Climate Investment Funds

FIP/SC.19/9
November 17, 2017

Meeting of the FIP Sub-Committee
Washington D.C.
Wednesday, December 13 – Thursday, December 14, 2017

Agenda Item 9

FIP INVESTMENT PLAN FOR RWANDA

PROPOSED DECISION

The FIP Sub-Committee, having reviewed the Document FIP/SC.19/9, *FIP Investment Plan for Rwanda,* [endorses] the investment plan.

The Sub-Committee recognizes the extent to which the pledges by the contributing member countries to the FIP have been allocated, in line with its decision in May 2015. The Sub-Committee also notes that should resources become available following the implementation of the FIP pipeline management policy, these resources could be provided to the FIP new countries for implementation of their investment plans and the Sub-Committee will take a decision on allocation of these resources once they become available.

The Sub-Committee encourages the Government of Rwanda and the MDBs to actively seek resources from other bilateral or multilateral sources to fund further development and implementation of the projects foreseen in the investment plan.

REPUBLIC OF RWANDA

MINISTRY OF LANDS AND FORESTRY

FOREST INVESTMENT PROGRAM FOR RWANDA

Prepared by:	Lead MDB:	Supporting MDB:
Rwanda Water and Forestry Authority	AFRICAN DEVELOPMENT BANK GROUP	THE WORLD BANK

10 November 2017

REPUBLIC OF RWANDA **Kigali, 10th November 2017**

MINISTRY OF LANDS AND FORESTRY

Madam Mafalda DUARTE
Program Manager CIF
Administrative Unit
World Bank

WASHINGTON DC, USA

RE: Submission of the Forest Investment Plan for Rwanda

Dear Madam,

Reference is made to the expression of interest submitted by the government of Rwanda to Climate Investment Fund (CIF) with which we accessed funds for the preparation of the Forest Investment Plan (FIP).

Reference is also made to the joint mission of the Government of Rwanda and the Multilateral Development Banks (AfDB & WB) held from 2nd to 7th October 2017 in Rwanda in the framework of following up the elaboration of the Forest Investment Plan (FIP) and setting the new calendar for FIP elaboration and submission.

In this regard, I am honored to submit here attached, in accordance to the revised calendar, the Forest Investment Plan, which will be assessed by the FIP sub-committee on 13th December 2017 in Washington DC.

Thank you Dear Madam, for your distinguished consideration.

Yours Sincerely

MUSABYIMANA Jean Claude
The Permanent Secretary
Ministry of Lands and Forestry

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Abbreviations and acronyms

AfDB	**African Development Bank**
AU	African Union
BAU	Business as usual
BEST	Biomass energy strategy
BTC	Belgian Technical Cooperation
CBD	UN Convention on Biological Diversity
CIF	Climate Investment Fund(s)
CITES	Convention on International Trade in Endangered Species
CO_2e	Carbon dioxide equivalent
COMESA	Common Market for Eastern and Southern Africa
COMIFAC	Commission des Forêts d'Afrique Centrale
CSO	Civil society organisation
dbh	Diameter at breast height (1m30)
DFMP	District Forest Management Plan
EAC	East African Community
EDPRS	Economic Development and Poverty Reduction strategy
ENR	Environment and natural resources
FAO	Food and Agriculture Organisation of the UN
FIP	Forest Investment Program
FLRP	Forest Landscape Restoration Programme
FFS	Farmer Filed Schools
FONERWA	Rwanda's Green Fund
FSSP	Forestry Sector Strategic Plan
GCF	Green Climate Fund
GDP	Gross domestic product
GGCRS	Green Growth and Climate Resilience Strategy
GHG	Greenhouse gas
GDI	Gender Development Index
GEF	Global Environment Facility
GII	Gender Inequality Index
GNI	Gross National Income
HDI	Human Development Index
ICRAF	International Centre for Research in Agroforestry
ICT	Information and communication technology
IDP	Integrated Development Programme
INDC	Intended Nationally Determined Contribution
IPCC	Inter-governmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature

LAFREC	Landscape Approach to Forest Restoration and Conservation
LUP	Land use plan
m^3	Cubic metres
MAI	Mean annual increment
MDB	Multilateral Development Bank(s)
MDF	Medium density fibreboard
MgC	Megagrams of carbon, 1 Mg = 1 tonne
MIGEPROF	Ministry of Gender and family Promotion
MINAGRI	Ministry of Agriculture and Animal Resources
MINALOC	Ministry of Local Government
MINECONFIN	Ministry of Finance and Economic Planning
MINICOM	Ministry of Trade and Industries
MINILAF	Ministry of Lands and Forestry
MININFRA	Ministry of Infrastructure
MINIRENA	Ministry of Natural Resources
MoE	Ministry of Environment
NAPA	National Adaptation Programme of Action to Climate Change
NBI	Nile Basin Initiative
NEPAD	New Partnership for Africa's Development
NFC	New Forests Company
NFI	National Forest Inventory
NFP	National Forestry Policy
NFMP	National forest management plan
NFMS	National Forest Monitoring System
NGO	Non-governmental organisation
NISR	National Institute of Statistics of Rwanda
NSTP	National Strategy for Transformation and Prosperity
NTFP	Non-timber forest product
NTSC	National tree seed centre
odt	Oven dry tonnes
PES	Payment for Ecosystem Services
PPCR	Pilot Programme for Climate Resilience
PPP	Public Private Partnership
RAB	Rwanda Agricultural Board
RDB	Rwanda Development Board
REDD+	Reducing Emissions from Deforestation, Forest Degradation, and recognising the importance of Conservation, sustainable management, and enhancement of forest carbon stocks
REL	Reference Emissions Level
REMA	Rwanda Environment Management Authority

RLMUA	Rwanda Land Management and Use Authority
R-PP	Readiness preparation proposal
RWF	Rwanda Franc
RWFA	Rwanda Water and Forestry Authority
SIS	Safeguards information system
SPAT	Strategic Plan for Agricultural Transformation
SPCR	Strategic Program for Climate Resilience
SPGS	Sawlog Promotion Grant Scheme
UNCCD	UN Convention to Combat Desertification
UNFCCC	UN Framework Convention on Climate Change
WB	World Bank

Foreword

Faced with a dense and rapidly increasing population on a fragile land resource, Rwanda has taken steps towards transforming the economy and eliminating poverty through a Green Growth programme. The country has identified the crucial role forests have to play in its development agenda. Forests provide 98.5%[1] of the primary energy source, mainly as domestic cooking energy and provide the base for the country's tourism opportunities, which are targeted to generate over US$ 600 million by 2020. Rwanda's forests also protect watersheds and downstream wetlands, supporting agriculture which accounts for 33% of GDP. They are also conservation areas for rare and endangered fauna, including the Mountain Gorillas, the flagship species for Rwanda's ecotourism.

Since the 1994 genocide against Tutsi, Rwanda has achieved impressive development gains due its economic and structural reforms. Though ranked as one of the least developed countries, Rwanda has transformed itself into one of the fastest growing economies in Africa, with a GDP growth rate of 7-8% since the year 2003. The country's economic planning seeks to convert the 90% of rural livelihoods that are dependent on extractive industrial sources of income (agriculture, mining and forestry) into manufacturing and service sectors.

To balance economic growth and sustainability of the land resource against increasing developmental needs, Rwanda laid out a clear blueprint in its Vision 2020 together with Economic Development and Poverty Reduction strategies which currently being revised into the Vision 2050 and National Strategy for Transformation (NST). All these policy relevant strategies are underpinned by the Green Growth and Climate Resilience Strategy (GGCRS). Noting the vital role of the forestry sector in the national development programme, the government has regularly revised forest laws, policies and strategies to align the forestry sector with national and international developmental and conservation programmes. Recently realigned documents include the National Forest Strategy, the Agroforestry Strategy and the updated Forest Policy which are in the process of being approved by the cabinet. In addition, there are concerted efforts to develop and implement forest management plans in all districts of Rwanda to enhance the productivity, health and resilience of these forests.

Rwanda developed a REDD+ Readiness Proposal (RPP) in 2014 with the objective of participating in REDD+ activities. However the document which was to culminate in the development of a REDD+ strategy is not yet submitted to the UNFCCC. In developing the GGCRS, the specific role of the forestry sector in the country's Green Growth programme was noted. These are the activities that the Forest Investment Program (FIP) has identified and developed into an action plan which in effect will implement the forthcoming REDD+ strategy that is expected to accrue national and international REDD+ related benefits.

Rwanda's FIP Investment Plan has three target areas: (1) Support for Sustainable Agriculture through Agroforestry; (2) Support for Sustainable Forest and Landscape Management; and (3) Wood Supply Chain, Improved Efficiency and Added Value. This Investment Plans includes a clear country context, justification for implementing the proposed projects, analysis of existing legal, policy and institutional frameworks for implementation and summarises the wide range of expected benefits to rural livelihoods, national development programmes and the contribution to GHG emission reductions. It also itemises the specific

[1] Integrated Household Living Condition Survey (EICV 4): 2013-2014

components for each target area, proposes geographical intervention areas and quantifies the resources that will be required.

Throughout the development of the FIP, there has been regular and intensive stakeholder participation to ensure the full range of views was captured and considered. The FIP Investment Plan is therefore fully aligned to National Development Programmes and will enhance Rwanda's green growth while ensuring that the interests of forest adjacent communities and the country as a whole are protected through full compliance with social and environmental safeguards.

TUMUSHIME Francine
Hon. Minister of Lands and Forestry

Acknowledgements

Rwanda's Forest Investment Program (FIP) has been developed in a consultative manner bringing together relevant people and institutions to support this great initiative for the country's Green Growth and Climate Resilience Programmes. We wish to express our gratitude to the various actors who sacrificed time and resources to develop the Investment Plan.

Rwanda gratefully acknowledges the assistance from the Climate Investment Fund (CIF) which provided the grant for the development of the FIP Investment Plan. We also wish to acknowledge the technical guidance provided by the African Development Bank/World Bank throughout the preparation of the plan.

The nationwide stakeholder involvement and consultation process, which included relevant government and sector ministries, local and international NGOs, community organisations, private sector, local government representatives, research institutions, universities and other development partners makes the document fully relevant to the needs and conditions of Rwanda and aligns it to national priorities including the National Strategy for Transformation by 2050.

We appreciate the quality work provided by the lead consultant AESA East Africa who was responsible finalising the FIP Investment Plan in parallel with the Strategic Plan for Climate Resilience which was being developed concurrently. The combination of local and international experts brought together wide international experience and comprehensive local knowledge.

The government of Rwanda has clearly assigned responsibilities for the various actors in the development of the forestry sector and looks forward to their active involvement during the implementation of the FIP Investment Plan.

MUSABYIMANA Jean Claude
Permanent Secretary
Ministry of Lands and Forestry

Rwanda Forest Investment Program Summary

1. Funding request	FIP: US$ 30 million + US$ 0.7 million preparation grant	
2. Other funding sources	US$ 65 million TBD AfDB WB GCF GEF Others	
3. National Focal Point	RURANGWA Felix Director of Forest Research and Extension Unit RWANDA WATER AND FOREST AUTHORITY rurangwafelix@gmail.com	
4. National Implementing Agency	Ministry of Lands and Forestry	
5. Involved MDBs	African Development Bank World Bank	
6. MDB Focal Points	**World Bank** FIP Focal Point Garo J. Batmanian Lead Environment Specialist Email: gbatmanian@worldbank.org Task Team Leader Pablo Benitez, Senior Environmental Specialist Email: pbenitez@worldbank.org	**African Development Bank** Focal Point Gareth Philips, Chief Climate and Green Growth Officer Email: g.phillips@afdb.org Task Team Leader Dr Laouali GARBA, Chief Climate Change Officer; Coordinator, Climate Smart Agriculture (CSA) Email: L.GARBA@afdb.org

7. Description of the Investment Proposal

National context

Rwanda is characterised by steep topography. Despite having almost 30% forest cover, the high population density of 490 people/Km² means land is very intensively used. Around 50%[2] of the population is under 20 which is growing at 2.6% annually. The Agriculture sector provides 68%[3] of the employment with small-scale farming predominating. The country has undergone major land tenure reform and most land is now allocated with title. Apart from the east, which is drier with an annual precipitation of 700 to 800mm, the bulk of the country receives 900 to 1400mm with higher rainfall and mist in the upland plateaux and mountains. Acidic soils predominate over a varied geology. Floods and landslides have become increasingly common.

Pressures from the rising population have extended farming onto unsuitable land, and have also driven deforestation. Although tree planting on and within farming landscapes is widespread, the degraded genetic quality of the planting material, narrow range of species available and lack of good silviculture mean productivity is low, especially in private planting but also on public land.

2

3 Integrated Household Living Condition Survey (EICV 4): 2013-2014

More than 95% of the rural population rely on wood for fuel, and the national dependency level is over 85% despite strong efforts to reduce this. There is a severe and increasing gap between wood supply and demand, which is more than twice the sustainable supply. Shortage of fuelwood drives forest degradation in public forests while private forests are often seriously overcut; both these factors prejudice future productivity. Given the lack of active, high quality management and damage from fire, pests and illegal activities, forest service values are severely below what they could be.

Trees and forests are not delivering their potential values for soil and water conservation, a situation exacerbated by unsustainable agriculture on steep land without adequate soil conservation measures. Biodiversity is threatened, especially outside national parks, which are generally well protected, and natural forest is disappearing rapidly. Loss of trees along watercourses and other features also reduces connectivity and restricts gene flow.

Vulnerability to climate change

Rwanda has already experienced a temperature rise of 1.4°C since 1970 and this could reach 2.5°C by mid-century. Future projections are for more erratic rainfall patterns, including more frequent heavy storms. These changes pose severe threats to the whole country and particularly to the agriculture and forestry sectors. Against this, Rwanda has one of the lowest per capita emissions levels at 0.65T CO_2 e/an. The need is therefore for urgent action on adaptation and building resilience, which can concurrently tackle emissions from land use changes and increase carbon storage. Rwanda's FIP has been formulated alongside the Strategic Program for Climate Resilience (SPCR) under the Pilot Program for Climate Resilience (PPCR), the objective of which is to mainstream climate change in the most economically important sectors and in those most vulnerable to climate change.

8. Forest Investment Program Support

The key overarching issues to be tackled are the huge imbalance in wood supply and the low productivity of trees and forests. Tackling these will result in improved economic development, better livelihoods, more employment opportunities, stable and sustainable landscapes in addition to reduced GHG emissions, and much increased carbon storage.

The proposed projects are intended to be synergetic by focusing on: (i) Agroforestry to stabilise farm land, increase soil structure and fertility and enhance farm production and income opportunities; (ii) Rehabilitation of public forests and improving private and group tree planting to improve productivity and delivery of service values; and (iii) increasing efficiency along the wood supply chain to provide rapid reduction of the wood supply gap. The first two proposed projects will be based on fine-scale land use planning and will be closely coordinated with the SPCR support for sustainable agriculture.

