable to climate change? How do you cope with changes in climate?
3. What resettlement interventions have taken place in your area? What is your appreciation of those interventions?
4. What do you know about Gishwati Water and Land Management (GWLM) Project? What is your appreciation of GWLM interventions?
5. Is there an established value chain for agricultural produce?
6. Has there been an introduction of non-agriculture livelihood activities recently? Eco-tourism, handicrafts, poultry, etc.? What is your appreciation of these activities?
7. What is your appreciation of the district government's institutional capacity and existing structures for coordination to manage resettlement and livelihood activities?
8. What has been the role of the Gishwati Resettlement and Land Redistribution Commission?

## VI. NATURAL RESOURCES USE

1. What common property natural resources from which people derive their livelihoods and sustenance? What systems do people use for land tenure and transfer?
2. What are the patterns of social interaction in the resettled communities? What are their social networks and social support systems? How have these supported the resettled families?
3. What households participate in artisanal mining?
4. What percentage of the livelihood do the artisanal miners owe to mining?
5. What are your perceptions of climate vulnerability and coping strategies?
6. Is there any alternative source of livelihood that can replace mining? How are people likely to adopt it?
7. Are there other alternatives for natural resource use in your everyday activities? How manageable and accessible are they?
8. What is your understanding of eco-tourism?

## IV. IMPORTANCE ATTACHED TO THE SITE

1. How close is your place (where you live) to these resources? Outline how this place is connected to your everyday life.
2. How important is this place (where you live) to you?
3. What sociocultural values do you attach to this place?
4. How close are you to Mukura Forest Reserve buffer zones? Describe the cultivation, land use, community grazing grounds and other natural resource use within the buffer zones. Are you comfortable with land use in these zones? What would you suggest for cultivation, land use, community grazing grounds and other natural resource use within the buffer zones? What social services and other community infrastructure that could be impacted?
5. How many people would be affected if these zones are enlarged? Would you feel comfortable if these zones are enlarged? Why or why not?
6. How close are basic facilities like schools, hospitals, church, market, etc.?
7. What do you think you can lose if you are sent somewhere far from this place?

8. In case somebody wants you to leave this place, what would you require him/her to provide in return?
9. What is your understanding of co-management and sustainable use arrangements for the buffer zone, benefit-sharing arrangements and local participation in tourism development?

#### IV. ATTITUDES TOWARDS LAFREC

1. What sustainable land management and agroforestry techniques or initiatives did you have so far? Would you welcome more initiatives in this regard?
2. Would you participate in micro-catchment rehabilitation that would include setting aside some land as protection forest strips in return for investments in the productivity of agricultural lands – e.g. through intensive investment in terracing? Why or why not?
3. What is the state of community grazing and range management?
4. Do you know the Landscape Approach to Forest Restoration and Conservation (LAFREC)? If yes, what do you know about it? How did you learn about the project?
5. Are you comfortable with the project? Why or why not?
6. What would you expect the project to do for you?
7. Is there anything you feel can prevent the project from being implemented or succeeding?
8. What would you recommend project implementers to do in order for the project to realise its objectives without jeopardising your livelihood and well-being?

## APPENDIX 2: LIST OF PARTICIPANTS IN THE SOCIAL ASSESSMENT

## Participants in Rutsiro District

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



			Secondary School
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### Participants in Nyabihu District

	Full Name	Sector	Responsibility
1.	Innocent HABUMUREMYi	BIGOGWE	BIKINGI Village Leader
2.	Innocent HAKIZIMANA	BIGOGWE	BIGOGWE Sector Agronomist Officer
3.	Innocent KAJONJORI	BIGOGWE	Farmer, member of Batwa Community
4.	Jacqueline NYIRAKAMANZA	BIGOGWE	Farmer, one of the people relocated from Gishwati forest
5.	Josephine MUHAWENIMANA	BIGOGWE	Farmer, member of Batwa Community
6.	Gashabuka HITIMANA	BIGOGWE	Farmer, relocated from Gishwati forest
7.			
8.			
9.			
10.			

### Participants still living in the Core Gishwati forest

	Full Name	District	Responsibility
1.	Pacifique NSENGIMANA	NYABIHU	Still living in part of Gishwati forest (legally)
2.	Paul SIBOMANA	NYABIHU	Still living in part of Gishwati forest (legally)
3.	Hassan NSABIMANA	NYABIHU	Still living in part of Gishwati forest (legally)
4.	Salima NIYONKURU	NYABIHU	Still living in part of Gishwati forest (legally)
5.			
6.			