The three proposed projects that comprise the Investment Proposal all have common approaches and strategies that will be applied differentially to meet the specific needs of each project. Each of these is discussed briefly below:

Government Policies and Strategies – Rwanda has an excellent framework of policies and strategies, but as the FIP is rolled out, there will inevitably be need for fine-tuning to overcome inconsistencies and exploit new opportunities that emerge. The key approach will be for government to provide an enabling and supportive operating environment;

Delivery Mechanisms – The government of Rwanda has capacity at both central and local level to undertake field based activities. However, there is still need to strengthen capacity at all levels to ensure that all field activities are conducted to the highest standards so that the limited national land resource is used optimally. This will require action on the following core topics;

Knowledge and Information – The current range of options for both agroforestry and forestry is very restricted and often unavailable to or unsuitable for the full array of users. A more diversified range

of species and varieties is needed, which require an intensive program of research and testing. The aim will be to identify resilient and productive technical intervention packages that meet the requirements of the full range of ecological sites and the needs and capacity of all users;

Skills Building – In order to derive full benefit from new interventions, actors must have adequate knowledge and skills. Their capacity will be increased through training events and access to demonstrations, including through the existing Farmer Field School approach. This will be complemented by a greatly strengthened field extension service to provide better access to advice. In parallel, public employees will need improved capacity and understanding of the new technical interventions so that they can plan, monitor and manage these effectively;

Fiscal Support – A wide range of fiscal support measures is needed to cover all aspects and opportunities. Rehabilitation of public forests, including restoration of natural forests, will be achieved through leases of degraded areas to the private sector and groups of interested individuals. Grants will be provided to cover perhaps 50% of current direct costs. The key elements are that those engaged receive free skills training but must operate to defined high standards and grants are paid in arrears subject to inspection. A similar approach can be adopted for private tree planting at the full range of scales, perhaps with a lower limit of 0.25ha;

Grants that result in improved productivity and service values deliver substantial economic benefits directly, through increased activity levels, and indirectly through avoided costs of soil erosion and flooding. Grants can also be given for agroforestry, including micro-credit to support value chain development. For the improvement of wood use efficiency, it is envisaged that grants would be mixed with loans to cover the cost of new, more efficient technologies;

Standards and Guidelines – These are required to define the base against which grant payments can be judged. They need to cover all relevant activities, including services such as consultancy. They will need to be complemented by a system of registration, including for seed supplies and nurseries;

Safeguards - All proposed activities would be conducted in a way that ensures full compliance with both FIP and nationally defined environmental and social safeguards including gender and the needs of marginalized groups. In particular, opportunities for employment and support to private initiatives, including leases for contract forest rehabilitation and restoration, must include adequate attention to the needs of women, youth and marginalized people. Provision for doing this effectively will need to be included in the development of renewed technical intervention packages;

Institutional structures - Current institutional structures need to be responsive and dynamic so that the full benefits of improved practices can be secured. Support is earmarked to assist in this process to ensure that collaboration and coordination are always as good as possible; and

Cross-sectoral coordination - As most of the ultimate beneficiaries of the FIP proposals will be involved in agriculture, agroforestry and forestry at various scales, the FIP proposals have been developed to coordinate with activities proposed under PPCR and for the intensification of agriculture more generally. Provision has been made to support fine-scale land use planning in all pilot areas.

9. Institutional Arrangements

Primary responsibility for implementation of the three FIP projects will lie with the Ministry of Lands and Forestry through the Rwanda Water and Forestry Authority. The wide-ranging nature of the projects means that many other ministries and agencies will be involved to varying degrees. It is intended to create a FIP Steering Committee to advise on delivery and the composition of this Steering Committee will vary for each of the three FIP projects and may also evolve over time.

Fiduciary and procurement functions will be implemented by Single Project Implementation Unit within RWFA in accordance with national procedures and guidelines.

The implementation and supervision of activities will be undertaken by different units in the Forestry Department of RWFA at Central level and by the Agricultural and Natural Resource Unit, Forestry and Natural Resources and Forestry Extension Offices at district level. At ground level, activities will be carried out by individuals, groups, communities, NGOs, cooperatives and private sector operators, with much increased support from an expanded cadre of trained forestry extension personnel.

10.Expected Results, Outcomes and Impact

Expected results

- Enabling institutional environment;
- Standards and guidelines available for land use planning and full range of forestry and agroforestry interventions;
- Equitable and inclusive participatory management increases in wide range of models;
- Specific opportunities for women and other vulnerable groups built and delivering improved engagement and benefits;
- Lease system in place for public forest rehabilitation and management; and
- Grant system covers needs of full range of actors and groups, including marginalized groups.

Expected Outcomes

- Improved sustainable management of climate resilient forest landscapes;
- Forest productivity increased and risks from climate change, pests and diseases reduced;
- Greater returns to owners from planted trees and forests;
- Increased service values and revenue from non-forest products delivered;
- Rehabilitation, restoration, agroforestry, plantations at all scales and patterns conducted to high standards;
- Natural forests and woodlands increase in quality and extent due to reduced pressures and active management and protection;
- Increased engagement and participation of groups, communities and private investor in tree planting and forestry sector activities generally;
- Actors and stakeholders more empowered by fully inclusive consultation and access to resources and advice; and
- Women and other vulnerable groups fully engaged in decision making and with improved benefits accruing to them

Expected Impact

- GHG emissions from land uses reduced;
- Carbon storage increased in trees and forests;
- Poverty reduction through increased returns, improved value chains and employment;
- High quality forest cover and biodiversity increased;
- Trees and forests more resilient to climate change;
- Forests and forest landscapes managed sustainably, drivers of deforestation and forest degradation controlled;
- Institutional and operating framework supportive and enabling;
- Improved contribution to GDP from forests and trees; and
- Soil and water conservation values increased, fewer land slide and flooding events.

These results are fully coherent with the FIP results framework:

Global FIP Final Outcome - Improved low carbon, climate resilient development;

Country transformative impacts (10 to 15 years), Core Objective - Reduced/avoided GHG emissions from deforestation and forest degradation, and enhanced forest carbon stocks; and

Country-FIP Program Outcomes (5 to 10 years) - Sustainable management of forests and forest landscapes to address drivers of deforestation and forest degradation.

11. Consultations

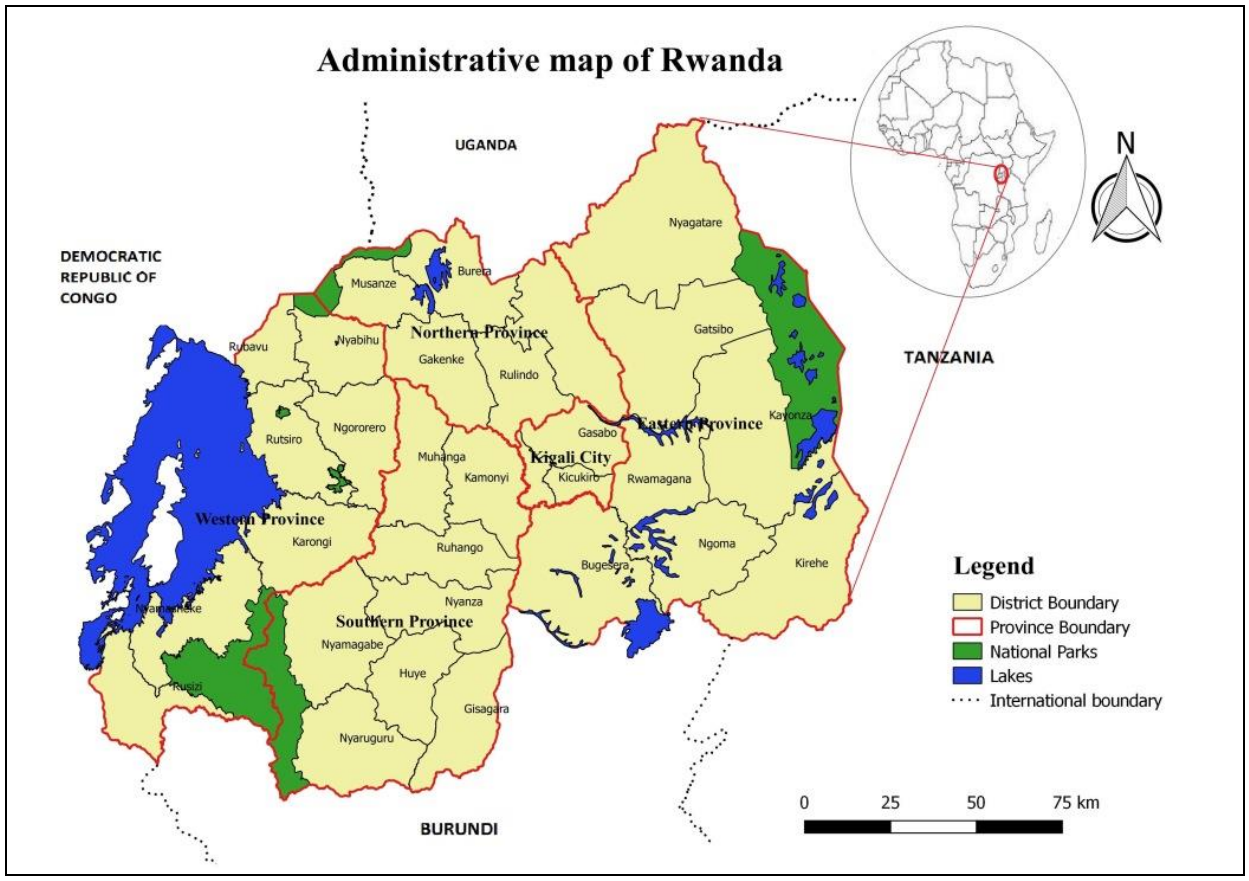
There have been four events providing opportunities for consultations with stakeholders from relevant agencies, private sector, civil society and donors following submission of the Inception, Interim, First and Second draft reports. Extensive consultation at district level was conducted in all four provinces and the City of Kigali.

Forest Investment Program – Budget (US$ millions)

Concept Note and Components	AfDB/CIF/GCF/GEF*	WB/CIF/GCF	CIF/GCF/Private Sector	GoR
CN1 – Development of Agroforestry and Sustainable Agriculture Total funding – US$ 61 million; preparation grant US$ 300,000				
Component 1: Agroforestry for landscape stabilization	32.9			3.3
Component 2: Value chain development for Agroforestry products	11.0			1.4
Component 3: Capacity building	11.0			1.4
Total Concept Note 1	54.9			6.1
CN2 – Sustainable Forest and Landscape Management Total funding – US$ 21.5 million, preparation grant, US$ 200,000				
Component 1: Support land use planning		3.9		0.4
Component 2: Improve tree planting material		5.8		0.6
Component 3: Support implementation of DFMPs		4.0		0.4
Component 4: Develop and support PES in three pilot forests		5.8		0.6
Total Concept Note 2		19.5		2.0
CN3 – Wood Supply Chain, Improved Efficiency and Added Value Total funding – US$ 12.5 million, preparation grant US$ 200,000				
Component 1: Increase efficiency of wood conversion into timber and charcoal			3.75	0.50
Component 2: Support wood value-chain development and use of new wood products			2.50	0.25
Component 3: Support efficiency in biomass energy use			2.50	0.25
Component 4: Support the use of alternative sources of energy			2.50	0.25
Total Concept Note 3			11.25	1.25
Total Funding	**54.9**	**19.5**	**11.25**	**9.35**
Total external funding sought	**85.65**			
Project preparation grants	**0.70**			

* Additional co-financing and the specific contribution from each donor will be confirmed during project preparation. There is also potential leveraged support for bilateral donors. The contribution of the Government of Rwanda is set at 10% of the external project funding.

1. DESCRIPTION OF THE COUNTRY AND SECTOR CONTEXT



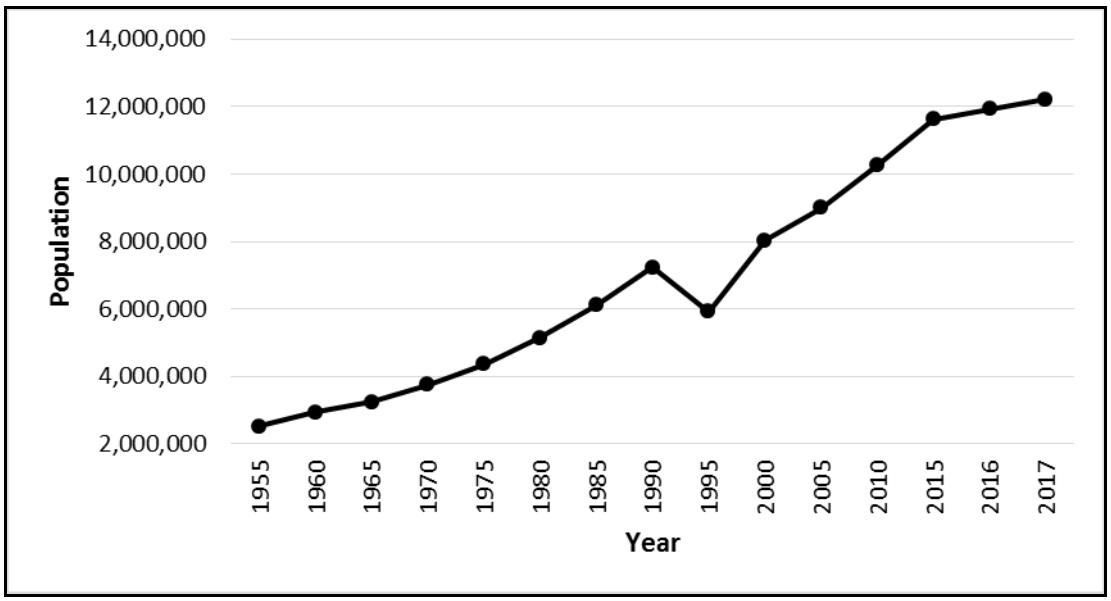
1.1 Country context

1.1.1 Location and geography

1. The Republic of Rwanda is a landlocked country in the East African region, with an area of 26,338 km² and an estimated population of 12 million in 2017. It is situated between Latitude 1°04' and 2°51' South of the equator and between longitude 28°53' and 30°53' east of the Prime meridian. Rwanda has an equatorial climate mainly modified by relief with a constant annual temperatures ranging from 16 to 24°C and an annual rainfall between 700mm and 1,400 mm in the drier areas and reaching 2000 mm in the wetter western provinces.

2. Currently one of the limitations facing Rwanda is its high population density (estimated at 490 persons per km2), which impacts heavily on the fragile limited land resource characterised by the hilly terrain, high rainfall and erodible soils. In addition, the country's population growth rate estimated at 2.27% in 2017 (Figure 1 below) is a threat to the sustainability of the natural resource base. Due to its limited resource base, Rwanda needs to meet a large share of its developmental requirements from the land sector. Therefore efficient planning of land resource management (including forestry) is vital.

Figure 1 Rwanda Population growth trends 1995 to2017[4]



1.1.2 Economic Development and Social Indices for Rwanda

3. Rwanda has achieved impressive development gains since the national tragedy of 1994. The country has been able to make important economic and structural reforms and sustain high and increasing economic growth rates over the last decade. Strong economic growth has been accompanied by substantial improvements in living standards. These achievements are captured in GDP growth rate and gross national income per capita graphs presented in Figure 2 below and also summarized in Table 1 below.

4. Rwanda's Human Development Index (HDI), which is a summary measure for assessing progress in three basic dimensions of human development: a long and healthy life; access to knowledge; and a decent standard of living. The value for 2015 is 0.498. This puts the country in the low human development category positioning it at 159 out of 188 countries. However between 1990 and 2015, Rwanda's HDI value increased from 0.244 to 0.498, which is an increase of 104%.

5. The Gender Inequality Index (GII) reflects gender-based inequalities in three dimensions – reproductive health, empowerment, and economic activity. Rwanda has made much progress to promote gender balance. It has a GII value of 0.383, ranking it 84 out of 159 countries in the 2015 index. The Gender Development Index (GDI), which reflects gender inequalities in achievement in the same three dimensions as the HDI: health, education and command over economic resources. Rwanda has a GDI value of 0.992, which places the country into Group 1.

6. According to the Fourth Population and Housing Census carried out in 2012, 62%[5] of the country's population is under the age of 25 years. The Youth unemployment rate is a percentage of the labor force population aged 15 to 24 that is not in paid employment or self-employed but is available for work and has taken steps to seek paid employment or self-employment. Total unemployment rate is a percentage of the labor force population aged 15 and older that is not in paid employment or self-employed but is available for work and has taken steps to seek paid employment or self-employment.

7. According to EICV4 employment and economic activity rate for young people (14–35) was found lower than the rate of all working age people (16 years+) which was about 87%, especially in

[4] http://worldpopulationreview.com/countries/rwanda-population/

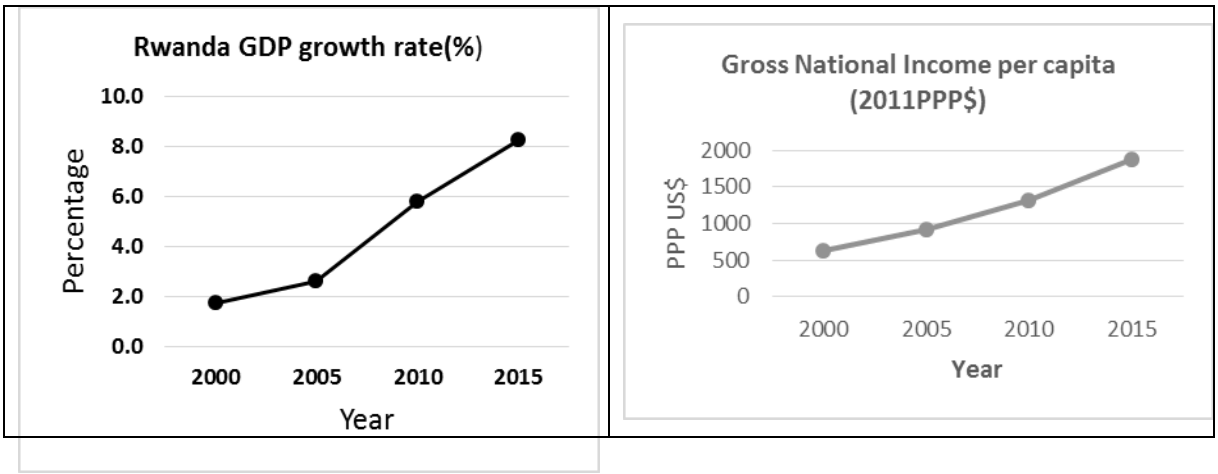
[5] Fourth Population and Housing Census, Rwanda 2012

14–19 age category. The overall proportion of youth who is unemployed was 76%. Most of the people who were not active were students (16%). The employment rate for people in 25–35 years age category were more than 93%

Table 1 Key Development Indices for Rwanda

Development Index	2000	2005	2010	2015
GDP growth rate (%)[6]	1.73	2.58	5.77	8.26
GDP per capita (US$)	225	295	572	720[7]
Gross National Income per capita (2011 US$ PPP)[8]	620	910	1,320	1,870
Human Development Index (HDI)[9]	0.332	0.404	0.464	0.498
GINI coefficient[10]	0.507	0.522	0.490	0.448
Gender Inequality Index[11]	0.544	0.472	0.428	0.383
Gender Development Index (Ratio of female to male HDI values)[9]	0.987	1.006	1.005	0.992
Total unemployment rate (% of labour force)[12]	2.3	2.5	2.2	2.4

Figure 2 Time Series Graphs of Key Development and Social Indicators for Rwanda



[6] https://data.worldbank.org/country/rwanda

[7] Annual economic Report-Fiscal year 2015-2016. MINECOFIN

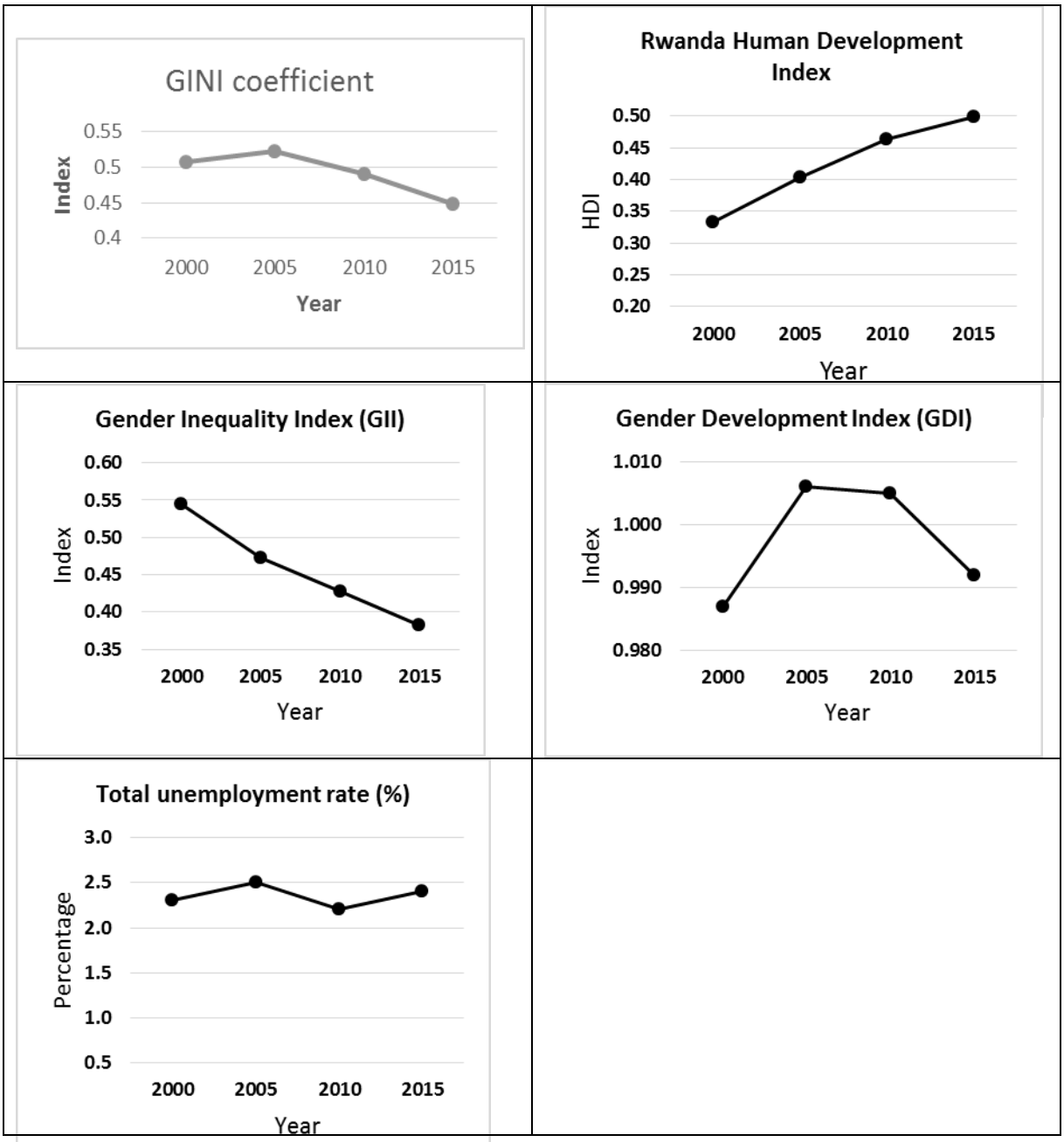
[8] https://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD?locations=RW

[9] Human development report 2016, Briefing note for countries on the 2016 Human development report, Rwanda. UNDP.

[10] National Institute of Statistics of Rwanda (NISR), Rwanda Poverty Profile Report, 2013/14, August 2015 – last year is 2014

[11] http://hdr.undp.org/en/content/gender-inequality-index

[12] http://hdr.undp.org/en/indicators/110906



1.2 Role of forests in national development

8. Forests have a significant role to play in Rwanda's national development. They provide 86% of the primary energy source mainly as domestic cooking energy. They hold the base for the country's tourism opportunities, which in 2013 generated US$ 294 million and are targeted to increase to over US$ 600 million by 2020. Rwanda's forests protect watersheds and downstream wetlands, supporting agriculture which accounts for 36% of GDP, 80% of employment and generates more than 45% of the country's export revenues.

9. Forested catchments supply a high proportion of the water for domestic, agricultural, industrial urban and ecological needs in both upstream and downstream areas. A key challenge faced by land, forest and water managers is to maximize the wide range of multi-sectoral forest benefits with no detriment to water resources and ecosystem function. In this regard, the government has proposed to pilot four projects for conservation of forested water catchments along the river

catchments of Sebeya, Nyabugogo, Muvumba and Upper Nyabarongo through mechanisms of Payment for Ecosystem Services. Box 1 below gives the basic definitions used for forests in Rwanda.

Box 1 Definition of Forest in Rwanda

Forest: The 2012 forest cover mapping of Rwanda from Orthophotos, defined forests based on ability to map them as *A group of trees higher than 7 m and a canopy cover of more than 10 %, or trees able to reach these thresholds in situ on a land area of 0.25 ha or more* (CGIS and RNRA, 2012).

Shrublands: were defined as *A group of perennial trees smaller than 7 m (shrubs) at maturity and a canopy cover of more than 10% on a land area of 0.25 ha or more* (CGIS and RNRA, 2012).

However, the R-PP, referring to the conditions in which forests of Rwanda exist, defined forests as *A group of trees and bamboo plantations, higher than 2m and a canopy cover of more than 10 %, or trees and bamboos plantations able to reach these thresholds in situ on a land of at least 0.05 ha* (MINIRENA/RNRA, 2014).

State forest: A forest found on state land planted by the State, Government Project, planted through community work or any other organ, a natural forest, forest planted along State roadsides, along the shores of rivers and lakes, a forest transferred to the State and any other unowned forest (Forest Law 2013).

District forest: A forest located on a District land and that was planted by the District, a District project, planted through community work or planted by any other organ partnering with the District, a forest along the District roads or forest that has been transferred to the District (forest Law 2013).

Public forests: Refers to all State forests and District forests (Forest Law 2013)

Private forests: Are forests planted by an individual, planted through community work or by any other person on private land. Private forest could be small scattered forests that include agroforestry systems or large contiguous blocks of trees.

Trees inside forests (TIF): Are specifically trees in forest plantations on public lands.

Trees on other lands (ToFo): Are classified as trees either in agroforestry systems or on shrub lands.

1.3 Past tree planting initiatives

10. The people of Rwanda have long had a tradition of planting indigenous tree and shrub species, *e.g*. *Ficus thoningii*, *Euphorbia tirucalli*, *Erythrina abyssinica*, *Vernonia amygdalena*, *Dracaena afromontana*, *etc*., around household compounds (urugo). However, major reforestation efforts with woody perennials for timber, energy generation or other services, date from 1920 to 1948. During this colonial period, the target was to afforest one ha of woodland for every 100 persons. By independence in 1962, about 20,000 ha of communal land had been afforested, mainly with *Eucalyptus* species.

11. The launching of the Kibuye Pilot Forestry Project (PPF) in 1967, with funding from Switzerland, marked the beginning of true forestry practices in the country. By 1976, PPF had established more than 5,000 ha of forest plantations. Intensive reforestation efforts were carried out between 1975 and 1990, with 1975 marked a turning point in the practice of forestry in Rwanda, with major reforestation campaign and launching of large scale development projects, each with a major forestry and agroforestry component. The compulsory community works ("*Umuganda"*) launched in 1975, and the annual National Tree Planting Day institutionalized in 1976 helped to mobilize the population for tree planting activities. As a result, the forest plantation area rose from 25 500 ha in 1975 to 247 500 ha in 1989.

12. Forestry activities were interrupted by the war that broke out in 1990 and culminated in the genocide of the Tutsi in 1994. A number of forests (both natural and plantations) were completely destroyed by displaced people fleeing the war and later on for new settlements for the returning

refugees. From 1999 onwards, during the annual tree plantation week, the government with the help of several development and forest projects distributed free seedlings to farmers, which helped to increase the area under private forest plantations as well as number of trees in agroforestry systems.

13. Nevertheless, weak extension services did not allow for effective follow up of planted seedlings and extremely poor survival rates as well as very low intensity management of forest plantations (both public and private) have led to extremely low forest productivity. The forestry strategic plan 2017 to 2021 was developed to address these issues in order to boost forest productivity and ensure sustainable forestry management. Fuller details of the background to tree planting in Rwanda are given in Annex 6.

Box 2 Technical Knowledge and Information

Planting of indigenous trees and shrubs around homesteads has long been practiced in Rwanda. Concerns raised by over-exploitation of forests started in the 1920s since when Rwanda has had an active forestry research programme which included indigenous species as well as a wide range of introduced species for trial: the latter drawing on information and resources from East Africa. In more recent years, there has also been substantial effort to categorise site-species matching and extensive site analysis based on climate and soils to guide species selection. This work, together with extensive reforestation efforts continued through until the early 1990s but was seriously stalled by the events culminating in the 1994 genocide.

As would be expected, this has led to a severe loss of institutional memory and information. Nevertheless, historical records can provide a useful starting point for formulating a reactivated programme of forestry research, which can be complemented by establishing links with relevant institutions across the region to benefit from their more recent experience and facilitate exchange of genetic material.

At the same time, past information and results will need to be re-interpreted to take account of predicted climate change. There would be value in running water-balance models to provide a basis for fine-tuning of climatic zones together with the soil profiles within them and guide selection of an initial range of species that would be worthy of trial and wider use on specific sites within each zone to meet the requirements of the full range of users.

1.4 Current status of forest and shrubland resources

1.4.1 Forest cover

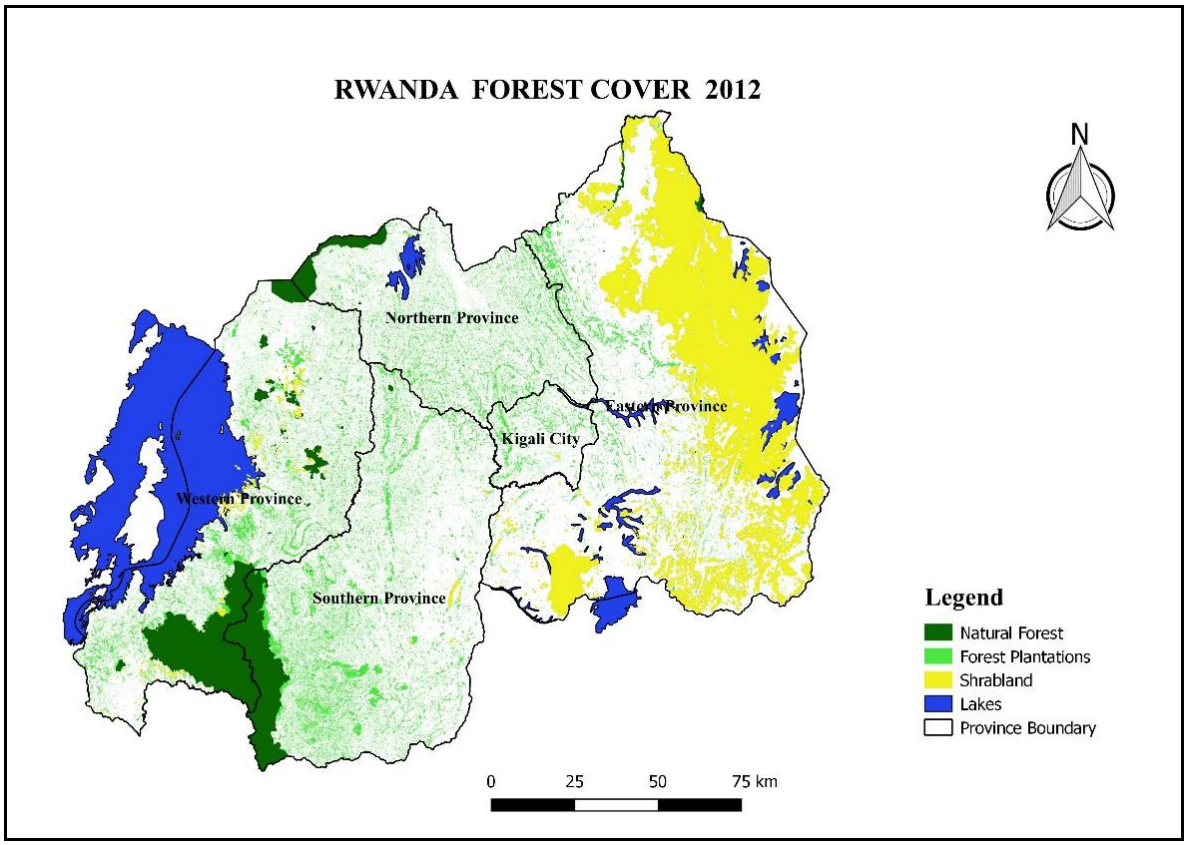
14. A forest cover mapping exercise done in 2012 illustrates the spatial distribution of forests in the country (Figure 3 below), their distribution among provinces (Table 2 below) and their categorisation by forest types (Table 3 below). Forests covered an area of 673,516.80 ha equivalent to 28.28%[13] of the total land area. The Western provinces comprises the biggest share of natural forests (69,733 ha), the Southern province has the biggest share of plantation forests (109,765 ha) while the Eastern province has the largest share of Shrubland (258,403 ha).