7.			
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Participants relocated from Gishwati forest (Grouped in Bikindi Village, Kijote Cell, Bigogwe Sector, Nyabihu District

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

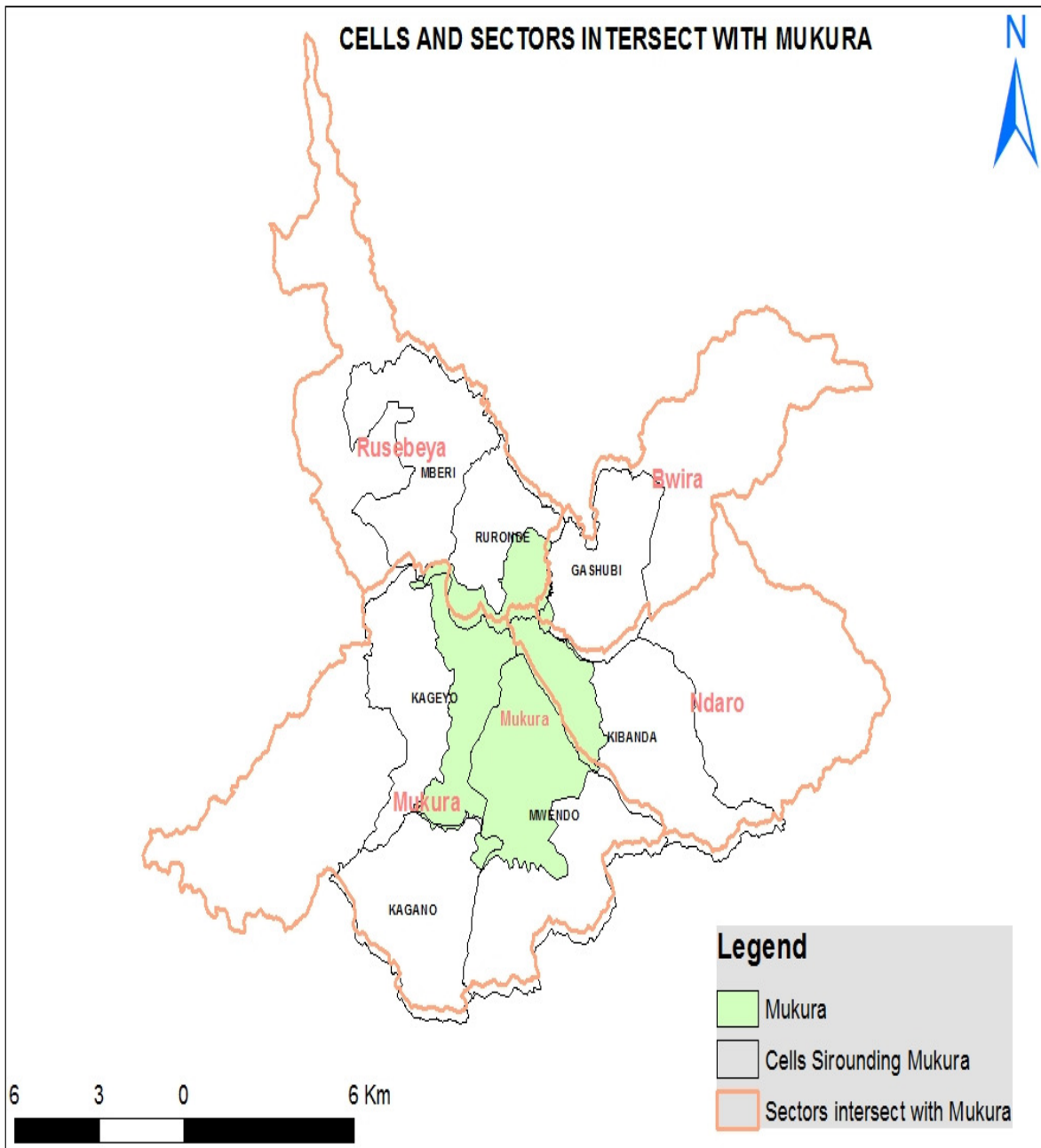
Participants in Ngororero District

	Full Name	Sector	Responsibility
1.	Emmanuel MAZIMPAKA		Vice-Mayor Economic Affairs
2.	Elisaphane NTAKIRUTINKA	MUHANDA	Farmer
3.	Edouard MAGERA	MUHANDA	Farmer
4.	Rabani RUKERA	MUHANDA	Farmer
5.	Eustache MBAYIHA	MUHANDA	Farmer
6.	Alphonse NDADIJIMANA	MUHANDA	Farmer
7.	Innocent HITIYAREMYE	MUHANDA	Farmer
8.	Jean Damascene NKINAMUBANZI	MUHANDA	Farmer
9.	Francois HAKIZIMANA	MUHANDA	Farmer
10.	Gilbert HATEGEKIMANA	MUHANDA	Farmer
11.	Etienne MUNYENSANGA	MUHANDA	Farmer