[13] CGIS-NUR/PAREF/RNRA (2012) Rwanda forest cover mapping using high resolution aerial photographs. Final Report. Huye, Rwanda

Table 2 Forest cover per province[14]

Province	Natural forest (ha)	Forest plantation (ha)	Shrubland (ha)	Total (ha)
Northern	11,716	54,813	-	66,529
Southern	42,850	109,765	582	153,197
Eastern	1,843	35,986	258,403	296,232
Western	69,733	74,905	1,519	146,157
Kigali City	59	11,340	-	11,399
Total	**126,201**	**286,809**	**260,504**	**673,516**

Figure 3 Rwanda Forest cover from high resolution aerial photographs



15. Differentiation of forests into categories shows that the total forest area comprised 18% natural forests (123,538 ha), 39% shrub-lands (260,569 ha) and 43% (286,811 ha) forest plantations. Of this total plantation forests, the majority (256,065 ha) is *Eucalyptus* forests while a variety of other species exists either in monocultures or in mixed forests.

[14] Taken from Rwanda National Forest Inventory - 2015

Table 3 Forest cover of Rwanda per type of natural forest and tree species in forest plantations[15]

Forest category	Forest species	Forest canopy density			Total cover (ha)	% Cover
		Low (ha)	Medium(ha)	High (ha)		
Natural forest	Closed Natural Forest	(>=50%) 112,077			112,077	16.6
	Degraded Natural Forest	(<50%) 11,461			11,461	1.7
	Wooded Savanna	1	3	940	943	0.1
	Bamboo stand	<1	45	1609	1654	0.3
	Shrubland	200,770	31,478	28,321	260,569	38.7
Forest plantation	*Eucalyptus*	29,664	130,147	96,254	256,065	38.0
	Pinus	435	2,742.65	14,613	17,790	2.6
	Callitris	48	353	556	958	0.1
	Cypress	5	48	160	213	<0.1
	Grevillea	116	183	112	411	0.1
	Jacaranda	20	53	32	105	<0.1
	Alnus	15	39	234	78	<0.1
	Black wattle	4	1	3	7	0.0
	Ac. melanoxylon	1	353	625	979	0.2
	Maesopsis			4	4	0.0
	Arboretum			264	264	<0.1
	Mixed	851	4,498	3,113	8,462	1.3
	Others	330	789	357	1,475	0.2
Total					**673,517**	**100.0**

1.4.2 Forest stocking

16. The most recent National Forest Inventory[16] indicates very low stocking among plantations with only 50 m³/ha for public plantations and 17 m³/ha for private plantations. The low stock is mainly due to poor management which involves lack of adherence to silvicultural guidelines, early harvesting, poor selection of species and planting material and poor site matching. A district by district inventory done on public forests in 2017 for developing District forest management plans[17] gives the maximum stocking in the forests of the districts as illustrated in Table 4 below. Nyabihu district in western province, an example of a district with well protected *Eucalyptus* plantations shows that the public forests can carry up to 285 m^3/ha, indicating that good management of the public forests on better sites has potential to increase stocking more than 5 times from the 50 m^3/ha shown in the forest inventory.

[15] CGIS-NUR/PAREF/RNRA (2012) Rwanda forest cover mapping using high resolution aerial photographs. Final Report. Huye, Rwanda.

[16] National Forest Inventory. PAREF be2. RWFA 2016

[17] District Forest Management Plans for public forests funded by PAREF NL and IUCN. RWFA. 2017

Table 4 Forest stocking statistics from 2017 District forest management plans[18]

Province	District	Max Basal area/ha (m^2)	Max timber volume /ha (m^3)	Max service wood volume /ha (m^3)	Max energy wood volume /ha (m^3)	Max above ground volume /ha (m^3)
Northern	Burera	8.7	70.8	1.5	0.9	73.2
Northern	Musanze	6.8	50.3	1.0	3.3	52.2
Western	Nyabihu	15.2	36.7	90.3	158.5	285.5
Eastern	Gatsibo	8.6	9.0	18.9	35.5	64.7

17. Data collected from Nyungwe forest,[19] a natural Afromontane forests shows a great variation in stocking, but generally a higher than the average for public plantations with above ground carbon values of 185 tonnes ha-1 and 76 tonnes ha-1 in relatively undisturbed, late succession and early succession forests.

1.5 Wood Supply and Demand

18. Despite a laudable forest-cover figure (29%), Rwanda currently suffers from a severe imbalance between wood supply and demand, with low productivity exacerbating this problem. Privately planted trees, though comprising a greater proportion of the forests in the country (Table 5 below) seldom deliver their full potential due to poor species-user-site matching, limited management and premature cutting. Public plantations have a very narrow range of species, low stocking and stagnated growth due to damage from fire and illegal cutting with limited active management and protection.

Table 5 Source of current wood supply 2015 – WISDOM Report

Source	Percentage
Private forests	43%
Public forests	27%
Agroforestry	26%
Shrublands	4%

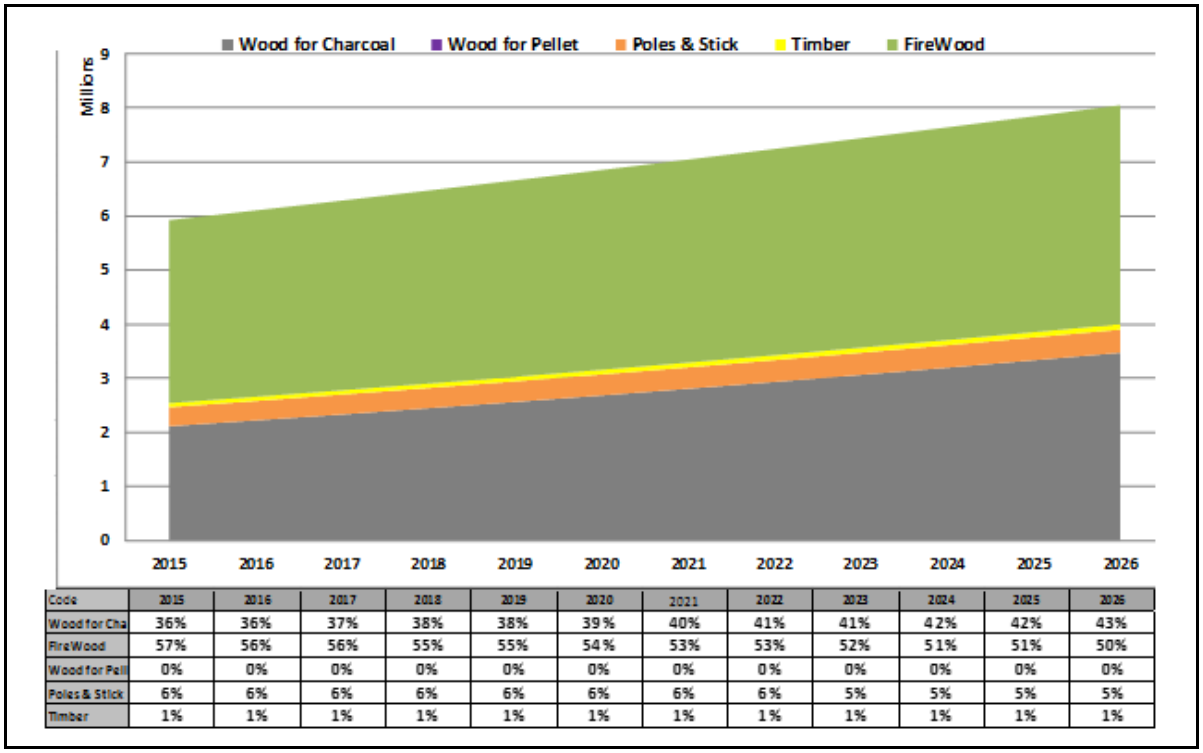
19. An analysis of the wood demand and supply[20] shows that the demand to supply ratio is 2:1 and the shortage is projected to increase until in future (Figure 4 below) unless alternative sources of wood energy are sought. The consumption of fuelwood for Rwandan households is estimated at 2.7 million tonnes per year and charcoal making accounts for about 50% of total fuelwood used. The Business as Usual scenario on wood supply/demand, estimates the deficit between wood supply and demand to be 4.3 million tonnes (oven dry weight) in 2017, which is projected to increase to 7.5million tonnes by 2026. This is due to a high increase demand for fire wood and wood for charcoal. This must imply over-exploitation of already low stocked forests.

[18] District Forest Management Plans for public forests funded by PAREF NL and IUCN. RWFA. 2017

[19] Carbon stocks and dynamics at different successional stages in an Afromontane tropical forest by Brigitte Nyirambangutse, Etienne Zibera, Félicien K. Uwizeye, Donat Nsabimana, Elias Bizuru, Håkan Pleijel, Johan Uddling, and GöranWallin. Biogeosciences, 14, 1285–1303, 2017

[20] WISDOM Rwanda and Woodfuels value chain analysis. Rwanda Supply Master Plan for fuelwood and charcoal RWFA.

Figure 4 Total demand projection per type of wood product for a business as usual scenario (oven dry tons/year)[21]



Code	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Wood for Cha	36%	36%	37%	38%	38%	39%	40%	41%	41%	42%	42%	43%
FireWood	57%	56%	56%	55%	55%	54%	53%	53%	52%	51%	51%	50%
Wood for Pell	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poles & Stick	6%	6%	6%	6%	6%	6%	6%	6%	5%	5%	5%	5%
Timber	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%

1.6 Impacts of climate change on Rwanda

20. Rwanda has one of the lowest per capita emissions in the world, estimated at 0.65 metric tonnes CO_2e/person (including land use change), compared to the global average of 4.63 tonnes CO_2e/person.[22] Based on Rwanda's developmental targets, it is likely that emissions from the energy sector and the industrial sector will increase up to 50% by 2020.

21. Currently emissions from deforestation, agriculture, and land use comprise the significant sources of emissions, mainly due to deforestation, forest degradation and inefficient wood conversion methods[23]. Recent global climate vulnerability and risk indexes show that Rwanda as very vulnerable to climate change ranked at position 132 globally[24] (based on the relative severity and magnitude of climate change impacts) and position 7 globally[25] (based on the country's lack of adaptive capacity and marginal level of preparedness). The country is also a high-risk nation in terms

21 Projection scenario of sypply/demand of wood biomass in Rwanda from 2015 to 2026. RNRA-DFNC summary report.

22 Climate Analysis Indicators Tool (CAIT) Version 2.0. (Washington, DC: World Resources Institute, 2014)". World Resources Institute. Retrieved 2017-06-12.

23 Gaps and Needs Analysis. Strategic Programme for Climate Resilience (SPCR) for Rwanda. FONERWA July 2017

24 Snke Kreft *et al*., Germanwatch, Briefing Paper – Global Climate Risk Index 2016, (2015). https://germanwatch.org/fr/download/13503.pdf

25 Verisk Maplecroft, Risk Calculators and Dashboards (2010). https://maplecroft.com/about/news/climate_change_risk_list_highlights_vulnerable_nations_and_safe_havens_05.html

of climate risk exposure[26] with such effects estimated to cost at least 1% of the country's annual GDP.

22. Rwanda has already observed a 1.4°C (Celsius) rise in average temperature since 1970 and future projections portend a rise of up to 2.5°C by mid-century.[27] Future rainfall projections indicate more erratic rainfall distribution, and higher variations in rainfall volumes. For a country that is heavily dependent on agriculture and generates a large share of its electricity from hydropower, such changes in precipitation patterns pose a real threat to economic development and especially to rural livelihoods.

1.7 Drivers of deforestation and forest degradation

23. Between 1960 and 2007, natural forests declined considerably by about 64% due to different anthropogenic activities and resettlement of refugees[28]. However, between 1990 and 2000, Rwanda gained an average of 2,600 hectares of forest per year, equivalent to an annual reforestation rate of 0.82% (Table 6 below). The rate of habitat conversion (defined as change in forest area plus change in woodland area minus net plantation expansion) was 50% in the period 1990 – 2005.

24. The main drivers of deforestation and forest degradation in Rwanda[29] are: (i) Agriculture, with 95% of households practicing traditional subsistence agriculture on small plots that have degraded soil structure and fertility due to continuous cultivation,[30] (ii) Infrastructure development, (iii) Urbanisation including the growing of built-up area, which increased by over 300% in the period from 1990 to 2016,[31] (iv) artisanal mining practices, with a high increase in issued mining permits (in 2014 a total of 548 mining permits were issued to 213 registered mining entities[32]) but no restoration of abandoned mining sites, (v) Forest product extraction, mostly firewood, charcoal and timber and (vi) Limited forestry extension services.

25. These drivers derive from different socio-economic factors including: (i) high population growth, with 83.5% living in rural areas and 16.5% in cities, the increasing pressure on forests from agriculture, urbanisation and exploitation of forest resources are linked to the high population with limited land to sustain their livelihoods; (ii) Lack of awareness and alternatives, which has led to the failure of different projects aiming to promote sustainable forest management and full engagement of local communities. A brief summary of the impact of the agricultural, livestock, fisheries, oil and mining sectors and their impact on the forestry sector and forest management is presented in Table 7 below. Brief comment on the latest BEST revision is given in Box 3 below.

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26 Rwanda Environment Management Authority, Baseline Climate Change Vulnerability Index for Rwanda (2015). http://www.climdev-africa.org/sites/default/files/DocumentAttachments/ Baseline%20climate%20change %20vulnerability%20index%20for%20Rwanda.pdf

27 Gaps and Needs Analysis. Strategic Programme for Climate Resilience (SPCR) for Rwanda. FONERWA July 2017

28 Study to establish a national list of threatened terrestrial ecosystems and species in need of protection in Rwanda.

29 REDD Readiness Preparation Proposal For Rwanda. RNRA 2014

30 REMA (2015) Rwanda: State of Environment and Outlook Report 2015. Rwanda Environment Management Authority. Kigali, Rwanda.

31 Karamage F, Zhang C, Fang X, Liu T, Ndayisaba F, Nahayo L, Kayiranga A, Nsengiyumva JB (2017) Modelling Rainfall-Runoff Response to Land Use and Land Cover Change in Rwanda (1990–2016). Water 9: 147.

32 REMA (2015) Rwanda: State of Environment and Outlook Report 2015. Rwanda Environment Management Authority. Kigali, Rwanda.

Box 3 BEST Draft final report – 2017

This report is still in process of discussion and the current draft is still subject to numerous queries from internal reviewers. While the gist of the argument presented in the draft report is that the wood supply gap cannot be as serious as figures suggest, it is unclear that the authors have accounted fully for people's innovative responses to the current and increasing fuelwood shortage. They may only cook once a day or even once every two days or eventually simply buy cooked food and leave the wood supply problem to others.

Although the precise figures may be arguable, the reality is that there is a huge gap between sustainable supply and demand, its effects are pernicious, it impacts disproportionally on the poorest and most vulnerable and it will continue to increase unless actions are taken urgently to increase supply and reduce demand. The latter is vital since its effects will occur much more rapidly than those from tackling the supply side. The severe wood supply gap continues to be a major driver of deforestation and forest degradation in the country.

Table 6 Change over time (1984 to 2015) of key natural forests in Rwanda

Name of the forest	Area (ha) 1984	Area (ha) 2015	% Loss
Buhanda Natural Forest	1116	18	98.4%
Gishwati Natural Forest	21213	1440	93.2%
Mashyuza Natural Forest	85	6	92.7%
Ibanda-Makera Natural Forest	1425	169	88.1%
Karama Natural Forest	3235	1061	67.2%
Dutake Natural Forest	31	11	65.7%
Karehe-Gatuntu Natural Forest Complex	48	19	60.3%
Nyagasenyi Natural Forest	45	19	58.2%
Akagera National Park	267,741	112,185	58.1%
Mukura Natural Forest	4376	1988	54.6%
Sanza Natural Forest	49	24	51.0%
Mashoza Natural Forest	36	18	51.0%
Muvumba Natural Forest	1286	688	46.5%
Ndoha Natural Forest	39	29	26.0%
Kibirizi-Muyira Natural Forest	454	352	22.4%
Busaga Natural Forest	191	159	16.9%
Nyungwe National Park	112,230	101,005	10.0%
Volcanoes National Park	16,128	16,004	0.8%
Total	**429,728.47**	**235,192.27**	**45.27%**

Table 7 Analysis of livestock, agricultural, fishery, oil and mining sectors and their impact on the forestry sector and forest management

Analysis of sectoral problems related to forestry	Impact on the forestry sector and forest management	FIP project solutions
Agriculture		
• Population pressure coupled with farming land scarcity leading to unsustainable farming practices (no fallowing of land, limited use of fertiliser inputs and in many cases poor or inadequate soil conservation practices; hence over-cultivation, erosion and low yields). • Some farmers are still practicing traditional farming practices	• Deforestation within farming areas • Expansion onto fragile ecosystems, including shrub lands (especially in the Eastern Province); marshlands and lands on steep and very steep slopes	• Development of agroforestry through introduction of proper agroforestry practices and planting of soil-improving trees. • Capacity building through FFS approach
Livestock		
• Despite the zero grazing policy, some livestock keepers are still grazing out in ranches or other pastures	• Overgrazing of available pastures leading to grazing even on forest lands	• Agroforestry planting in banks of fodder trees to supplement animal nutrition on pastures and forages for zero grazing
Fisheries		
• Although artisanal fishing has long been practiced in Rwanda, fishing has never been a major economic activity. • Overfishing has been a concern in recent years due to the increasing value of fish, increased fishing capacity and poor fishing practices.	• Tree cutting for fishing tools, fish drying and smoking	• Support aquaculture with appropriate agroforestry trees
Mining		
• Some mining sites are located in forests (*e.g*. Mukura Forest) • Artisanal mining is most dominant throughout the country and in most cases mined areas are not effectively restored. • Mining causes scarring of the landscape and often leaves behind waste rock and tailings heaps. • There is also pollution of water streams and severe contamination of fields downstream of mines.	• Deforestation and forest degradation due to mining activities in forests • Environmental degradation, pollution of water supplies, negative social impact in communities as mainly practised by young men	• Restore mined areas as well as potentially contaminated fields with appropriate tree species and technologies. • Support improved protection of forest land and control of illegal uses

1.8 REDD+ Readiness Proposal

26. Rwanda's REDD+ Readiness Proposal (R-PP) was finalised in 2014.[33] The consultative document based on national priorities for the forest sector is now in process of submission for approval. The R-PP identified six priority areas that would make Rwanda ready for REDD+ implementation:

1 Organisation and consultation;

2 Preparation of the REDD+ strategy;

3 Development of a National Reference Scenario;

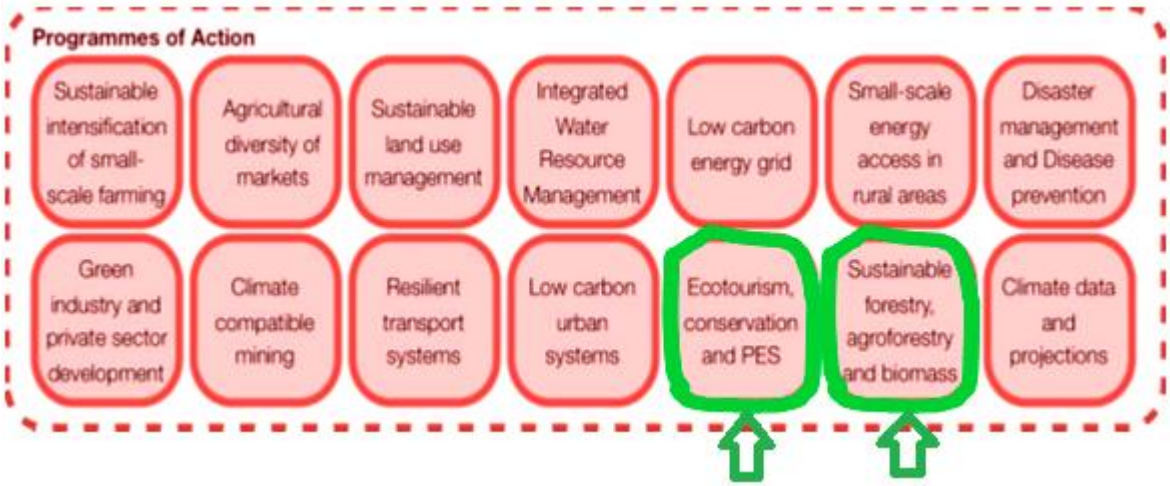
4 Designing a National Forest Monitoring System (NFMS) and a Safeguards Information System (SIS);

5 A schedule and budget; and

6 A monitoring and evaluation system.

27. An opportunity to implement REDD+ is now provided in the Green Growth Climate and Resilience Strategy (GGCRS),[34] which has identified the role of the forestry sector in the country's GGCRS (Figure 5 below) under the thematic area: *Forest Ecotourism, Conservation and promotion of Payment for Ecosystem Services (PES) in Protected Areas* (Programme 11) and *Sustainable Forestry, Agroforestry and Biomass Energy* (Programme 12).

Figure 5 Thematic areas for the participation of the forest sector in the GGCRS



28. The other programmes of action in Figure 5 above are to be covered by the Strategic Plan for Climate Resilience (SPCR) which has been developed in parallel with the FIP. The complementarity and linkages between the FIP and the SPCR will allow Rwanda to achieve the Green Growth and Climate Resilience through identification of priorities and the most readily addressed thematic areas to provide strong and feasible solutions to the drivers of Climate Change and allow holistic national adaptation to climate change effects.

1.9 Forest governance and institutional capacity

29. The Forestry Sector in Rwanda was not prioritised in the development agenda until the launch of Vision 2020 and adoption of the national forestry policy in 2004. Since then a great deal of

[33] REDD Readiness Preparation Proposal For Rwanda. RNRA 2014

[34] Rwanda's Green Growth and Climate Resilience Strategy (2011-2050) (GGCRS)

achievement in restructuring the forest sector has been done. Section 3 below of this report describes the various legislation and strategies that have been developed to make the forest sector significant in the country's development agenda. These laws, policies and measure illustrate among others.

1 Institutions relevant in managing forests;

2 Specific laws and policies to guide forest management;

3 Categorization of forests to ease management;

4 Stakeholder participation in forest management; and

5 Linkages between the forest sector and national development programmes.

30. It is, however, noted that many of the policies and measures are at an early stage of implementation and will require support. Such support includes capacity building in terms human resource numbers and skills and also support for equipment and processes. This FIP IP will seek to bridge this capacity gap and emphasis will be put on: (a) strengthening institutional capacity for policy implementation and coordination; (b) strengthening the capacity of forestry manpower at all levels (with a particular focus on up-skilling technicians to support field activities, wood value chains and value chain addition); and (c) developing and supporting sustainable forest industries that can generate more employment opportunities in the forestry sector overall.

31. A detailed process to provide cadastral data for the whole country has been initiated by the (RLMUA). This aims to account for every parcel of land in the country and provide better land use planning specifically for the development of urban areas and rural areas. This is a safeguard to ensure rural and forest adjacent communities are catered for in the national development agenda.

2. OPPORTUNITIES FOR GREENHOUSE GAS (GHG) ABATEMENT

2.1 Introduction

32. A summary of the drivers of deforestation and forest degradation and their underlying causes is provided in Section 1.7 above. The Forest Investment Program (FIP) provides opportunities to mitigate these drivers based on the existing Policies and Measures, which include laws and policies, proposed and existing institutional arrangements as well as underlying issues such as benefit sharing and land tenure arrangements.

33. It is important to note that the FIP investments target 'big wins' that if implemented, will make a significant impact on adaptation, mitigation and economic development and are likely to produce the greatest return on investment for Rwanda as they impact the whole economy in the long term. Such interventions can also demonstrate emission reductions including REDD+ activities. To ensure

that the proposed investments are informed by existing measures, this FIP proposal has used related and ongoing initiatives in the forest sector and updated this information through an intensive stakeholder consultation. The existing mitigation actions and strategies are described below.

2.2 The REDD+ Readiness Proposal (R-PP)

34. The FIP is a REDD+ implementation phase bridging the gap between REDD+ readiness (R-PP is Phase 1) and results-based payments (Phase 3) activities. The R-PP is therefore the key document to guide the implementation of Rwanda's FIP proposal. It notes that the forest sector is threatened by Deforestation and forest degradation (Section 1.7 above). To reverse these trends, the R-PP identified three interventions by spatial distribution. These interventions are:

- **Modernisation of agriculture and soil protection**. This includes Intensification of agriculture; Development of marshlands, Soil protection and Promotion of beekeeping in all agro-ecological zones of the country.
- **Increase forest cover and adopt sustainable forest management**. This intervention is proposed for three groups of ecological zones as follows:
  - ⇒ Eastern Savanna and Central Plateaux - Intensive afforestation; Development of agroforestry; Conservation and management of existing natural relic forests; Good management of existing manmade forests, Improvement of existing eco-tourism and Development of non-wood products;
  - ⇒ Ndiza and Buberuka highlands plus South-West and Kivu Lake shore - Conservation and management of planted forests; Afforestation in open spaces; Good management of existing manmade forests; Development of wood value- adding industry; Development of non-wood products; Development of agroforestry
  - ⇒ Congo-Nile divide and Volcanic range - Protection and conservation of natural forests; Reforestation of degraded areas; Afforestation in open spaces; Good management of existing manmade forests; Development of wood value-adding industry; Development of agroforestry
- **Development of efficient wood energy use**. This intervention is divided into two groups of intervention as follows:
  - ⇒ Eastern Savanna, South-West, Kivu Lake shore and Volcanic Range - Development of alternative sources of energy; Large utilisation of improved charcoal and wood cook stoves;
  - ⇒ Central Plateaux, Ndiza and Buberuka highlands and Congo-Nile Divide - Development of alternative sources of energy; Large-scale utilisation of improved charcoal and wood cook stoves; Promotion of carbonisation.

Cross-cutting issues and support for enabling environments identified in the RPP

35. The R-PP identifies cross cutting options to enhance the environment for REDD+ implementation, therefore increase opportunity of GHG abatement. The crosscutting options and enabling environments include:

- Develop a Land use Plan to reduce competition for land by allocating appropriate land uses to specific activities;
- Support Land Tenure Management to ensure that land is used for optimal productivity;
- Improving forest governance though intra- and inter-sectorial linkages and supporting stakeholder involvement;

- Support for Gender Equity which allows involvement of women and youth in forest management and conservation;
- Ensure environmental conservation in all forest related activities such as harvesting; and
- Support private sector participation though Public Private Partnerships.

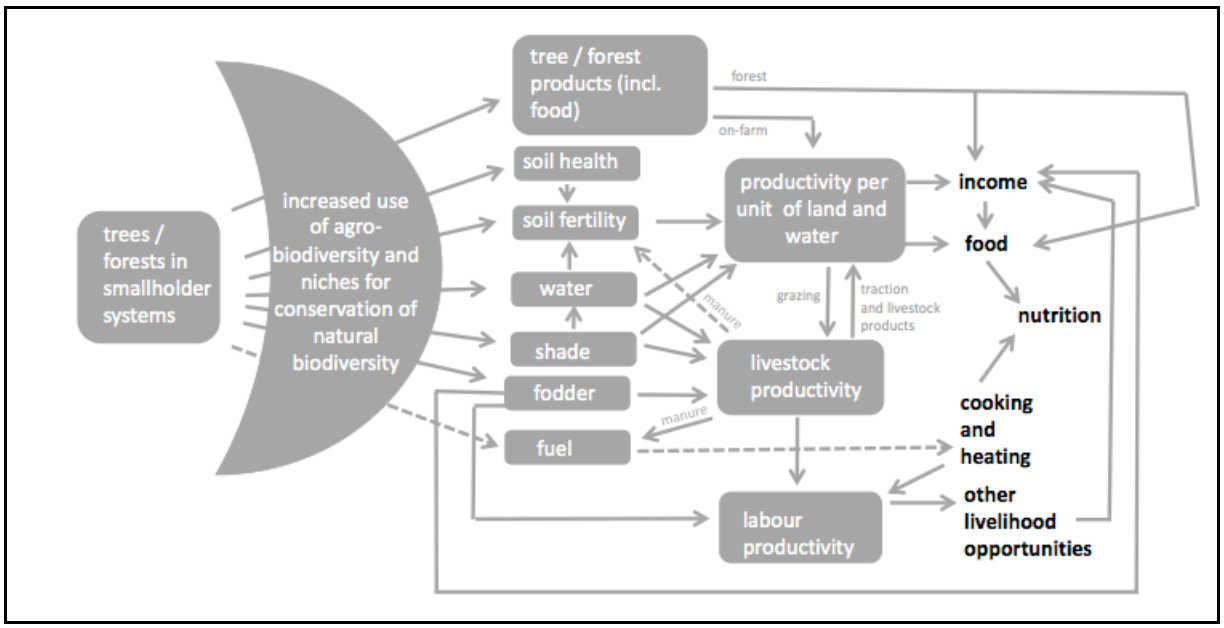
2.3 Opportunities from the agroforestry strategy

36. The Agroforestry Strategy for Rwanda has been developed by the Ministry of Agriculture (MINAGRI) in collaboration with the Food and Agriculture Organisation of the UN (FAO) and the International Centre for Research in Agroforestry (ICRAF). This strategy emphasises the importance of trees for livelihoods in Rwanda. Due to the limitations of the land resource and the high population density, agroforestry is considered to be the best option for enhancing tree cover in the country.

37. Agroforestry comes with additional benefits to agricultural landscapes. The trees can contribute to the family diet through providing fruit; enhance family income from sale of fruits, timber, poles, and energy wood. The trees planted on the farms provide the family with their wood requirements on the door step and thereby contribute to conservation of the forest estate. In addition, agroforestry trees stabilise agricultural landscapes through shade provision and wind control in farms, such as those planted in coffee and tea farms. Many of the tree species used fix nitrogen and all support overall nutrient cycling, which reduces need for fertiliser application. In the fragile soils of Rwanda, agroforestry trees also reduce soil erosion and enhance infiltration. Many of the trees species employed can also provide fodder for silvi-pastoral and agro-silvi-pastoral programmes. Finally the presence of the trees does not increase farm labour since they are managed concurrently with the crops. Figure 6 below illustrates the system intensification when trees are planted in agricultural lands.

38. Agroforestry is, therefore, a priority investment for FIP, noting its great contribution to the productivity and sustainability of agricultural landscapes of Rwanda. It also provides an opportunity to increase tree cover in the country and can make a strong contribution to GHG emission reduction.

Figure 6 How trees contribute to sustainable intensification of farmer livelihoods[35]



2.4 Opportunities identified in the Forest Landscape Restoration Programme

39. The Forest Landscape Restoration Programme (FLRP),[36] which is supported by the International Union for the Conservation of Nature (IUCN), has mapped the degradation status of the country and has specifically illustrated drivers of deforestation and land degradation in Eastern province. In this province, Shrubland are prevalent (Table 2 above) and livestock rearing is the predominant livelihood activity. The listed drivers in this relatively drier area of Rwanda include high human pressure on the fragile land resources, inappropriate agricultural practices, low rainfall which supports only sparse vegetation and poor forest governance.

40. The FLRP has identified the need to develop proper management plans to support sustainable management of the fragile forests, noting also that many of the Shrubland are currently an important source of charcoal for the whole country. Charcoal is produced using traditional kilns, which have low efficiency that results in increased tree cutting to meet rising charcoal demand. In addition, there is active conversion of forests and Shrubland for agriculture. Intensified agroforestry activities are strongly indicated as an effective means of addressing these problems while also supporting livelihoods.

2.5 Opportunities from the Intended Nationally Determined Contributions (INDC)

In 2016, Rwanda Submitted its INDC[37] to the UNFCCC. As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), Rwanda understands the importance of fulfilling the commitments and obligations of the convention particularly the principle of "common but differentiated responsibilities and respective capacities". The INDC based on the GGCRS vision for actualising climate-resilient, low-carbon economy by 2050 is action based and was developed through a consultative process. The INDC identified priority GHG emission reduction areas from the forestry sector as illustrated in Table 8 below.