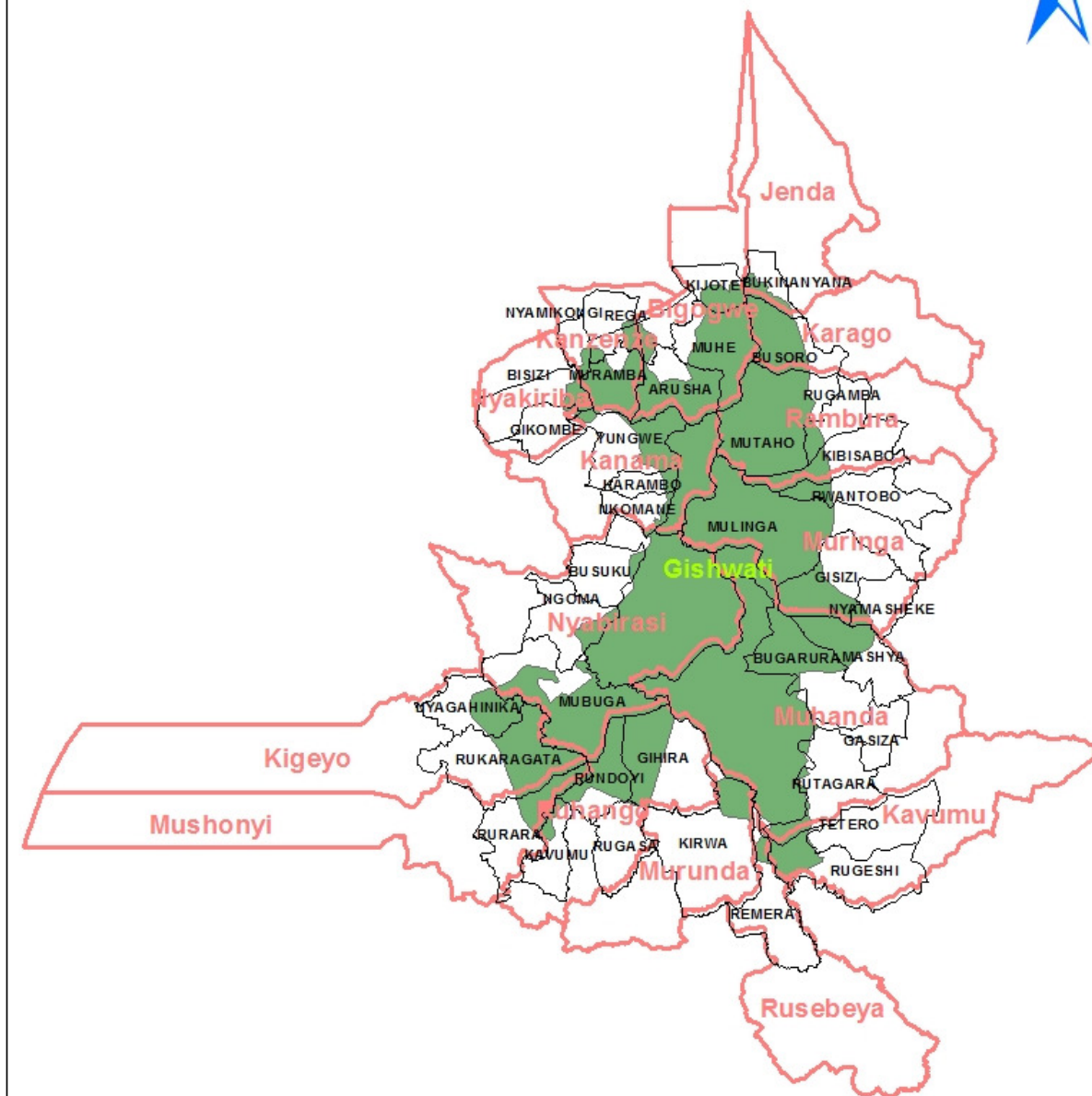
12.	Theogene HAKUZIMANA	MUHANDA	Farmer
13.	Vincent CYIZA	MUHANDA	Farmer
14.	Aloys ZIGIRANYIRAZO	MUHANDA	Farmer
15.	Evariste KARONKANO	MUHANDA	Farmer
16.	Silver SEGATASHYA	MUHANDA	Farmer
17.	Christine AYINGENEYE	MUHANDA	Farmer
18.	Jean Damascene MANIRIHO	MUHANDA	Farmer
19.	Jeannette MUHAWENIMANA	MUHANDA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

NOTE: 25 participants in RUBAVU Districts; 10 participants in RUTSIRO Districts and 15 participants in NYABIHU Districts declined to give their personal details including their names for, as they said, their own personal reasons.




APPENDIX 3: MAPS OF LAFREC SITE



### CELLS AND SECTORS INTERSECT WITH GISHWATI



#### Legend

-  Gishwati\_Cells
-  Gishwati
-  Sectors intersect with Gishwati