35 The Agroforestry Strategy. Ministry of Agriculture (MIINAGRI) Rwanda 2017

36 MINIRENA (2014). Forest Landscape Restoration Opportunity Assessment for Rwanda. MINIRENA, IUCN, WRI. viii+51p.

37 Intended Nationally Determined Contributions (INDCs) of Rwanda. Republic of Rwanda. REMA/UNEP/GEF. Nov. 2015

Table 8 Opportunities for GHG abatement provided in Rwanda's INDC

Thematic area	Sub activity	Description of the problem, Goals and Targets	GHG abatement opportunity
Sustainable intensification of agriculture	Mainstreaming agro ecology techniques using spatial plant stacking as in agro forestry, kitchen gardens, nutrient recycling, and water conservation to maximise sustainable food production;	Seasonal shortages of food supply as a result of poor harvests caused by droughts and flooding and soil erosion are among the most significant signs of how the agriculture sector is vulnerable to climate change in Rwanda. In order to adapt to this situation, Rwanda intends to mainstream agro ecology technologies in its current agriculture intensification programme and other natural resource-based livelihood programmes. 100% of the households involved in agriculture production will be implementing agro forestry sustainable food production by 2030.	Reduced GHG emissions from land use change
Sustainable Forestry, Agroforestry and Biomass Energy	Promote afforestation/ reforestation of designated areas through enhanced germplasm and technical practices in planting and post-planting processes;	The Rwandan forestry sector provides the main part of the primary energy needs (97% of cooking energy) to the population. Since 2002, there have been consistent gap in wood products supply and demand with deficits reaching 12 million cubic meters in 2009. This deficit shows how the forest sector is and likely to remain under pressure. In order to deal with this main issue, Rwanda intends to improve the management of its forest resources by increasing efforts in using quality germplasm, planting trees at the right time (rain season) and improving post-planting care,. Furthermore, the country intends to use mixed-species approaches which contribute greatly to the achievement of both mitigation objectives and adaptation benefits of ecosystem resilience and biodiversity. Through this strategic action, the country's target is to achieve an overall 30% sustained forest cover of the total national land surface by 2030 from 28.8% in 2013.	Reduced GHG emissions through sequestration
	Employ Improved Forest Management for degraded forest resources;	Land scarcity is a primary constraint to the expansion of Rwanda's forest resources. Rwanda should maximize the productivity of its many degraded forest plantations which present an opportunity to increase biomass supply without converting additional land. By 2030, Rwanda will implement public private partnerships to sustainably managing all forestry plantations through multiyear contracts with forests operators (in cooperatives) who will plant and maintain young plantations until they reach their commercial size.	Reduced GHG emissions through sequestration

2.6 *Opportunities from the Green Growth and Climate Resilience Strategy*

41. In support of Green Growth and Climate Resilience for Rwanda (GGCRS), the Rwanda National Strategy on Climate Change and Low Carbon Development was developed. The strategy has 14 programmes of action two of which address to the forest sector (Figure 5 in Section 1.8 above). These two programmes of action (*Forest Ecotourism, Conservation and promotion of Payment for Ecosystem Services (PES) in Protected Areas* and *Sustainable Forestry, Agroforestry and Biomass Energy*) have been adopted as the guide to FIP investment areas.

42. The GGCRS identifies the role of research and implementation of best practices in tree growth and agroforestry. It identifies a quick win from the use of an Integrated Development Programme (IDP) to facilitate implementation of climate-resilient, low-carbon development in rural and urban areas, incorporating the Vision 2020 Umurenge Programme. The GGCRS identifies a need for local budget sources to implement the proposed activities. However, it tasks FONERWA with responsibility for developing a climate financing plan to attract and streamline climate financing, including developing a mechanism for voluntary carbon markets and developing a strategy for leveraging private investment for low carbon initiatives.

43. FIP funding, which is now part of the wider Climate Investment Funds basket, is therefore an opportunity to implement the GGCRS and enhance the participation of the forestry sector in national climate resilience programmes.

2.7 *Opportunities identified during the Stakeholder Consultation process*

44. Drivers of deforestation and forest degradation are not static since they respond to changing livelihood and wider developmental needs and changes. The rapid growth and changing livelihood patterns of the people of Rwanda required an update of the drivers of deforestation beyond what was done in the R-PP. The FIP development process therefore carried a stakeholder analysis (Figure 7 below) of the drivers and a summary of the problems identified by stakeholders and proposed remedial action is provided in the Table 9 below.

Figure 7 Location of specific areas that were identified for stakeholder consultations

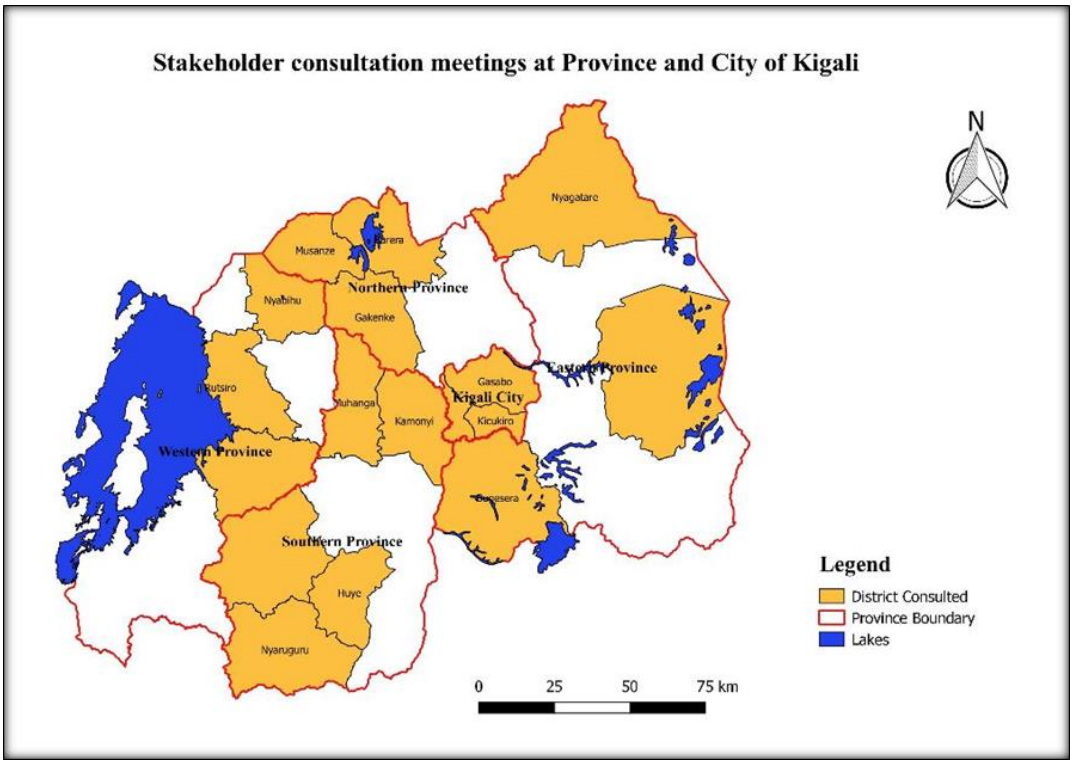


Table 9 Problems and remedial actions identified during stakeholder consultation

Problems identified	Remedial actions
1. Pressure on land for different purposes due to the high population density and the increasing developmental needs. Rural economies are based on extractive economic industries dependent on agriculture and forestry, with limited livelihood options for the poor rural and forest adjacent communities.	1. Improve coherence and coordination of policy implementation on ground, involving close coordination of the variety of stakeholders and enforcing forest governance. This includes strengthening the capacity of extension services and communities
2. Competing claims for forest resources between the local communities and forest conservationists with each stakeholder claiming a stake in the forest resource.	2. Establish an inclusive efficient sustainable forest management approach.
3. Low capacity of implementation of forest programmes and regulations due to limited number of skilled forest extension officers, lack of sufficient supportive facilities.	3. Manage the existing public forests sustainably so that they can provide wood products to meet the local demand
4. Low awareness of forest conservation, knowledge of best practices in forest management and an erosion of the traditional regulations that protected forests due to demand for livelihood and developmental needs.	4. Raise awareness of communities and other stakeholders to promote agroforestry to provide wood resources close to the family while stabilising the agricultural landscapes
5. Poor quality seeds, poor species site matching and poor implementation of silvicultural operations makes tree planting as a business in the farms non profitable and no sustainable.	5. Review the process of seed procurement, provide seeds of improved quality and enhance species-user- site matching.
6. Poor efficiency in wood conversion, which results in low value of the end product	6. Promote alternative source of energy and adopt other technologies for wood conversion into charcoal to reduce wastage

3. ENABLING POLICY AND REGULATORY ENVIRONMENT

3.1 International and Regional Conventions and Commitments

45. The Republic of Rwanda is signatory to the following conventions related to the forestry sector: Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species (CITES), UN Convention to Combat Desertification, United Nation Framework Convention on Climate change (UNFCCC), Bonn Challenge (Rwanda pledged to restore 2 million ha with trees and forests by 2020) and the Paris Climate Change Agreement. The implementation of FIP support will be an opportunity to fulfil national obligations to international commitments.

46. Furthermore, the Republic of Rwanda participates in various regional initiatives under organisations such as the African Union Agenda 2063 (Africa We Want), East African Community (*e.g.* EAC Climate Change Policy), COMESA, New Partnership for Africa's Development (NEPAD), Nile Basin Initiative (NBI), and Commission des Forêts d'Afrique Centrale (COMIFAC). Within these programmes, forestry and natural resources feature strongly among the areas targeted for regional collaboration. FIP investments will seek to strengthen the capacity of forestry institutions to enhance the performance of Rwanda in international and regional forums and processes.

3.2 National Policies and Regulatory Frameworks

47. Rwanda has made laudable steps in developing legal and policy frameworks governing the development forestry sector:

- The Constitution of Rwanda (amended in 2015) is the highest framework legislation for forest management. The Constitution recognises forests as natural assets for protection and as such it stipulates that every person, as well as the state, has the duty to protect, safeguard and promote the environment (Art. 49);
- Rwanda Vision 2020 (and the envisaged Vision 2050), the Economic Development and Poverty Reduction Strategy (EDPRS 1, 2 and soon 3) and the National Green Growth and Climate Resilience Strategy (GGCRS) launched in 2011 are key national policy frameworks that guide development interventions in all sectors, including the forestry sector in the country; and
- In terms of national forestry policy and legislation, the National Forestry Policy (2010) and its revised version of 2017 (currently at an advanced stage of approval), the forest law (2013), the Forestry Sector Strategic Plan (2017 - 2021) (also currently at an advanced stage of elaboration and approval), the ENR Strategic plan (2018-2024) (at an advanced stage of elaboration) and the Agroforestry Strategy (also at an advanced stage of elaboration under the support of FAO) provide the principal policy and legal frameworks to guide the protection, sustainable use and improvement of forestry resources in the country.

48. Other policies, laws and programmes that relate in many ways to forestry resource management include the Land policy (2004), Agricultural policy (2004), Strategic Plan for Agricultural Transformation (SPAT I, II & III), National Adaptation Programme of Action to Climate Change (NAPA), the Environment policy (2004), Mining policy (2010), Biodiversity policy (2011), Wildlife policy (2013), Biomass strategy policy, Environment Law (2005) and Land law (2013). Taken together, all these policy and regulatory frameworks provide an adequate foundation for FIP implementation and stakeholder engagement in forestry resource governance, development, protection and utilisation.

49. During stakeholder consultations, a number of challenges were identified in respect of policies and the regulatory provisions. These included, *inter alia*:

1 Weak enforcement and compliance with forestry policies, laws and regulations;

2 Inadequate financing of the forest sector;

3 Weak forestry governance and coordination among different sectors and stakeholders;

4 Competing policies over uses of land and forest resources; and

5 Inadequate policy and legal provisions for addressing emerging forestry issues such as carbon trade and benefit sharing of forest ecosystem services revenues (PES schemes).

50. However, there are additional challenges relevant for FIP in Rwanda, including (i) rural poverty, which is one of the main drivers of deforestation and forest degradation in the country; (ii) weak capacity of local communities' institutions to ensure access to the benefits of REDD; and (iii) lack of governance mechanisms that ensure the equitable distribution of REDD benefits among all relevant stakeholders and within local communities. As gender mainstreaming is evident in most Rwandan political instances, gender mainstreaming around the benefits of REDD and more widely is strongly emphasised and inherent in all FIP programme activities.

51. The FIP investments will address these challenges by prioritising forestry governance and performance through targeted support that seeks to strengthen implementation of policies and regulation, forestry governance and capacity building at all levels, to generate reliable data and information on forestry and to develop a national accounting system for forest ecosystem services.

52. The National Strategy for Transformation (NST) for the period 2018 to 2024, which lays the foundation for the wider environment sector contribution to Rwanda achieving the Sustainable Development Goals and becoming an upper-middle income country by 2050, is in process of finalisation. The targets and priorities detailed in the strategy were compiled from sub-sector thematic working group consultations and grouped into priority targets and interventions. Three of

the five so far identified are highly relevant to the FIP investment plan and have been accommodated. These are:

- Sustainable and productive land management with sustainable and productive water resource management;
- Sustainable and productive forest resource management; and
- Safeguarding environmental resources.

53. Additionally, the proposal for *Quality weather and climate services* will be of immense assistance in identifying the range of agroforestry and forestry species and varieties to accommodate the needs and capacity of the full range of actors to be involved.

3.3 Institutional mandates, roles and responsibilities in forestry sector

54. The mandate for management and development of forests outside national parks belongs to the Ministry of Lands and Forestry through the Rwanda Water and Forestry Authority (RWFA) which was established in 2017, to oversee formulation of policies, legislation and standards in the water and forestry sector (ROR, 2017).

55. The Forestry Department within RWFA has four units (Non-Timber Forest Products and Agroforestry, Forest Management, Forest Business Support and Forest Planting Materials) each headed by a director. At district level, there is a district Forestry and Natural Resources Officer together with Forestry Extension Officers at sector level (Animateur forestier).

56. RWFA/FD will be responsible for the implementation of the FIP investment plan at national level while district authorities will be in charge of its implementation at decentralised level. Furthermore, the opportunity for supporting and scaling-up Public-Private-Partnership (PPP) schemes, such as the co-management scheme currently implemented by some tea factories for a number of public forests, will be sought to improve management of public forests.

57. Other institutions with roles and responsibilities related to forests include the Rwanda Environment Management Authority (REMA), the Rwanda Development Board (RDB), which manages forests under National Parks, the Rwanda Agricultural Board (RAB), which currently has oversight of forestry research, Ministry of Agriculture and Animal Resources (MINAGRI), which is envisaged to take the lead in implementation of agroforestry interventions (agroforestry strategy) in the updated National Forestry Policy, Ministry of Infrastructure (MININFRA), which has the lead in implementing the biomass energy strategy, Ministry of Finance and Economic Planning (MINECOFIN), Ministry of Trade and Industries (MINICOM), Ministry of Local Government (MINALOC) and higher learning and research institutions (Universities, Colleges and Research Centres). Even though institutional mandates are well defined, scope remains for further improved coordination of interventions, leading to better synergy between the various actors in the forestry sector.

58. Other key stakeholders within the forestry sector include international/regional and local NGOs and CSOs, private sector entrepreneurs, land owners and local communities. Many NGOs and CSOs are engaged variously in rural development, soil and water conservation, sustainable land management, sustainable agriculture, forest conservation, advocacy for good governance, efficient biomass energy use and the promotion of alternative energy, biodiversity conservation and ecotourism development and therefore will be key collaborators towards successful implementation of the FIP Investment Plan. A more detailed account of stakeholders and their roles and responsibilities is provided in Annex 2.

59. FIP investments will build on existing forestry programmes, sector coordination processes and initiatives. Emphasis will be on (a) strengthening institutional capacities for policy implementation and coordination, (b) strengthening the capacity of forestry manpower at all levels (with a particular

focus on up-skilling technicians to support much improved field level activities, wood value chains and value chain addition) and (c) developing and supporting sustainable forest industries that can generate further employment opportunities in the forestry sector overall.

3.4 Regulatory and policy frameworks and REDD+ objectives

60. The existing regulatory and policy frameworks support REDD+ objectives of reducing emissions from deforestation and forest degradation and enhancing carbon sequestration. Considering the importance of forest ecosystem services and the critical gap between supply and demand of wood products, most of the regulatory and policy frameworks in the country from the constitution of Rwanda of 2003 (amended in 2015) to the National Forestry Policy of 2017(in the process of the approval) aim at enhancing tree and forest cover and ensuring sustainable management of forest resources.

61. For example the target to reach a forest cover of 30% of land area by 2020 is reiterated in most policy documents including EDPRS I&II, NFP (2017) and FSSP (2017-2021). The pledge to the Bonn challenge of restoring 2 million ha of landscapes with trees and forests as well as the launching of the Green Growth and Resilience Strategy in 2011 all testify to the ambitious efforts of the Government of Rwanda to support REDD+ objectives

3.5 Forest regulation and governance gaps and challenges

Gaps in the forest regulatory and policy frameworks

62. The mere existence of excellent regulatory and policy documents is, however, not alone sufficient to generate desired outcomes; their effective implementation remains to be delivered at both Central and local government levels. The achievement of expressed targets has been often hindered not only by insufficient financial and human resource capacity but also by weak institutional capacity at district level. One of the main constraints to achieving forest sector targets at district level has been the absence of comprehensive and standardised forest planning and implementation tools. It is anticipated that this issue will be addressed through the elaboration and implementation of the "*National Forest Management Plan (NFMP)*" and "*District Forest Management Plans (DFMP)*" which are both stipulated in the forest law of 2013.

63. The NFMP is currently at an advanced stage of elaboration. The DFMPs for most districts have been elaborated (only six districts out of thirty remain) mainly with the support of the PAREF project (both Belgian and Netherlands components). However, their effective implementation will require strengthening the capacity of the districts both in terms of improved funding and human resource capacity. Sadly, most finished DFMPs remain unused as no district has ever felt sufficiently confident to start effective implementation of the DFMP. FIP support should therefore aim to strengthen the capacity of districts to implement their DFMPs.

64. The Forest Law of 2013 outlines the main strategies to ensure sustainable management of forest resources including (i) elaboration of forest management plans for all forest plantations equal to or larger than 2 ha, regardless of their tenure (art. 11, 13, 14); (ii) obligation on every person in the country to protect forests (art. 20); (iii) obligation on private forest owners to have a licence for harvesting any forest plantation equal to or larger than 0.5 ha (art. 39, 54); and (iv) obligation to obtain a licence for clearing a forest plantation for other land uses, including private owners, regardless of the size of the forest (art. 52).

65. Unfortunately, the Forest Law (2013) does not provide for any incentive for the creation of forest plantations or the planting of trees. Such incentives would likely encourage private individuals who have land to plant forests or agroforestry trees on croplands. Incentives would also likely improve the observed very low survival rate of tree seedlings planted during annual national tree

planting campaigns and the obvious competition between crops and trees for scarce land. The establishment of some kind of payment for ecosystem services (PES), revenue sharing or simply incentives schemes can help address significantly this gap in the current forest regulations.

Forestry governance shortcomings

66. The Forestry Sector was not given a priority share in the development agenda until the adoption of Vision 2020 and adoption of the National Forestry Policy in 2004. In fact, the sector received very little funding, in the range of 1.2% to 6.5% of the budget of the Ministry of Agriculture where the Forestry Department was lodged from 1996 to 2003.[38] During stakeholder consultations, underfunding of the forestry sector and weak forest extension services were frequently identified as constraints to forest sector development in all provinces in the country (Table 9 above).

67. Another challenge facing the forestry sector is the regular institutional changes and restructuring of forestry governance arrangement. While these changes are often driven by the urge to improve efficiency in achieving desired results, they have impacted negatively on the development of the forestry sector in the country because of the lack of continuity and institutional memory. For example, the Ministry of Forestry and Mines (MINIFOM) endured for only three years, the National Forestry Authority (NAFA) existed for only four years while the Rwanda Natural Resources Authority (RNRA) operated only for six years (Table 10 below).

68. A further challenge relates to effective coordination of interventions within the environment and natural resources sectors. Despite the existence of the ENR Joint Sector working group, there seems to be poor coordination and monitoring of interventions resulting in poor synergy among the many actors within the sectors. The Forestry Department has poor records on forestry actors and their annual achievements.

69. Moreover, the Forestry Department has not produced and published annual reports providing a narrative description of annual achievements and including tables synthesising the past year's achievements for the past ten years. Publication of annual work plans for the department, as well as for forest sector regulation together with technical guidelines could also play a very positive role in developing the forest sector in Rwanda. Therefore, strengthening of institutional and technical capacity as well as effective monitoring and coordination of interventions will be essential for successful implementation of the FIP Investment Plan.

[38] MINITERE (2004). National Forestry Policy

Table 10 Reforms in the governance framework of the forestry sector since 2003[39]

No.	Managing institution	Legal reference	Dates (Year)
1	Transfer of Directorate of Forestry from MINAGRI to MINITERE	-	2003
2	National Forestry Authority (NAFA)	Law no. 17/2008 of 20/06/2008	2008
3	Ministry of Forestry and Mines (MINIFOM)	-	2009
4	Ministry of Natural Resources (MINIRENA)	-	2011
5	Rwanda Natural Resources Authority (RNRA)	Law no. 53/2010 of 25/01/2011	2011
6	Rwanda Water and Forestry Authority (RWFA)	Law no. 04/2017 of 03/02/2017; Law no. 06/2017 of 03/02/2017	2017
7	Ministry of Lands and Forestry (MINILAF)	-	2017

Enhancement of the value of forest ecosystem goods and services

70. The Government of Rwanda is in the process of developing a Natural Capital Accounting system, which will also include a forest capital account taking stock of the total value of forest ecosystem services. It is expected that this will contribute to raising the profile and competitiveness of the forest sector in the country. The current low level of competitiveness of forests can partly be attributed to the lack of markets for ecosystem services, the poor productivity of most planted trees and limited returns on forest products.

71. Rwanda, like other developing countries, has made little headway so far in the design of performance-based payments. Apart from the revenue sharing schemes around major National Parks, there are no other performance-based payments for communities around other forest blocks. Attracting investment in REDD+ will depend largely on being able to guarantee minimum enabling conditions for sustainable forest production, while markets for ecosystem services are being consolidated. The FIP Investment Plan will support establishment of adapted Payments for Ecosystem Services (PES) schemes that can serve as incentives for local communities to participate fully effectively in forest management.

Role of communities in forest management

72. Local communities are generally involved in forest plantation establishment (tree planting) either during community work days (umuganda) or as paid labour. However, their full involvement in forest management has been long neglected, which has led to alarming illegal harvesting in public forests. So far there has been no known attempt to organise local communities into forest cooperatives that could be involved in forest management activities. The new forest policy of 2017 emphasises participatory forest management (policy statement 7) and gender mainstreaming as a

[39] Sources: ROR (2008). Law n° 17/2008 of 20/06/2008 establishing the National Forestry Authority; Nduwamungu (2011) Rwanda Forest Plantations and woodlots (AFF 2011) and ROR (2017) Law no. 04/2017 of 03/02/2017 and Law no. 06/2017 of 03/02/2017

way to reinforce sustainable management of forests and tree resources "*while increasing benefits to local communities*". The FIP Investment Plan will support implementation of this policy statement.

Guidelines on Land Use Planning

73. In 2016, MINIRENA circulated a draft of *Rwanda National Land Use Planning Guidelines* (see Box 4 below). The draft is comprehensive, logical and highly appropriate for the country. Although these guidelines do not yet have legal force, they will be a very valuable to guide land use planning for all FIP supported interventions.

Box 4 Proposed *Rwanda National Land Use Planning Guidelines* circulated by MINIRENA in 2016 to stakeholders

- There must be no cultivation at all on slopes beyond 55%, instead there should be afforestation and the protection of existing vegetation;
- Promotion of appropriate species selection for site planting;
- Regulating exploitation of forest products and Services *e.g*. charcoal, logging, and non-wood products;
- Zone and protect water catchments areas in hilltops, hill sides, mountains and forests;
- Embrace integrated ecosystem management planning;
- Protect hills, mountains and forests through identification, mapping, inventory, easement and gazettement;
- Encourage interagency coordination and public-private and community partnerships in planning and management efforts of these resources;
- Prevent the burning of grass and any other vegetation in areas of intensive agriculture or on steep slopes;
- Promote agroforestry and encourage woodlots establishment on farm lands;
- Rehabilitate degraded areas through re-afforestation and enclosure for natural regeneration;
- Undertake an assessment of the carrying capacities for various goods and services before any extraction to ensure sustainable use of hilltops, hillsides, mountain and forests;
- Encourage forestry with indigenous species on hilltops, hillsides, and mountains;
- Provide buffer zone of 5m between forest plantations and other land uses for purposes of minimising bad effects;
- Encourage ecotourism in hilltops, hillsides, mountain and forests;
- Establish disaster preparedness in forest fires and landslides, mudflows, rock falls, flush floods, volcanic activities, diseases and pests among others; and
- Promote participatory forest management.

Land tenure

74. Land tenure issues have been subject to very intensive review and a wide-ranging process of land titling has been undertaken. The key elements of this process are presented in Box 5 below.

Box 5 Land tenure in Rwanda

In Rwanda, land as a resource is the most important asset both for production and survival. It will remain the foundation of the economy, based on agriculture, for a long time to come. From a social-cultural point of view, Rwandans are very attached to the land which is the foundation of Rwandan social and cultural traditions. As a result, competition for access to land is growing due to the combined effects of scarcity, population growth, and a high number of landless.

In a bid to address continuing insecurity regarding land rights and all land related issues, the Government of Rwanda adopted policies and enacted laws and decrees that are a good move into a land tenure reform process with key elements of land rights and tenure arrangements being found in a range of laws and policies. These include:

- The Constitution of the Republic of Rwanda of 04/06/2003 (Art. 29, 30, 31, 32);
- The National land Policy of February, 2004 (Chapters 4 and 5);
- The Organic Law determining the use and management of land in Rwanda of 14/05/2005;
- The Law relating to expropriation in the public interest of 19/04/2007;
- The Inheritance Law of 1999; and
- A series of decrees or orders (more than 20) have been enacted to clarify and implement various aspects of the Organic Land Law. The most important of these are:

(1) Order No. 53/01 of 12/10/06 determining the Structure, the Powers and the Functioning of the Office of the Registrar of Land Titles;

(2) Order No. 30/01 of 29/06/2007 determining the Exact Number of Years of Land Lease, which sets out the length of leases available for certain types of land; and

(3) Order No. 002/2008 of 1/4/08, which defines Modalities of Land Registration and provides for two types of certificates of land rights – the Certificate of Registration of Full Title and a Certificate of Registration of Emphyteutic Lease.

Full Title is available for private land of individuals, private state land, the City of Kigali land, district land and land held by parastatals. Emphyteutic leases (15 to 49 years) are generally granted for long terms and require prescribed land uses and development. Emphyteutic leases of 50 to 99 years are similar to a concession and are granted for private state land leased to private investors for industrial and commercial uses in urban area or agriculture uses in rural areas (GOR Land Registration Order 2008d; GOR Land Lease Order 2007c; GOR Order on Registrar of Land Titles 2006b).

The land policy (2004) and Organic law on land (Law No. 08/2005 of 14/07/2005) constituted the first comprehensive governance framework for land ownership, use and management in Rwanda. These provisions recognise land as an instrument for social, economic and political transformation. With regard to agriculture and gender integration, the land law has paved way for improving security of tenure through land registration and removed barriers to women acquiring and owning land either individually or through marriage. Land registration has raised the value of land as an instrument of collateral to secure credit financing and has improved market transactions, which is boosting production.

The Organic Land Law No 08/2005 of 14/07/2005 determining the use and management of land in Rwanda seeks to ensure better land management and land administration but more importantly to ensure security of tenure to all existing occupants of the land.

Key characteristics of the organic land law are:

- Land as a common heritage of past, present and future generations (Art 3): With exceptions

of the rights given to people, the state has supreme powers to manage all the national land, and this is done in the public interest while being aimed at sustainable, economic development and social welfare, in accordance with procedures provided for by law. In this regard, it is the state that guarantees the right to own and use the land;

- Rights of access to land for all Rwandese without discrimination (Art.4): Under the principles of this article, women, including widows, should not be excluded from the process of land acquisition, use and control. Moreover, female orphans should not be excluded from the process of land inheritance;
- Rights of foreigners over land are protected (Art.6);
- Equally, protection of rights over the land acquired through custom and rights acquired from written law (Art 7);
- Land tenure according to different land categories is identified in the law (Art.9 to Art.18) and land tenure types are related to the categories of land identified in the law (Art 23 to Art 29); and
- Systematic registration of all occupied land (being occupied under customary arrangements or under written or statutory arrangements) and issuance of new land title (Art.30).

Systematic registration is supposed to be the means of securing land tenure and, as such, it is one of the objectives of the land policy and the law to ensure security of tenure and to mitigate conflicts among others. Article 30 of the Organic Land Law (2005) stipulates that registration of the land a person owns is obligatory. Registration of the land people have allows them to get legal documents and clarify their land rights, which also increases their security of land tenure.

It is anticipated that Land Tenure Reform will facilitate Rwandan economic transformation in both urban and rural sectors and contribute to economic development by:

- Enabling all citizens of Rwanda – as individuals, businesses or public bodies - to transfer their land assets freely and fairly;
- Encouraging changes in land use to support development, while managing and guiding the change to ensure the benefits are divided equitably and the environment is protected; and
- Private investment will be promoted in land through increased land tenure security.

The Land Tenure Regularisation process was completed in 2014. The key results from the land tenure reform in Rwanda can be summarised as follow (Sagashya, 2012):

- Clear and strong institutional framework supported by strong political will;
- Strong legal framework that ensure security of tenure to all land owners;
- Systematic Land Registration that allowed delivery of secure land titles to all land owners and helped in land-related dispute resolution;
- Providing a good foundation for economic growth in the interests of all landowners; and
- Land now has a clear identity as a capital asset and the title can be used to access bank loans and other benefits using the land as collateral.

Land tenure and forests in Rwanda

Different study reports shown that in Rwanda, deforestation and forest degradation were tied to a complex array of socioeconomic and factors. Many assume that among the most important of these were the particular bundle of rights regulating who can benefit from land (tenure reform) and the overall assurance that those rights will be upheld (tenure security).

By assigning land title to landholders, the Government of Rwanda has taken this opportunity to secure land rights and improve land use to ensure economic growth, poverty alleviation and environment sustainability for the betterment of all citizens. The acquisition of land title improves the ability of landholder to exclude legally competing users and thereby strengthens incentives to invest in the forestry sector and to sustainably manage forests for secure long-term benefits.

Gender issues

Box 6 Gender dimensions in forest management in Rwanda

A. Introduction

The Government of Rwanda gives considerable and serious attention and promotes its approach to gender issues and to the improvement of women's situation as its main positive governance issue. Given the country's recent history and the many other social issues which its citizens and leadership have to face, it is also legitimate to wonder to what extent addressing gender issues takes place at the expense of dealing with other social problems which may be equally or more contentious, the priority given to gender issues and in particular to the empowerment of women serves to uphold the Government of Rwanda's commitment to promote a society free from all forms of discrimination and injustice

B. Legal and policy gender aspects in Rwanda

At international level:

In 1995, Rwanda adopted the Beijing Platform of Action and undertook strategic actions aimed at tackling nine identified crucial areas among the twelve critical areas suggested in the Beijing Platform for Action. Rwanda ratified and adhered also to a number of international and regional conventions, charters and declarations, including the Convention for the Elimination of all Forms of Discrimination against Women (CEDAW) and the African Charter on Human and People's Rights, the Sustainable Development Goals (SDGs), the United Nations Security Council Resolution 1325, the Universal Declaration of Human Rights of 10 December 1948, the New Partnership for Africa's Development (NEPAD), and COMESA among others. All of these instruments highlight gender as an important approach for sustainable development.

By ratifying the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW), in November 1981, and the International Conference on Population and Development (ICPD) in 1994, Rwanda undertook appropriate measures, including legislation to fight any act or practice of discrimination against women, to modify and/or abolish existing laws, regulations, customs and practices which embody discrimination against women. It is important for Rwanda just like other countries to measure progress towards achieving the commitments made to achieve gender equality objectives and standards set by these instruments.

At the national level:

The following legal documents are relevant to women's rights: the Constitution which gives precedence to such treaties over national laws, the Civil Code, the Inheritance Law, the Land Law and the Gender Based Violence Law, the Law governing persons and family and the Law governing matrimonial regimes, donations and successions.

Article 11 of the Constitution prohibits discrimination based on sex and article 26 states that wife and husband have equal rights. Equality between women and men is also reflected in article 9, ensuring that women are granted at least 30% of posts in decision making organs. The Inheritance Law and the Land Law give women equal inheritance and property rights. According to article 50 of the Inheritance Law all children inherit in equal parts without any discrimination between male and female children. Article 4 of the Land Law prohibits any discrimination based on sex in matters relating to ownership or possession of rights over the land. This article further states that wife and husband have equal rights over the land.

Law No 32/2016 of 28/08/2016 governing persons and family and the Law nº27/2016 of 08/07/2016 governing matrimonial regimes, donations and successions repeal discriminatory provisions against women. Gender based violence is an acknowledged problem in Rwanda, a Law for the Prevention, Protection and Punishment of Gender Based Violence was approved in 2008.

In 2010, the government issued a 'National Gender Policy' which aims to promote gender equality and equity in Rwanda through a clearly defined process for mainstreaming gender needs and concerns across all sectors of development. The Policy defines the institutional framework and mechanisms within which gender equality and equity policies and programmes will be designed, implemented, monitored and evaluated, and coordinated. It thus guides the integration of a gender perspective into all sectors and institutions.

C. Women in Rwandan Economy

The Government of Rwanda has put in place an enabling environment for gender promotion in its sustainable development. Laws, programmes and strategies were developed including:

- Law no. 22/99 of 12/11/1999 related to matrimonial regimes, liberalities and successions, giving to women the same rights of succession as men;
- Land Organic Law no. 08/2005: Equal access to land for both men and women;
- Labour law was gazetted in 2009;
- Women employment Strategic plan;
- Women's guarantee and funds;
- Establishment of Savings and Credit Cooperatives based in each sector called Umurenge SACCO;
- UMWARIMU SACCO Program that help teachers of primary and secondary schools to access to soft loans;
- People's Bank for Women's Promotion (Banque Populaire pour la Promotion Féminine) ;
- Savings and Credit Cooperative « COOPEDU » initiated by Women's association "DUTERIMBERE";
- Chamber of Women Entrepreneurs in Private Sector Federation (PSF).

D. Gender and forestry

Gender equity is a fundamental human right and a matter of social justice. It is also essential for the sustainable use and management of forests. Women are major actors in forest resource management throughout the developing world. Women and children are the primary collectors of fuelwood and fodder for home consumption and for sale at local and urban markets. This alone gives women a major role in the management and conservation of forest resources.

When convinced of the economic benefits and practicality of a forest improvement or management scheme as well as ensured of appropriate rights for forest resources such as usufruct rights and tenure, women can form a powerful lobby to persuade the entire household or community to invest the resources necessary to make the scheme work. Involving women in forestry sector often makes the difference between achieving or not achieving project objectives, particularly for long-term sustainability of interventions in forestry sector. Because of their traditional reliance on forest resources, women are often the chief repository of knowledge concerning the use and management of trees and other forest plants.

In Rwanda, both men and women play important roles in contributing to the development of the forestry sector. Women actively participate in various activities including finding non-forest product for daily family consumption, various markets, and other market activities for family's economic development. However, there has been limited recognition of women's role in the forestry sector and little attention has been given to redesigning practices to meet the unique needs of women, given their household responsibilities and to uplift women's condition and take up opportunities at various levels, especially at management level.

Considering the poor involvement of women compared to men particularly in the decision-making process in forestry management and development at national levels, the challenge of gender has to be integrated into different forest management plans. In this framework, the Government of Rwanda is endowed with a revised 2017 National Forest Policy (NFP), Forest Sector Strategic

Plan 2017-2022 (FSSP) and National Forest Management Plan 2017-2026 (NFMP) and gender and equity were embedded in each of those forest sector's governing documents.

- The National Forest Policy seeks to mainstream gender and equity objectives into forest and related development and management planning decision making processes. The "participation" targets of Policy Statement 6 – and the inclusion of strategies in the Forest Sector Strategic Plan to enact this participation, ensures that "gender" has a voice in forest sector development from project commencement onward.
- The Forest Sector Strategic Plan also provides main actions to be undertaken for gender mainstreaming and shows main national indicators giving concrete numbers for the integration of gender aspects, annually until 2021.
- The National Forest Management Plan provides specific operational objectives for the management of gender related issues to be reached. These include:
  - ⇒ Ensure that all activities for the NFMP implementation are gender sensitive;
  - ⇒ Development and distribution of gender mainstreaming guidelines;
  - ⇒ Encourage individual women entrepreneurs;
  - ⇒ Ensure that women and women's organizations are engaged in forest management activities;
  - ⇒ Targeting an employment rate of at least 30% women;
  - ⇒ Contracting of leaseholders for FMUs to work with and support women's organizations;
  - ⇒ Accommodate special needs (breastfeeding, childcare) of women employed, as well as ensuring equal pay or benefit sharing for men and women.

With the purpose of ensuring that gender aspects are effectively integrated throughout the revision / elaboration of Districts Forest Management Plans (DFMP) and its implementation, Guidelines for Gender Integration into Forestry were drafted shall also be "extrapolated" and considered for the National Forest Management Plan.

4. EXPECTED CO-BENEFITS FROM FIP INVESTMENT




4.1 Introductory remarks

75. Forests in Rwanda are vital sources of energy, water, livelihoods and biodiversity; they also have a critical role to play in climate change adaptation to ensure the continued supply of ecosystem services on which many Rwandans, and the nation as a whole, depend (see Section 1.2 above)

76. Results from stakeholder consultations throughout the country (see Annex 2), show consistently that there is strong interest in, and demand for, high quality and productive agroforestry, rehabilitation of degraded public forests and sustainable management of forests at all scales and regardless of ownership. There is widespread concern at the limited range of tree species options and with the often poor quality of tree seeds and nursery stock. There is also frustration at the limited access to extension and advisory services. Furthermore, large numbers of people are aware of the dangers that climate change will bring but often feel helpless as a result of the current lack of alternative options and their pressing need for forest products, which are in increasingly short supply.

77. FIP finance will aid in addressing the underlying causes of deforestation and forest degradation and will provide in parallel multiple benefits including, *inter alia* improvement in forest health and condition, raised increment of forest growing stock, enhanced biodiversity conservation, increased greenhouse gas absorption, and further improvement in the socio-economic condition of local people.

4.2 Socio-economic benefits

78. One of the major problems that forest sector in Rwanda is facing, and which was confirmed during consultations across the country, is the limited awareness of local communities and their restricted involvement in the planning and management of forests and forest resources.

79. The FIP Finance will be channelled into the rural economy to improve community livelihoods. The dominant modalities to be employed are through creating employment opportunities in tasks such as rehabilitation of degraded forests on public land and restoration of degraded land as well as offering much improved intervention packages for use on private land.

80. The participatory planning approach will take into account the differing roles and needs of men, women, youth and disadvantaged and marginalised groups, to provide them with equality of opportunity for engagement in the design and implementation of activities, in decision making and in the sharing the benefits from forest resource management, including information and new technologies. Consultation and knowledge sharing will be well-resourced to allow informed decision making from a range of alternative, ecologically sound options, which are designed to accommodate the capacity and needs of the full range of potential actors.

81. A much strengthened local extension service linked into the system of Farmer Feld Schools (FFS - see Box 7 below) is proposed to ensure that implementers have greatly improved access to advice and guidance as well as opportunities to see and learn from demonstration areas as well as fellow farmers. To ensure that opportunities are widely available and that people have the capacity to take up these opportunities, FIP finance will facilitate communities surrounding the locations where work is carried out to access micro-finance facilities and introduce benefit sharing schemes along the lines of those already developed around the Volcanoes National Park.

82. FIP finance will also support the development of forest-based value chains in order to create employment, generate income and reduce poverty reduction, especially in rural areas. An increase in forest-based activity would also have a good distributional impact, comparing income shares by categories of household with those of other potential sectors. The development of higher forward linkages through further processing and adding value in rural area is critically important in terms of increasing employment and income benefits to local populations, thereby improving their livelihoods and reducing poverty, but also incentivising and supporting the sustainable use and management of forests.[40]

83. The development of the wood-based value chain, including promoting NTFPs and some agroforestry products, combined with enhancing skills among workers in the forest based value chain could make a significant contribution to additional growth, employment and income in the project areas. Through enhanced intensification of agroforestry practices, crop production will increase and generate more income to local farmers. Promotion of the agroforestry value chain is being led through the SPCR programme and FIP supported farmers will be able to join into this.

84. FIP finance will promote win-win partnerships between local communities and the private sector, and promote local business opportunities. Engaging with and in the private sector is a strategy that aims to reduce the dependence of such initiatives on donor finance, and rather embed productive communities into systems that can be sustained in the long term. FIP Investment therefore will aim to stimulate these entrepreneurial programmes through the planted forest grant scheme, agroforestry systems that are linked to the market, community-based forest management, and improved smallholder charcoal production. It will also encourage small and medium-scale enterprises to generate local community jobs through sustainable forest management practices.

[40] Stoian, D. 2005. Making the best of two worlds: rural and peri-urban livelihood options sustained by non-timber forest products from the Bolivian Amazon. World Development 33(9): 1473-1490

4.3 Environmental benefits

85. The proposals for FIP funding are based on parallel intensification of agriculture to reduce the pressure that has led to agricultural expansion on increasingly marginal and unsustainable land. It is this land which is the source of much of the soil erosion losses and the origin of flooding, landslides and the resultant collateral damage from this.

86. Much of the area of Rwanda in which FIP will intervene is now largely and intensively used, with man-made landscape of predominantly exotic trees and agricultural crops, often in monocultures at a range of scales. FIP proposals aim to make as much use as possible of indigenous and multipurpose species, especially in forest landscape restoration.

87. Through fine-scale land-use planning focused on sustainable landscapes, the aim will be to restore natural forest structures where possible and link these with tree planting along watercourses and other modes of connectivity. Within such a reticulation system based heavily on indigenous species, more intensive tree and agricultural crops can be grown while maintaining high biodiversity values at the landscape level.

88. In addition to biodiversity, such an approach also allows introduction of sources of medicinal plants, fruit and fodder. Stabilised landscapes have lower rates of soil loss, more balanced water flows and improved water quality. More dynamic micro-ecosystems also tend to have fewer problems with pests and diseases than do extensive monocultures and also have higher populations of pest predators. In particular, the increased diversity of forestry and agroforestry tree species will increase resilience to climate change as well as to pests and diseases.

4.4 Economic value of co-benefits

89. Ascribing monetary values to co-benefits is highly site-specific. However, detailed cost-benefit analyses will form part of the mandate for the strengthened forest research capacity proposed in this report. In terms of wider benefits from soil conservation measures, and to household livelihoods, there is a very comprehensive report prepared by Wildlife Conservation Society in concert with Uganda National Forestry Authority and the EU Forest Resources Management and Conservation Programme in October 2004. While not directly related to Rwanda, it is based on similar conditions and thus a useful guide.[41]

90. In terms of soil fertility loss from deforestation, the figures quoted are between 6 and 12% of GDP. To this would need to be added the economic cost of damage to infrastructure, to water supplies and to human health and life. The current rate of soil loss in Rwanda is thus of major national economic significance. While FIP alone will only bring direct benefits to a relatively small area of the country, the application of improved practices can in due course extend to the whole country.

91. The same paper also ascribes economic values to biodiversity in different forest types. This is not directly relevant to Rwanda, which has already recognised this and secured important economic benefits through high value ecotourism. FIP will assist by providing tree cover and by protecting watercourses that will also act as gene flow corridors to maintain biodiversity health but valuing this is a major task and perhaps simply applying the precautionary principle would be preferable.

92. In terms of financial returns and economic costs, studies for Rwanda's current application for pilot funding in Gicumbi generated the following figures (Table 11 below).

41 https://www.researchgate.net/profile/Andrew_Plumptre/publication/265047944_The_Value_of_Uganda%27s_Forests_A_livelihoods_and_ecosystems_approach/links/540dbe1f0cf2d8daaaccc7be/The-Value-of-Ugandas-Forests-A-livelihoods-and-ecosystems-approach.pdf

Table 11 Indicative financial and economic values

Model	IRR[42]	Non-financial benefit	Value[43]
Agroforestry – direct benefits only, soil fertility and conservation not included	11.8%	Avoided yield loss	US$ 43/ha/an
		Additional agricultural revenue	US$ 61/ha/an
Protection forest – selection system, fodder poles and timber only	9.5%	Avoided soil erosion and increased fertility	US$ 22/ha
Eucalyptus – industrial wood and smaller poles only	16.0%	Reduced sedimentation and sediment removal cost	US$ 16/ha
Pine plantation for timber	12.1%		

4.5 Cost effectiveness

93. At this time, it is not possible to provide detailed information on overall cost-effectiveness, further clarity on this will be achieved at the project formulation stage. The scale of the proposed intervention has been judged from the capacity of RWFA and others to implement the proposed activities; the proposals are challenging but feasible. The costs used in developing the proposals are based on a mixture of national costs with regional norms used where these are not available. Cost elements are detailed in Table 25

[42] Figures prepared for current Rwanda Rural Green Economy and Climate Resilient Development Programme proposal to GCF

[43] Derived from figures in WB ESSA studies for Support to Rwanda Transformation of Agriculture Sector Program Phase 3

Box 7 Farmer Field Schools - Twigire Muhinzi

Farmer Field Schools (FFS) consist of groups of farmers who get together to study a particular topic. FFS is a forum where farmers and trainers debate observations, experiences and present new information from outside the community.

Importance of FFS

FFS play important roles such as the following;

i. Empowering farmers with knowledge and skills
ii. Making farmers experts in their own fields.
iii. Sharpening the farmers' ability to make critical and informed decisions.
iv. Sensitizing farmers in new ways of thinking and problem solving
v. Helping farmers learn how to organize themselves and their communities.

Essential elements of FFS

The group comprises of individuals (20-25 in number) who have a common interest, forming the core of a Farmer Field School. The FFS tends to strengthen existing groups or may lead to the formation of new groups

The field is the teacher. It provides most of the training materials like plants, pests and other facilities. In most cases, communities provide a study site with a shaded area for follow-up discussions.

The facilitator is a technically competent person who leads group members through the hands-on exercises. The facilitator can be an extension agent or a Farmer Field School graduate.

The curriculum follows the natural cycle of the subject, be it crop, animal, soil, or handicrafts. This allows all aspects of the subject to be covered in parallel with what is happening in the FFS field.

Core principles for FFS

i. **Promotion of farmer-driven extension and research through farmer** – to- farmer approaches of Farmer promoters &FFS Facilitators
ii. **Farmer empowerment** through promoting organization of farmers into Twigire farmer groups at village level.
iii. **Demand driven extension &advisory services** through formation of agricultural committees with farmers' representation at all implementation levels
iv. **Pluralistic approach** for broaden extension services delivery where various actors such as the private sector (NGOS, input suppliers) and FBOs also provide advisory services.
v. **Strengthened decentralized extension** services management and delivery
vi. **Development of ICT** to enhance provision of advisory services (FPs &FFS Facilitators are facilitated with extension packages through plus a toll free number-4675- helpdesk for farmers
vii. **An effective monitoring and evaluation system-** A coordinator assigned to each district- Regular reporting; Feedback provided. Studies /surveys undertaken at end of each season.

5. COLLABORATION AMONG MDBS AND WITH OTHER PARTNERS

5.1 General points

94. The government of Rwanda maintains a continuous dialogue and coordinates closely with its different development partners, placing a premium on cooperation and co-financing programs. The Multi-lateral Development Banks (World Bank, AfDB), development partners (Netherland Embassy, FAO, EU, BTC, SIDA, USAID, and UNDP) and other funding organisations provide funds and backstopping for bigger forestry projects in Rwanda.

95. Donor support has contributed significantly to the forest sector in form of: infrastructure development; institutional development; research and technology development; biodiversity conservation; reforestation and afforestation programmes. Furthermore, donor support is assisting the government's efforts towards sustainable development by supporting activities aligned with the National Forestry Policy and other development programmes such as Economic Development and Poverty Reduction Strategy (EDPRS) currently being reorganised into the National Strategy for Transformation and Prosperity (NSTP).

5.2 MDBs involved in FIP investments in Rwanda

96. **The World Bank** has recently funded the project *Landscape Approach to Forest Restoration and Conservation* (LAFREC). This project supports the application of the landscape approach to forest restoration and conservation for the improvement of ecosystem functions and services in the Gishwati - Mukura landscape, and possibly adjacent parts of the Nile-Congo Crest. It aims to arrest and eventually reverse the ongoing land conversion in the area through forest restoration (to the extent feasible) and agro-forestry approaches in a manner that will maximise ecological connectivity and hydrological function in the landscape. The LAFREC project also demonstrates the potential of and informs future implementation of forest friendly land rehabilitation approaches to leverage the much larger land husbandry investment programs being led by the agriculture sector, as well as any potential future investment programs in the water resources or forestry sectors that may also be interested in adopting the approach.

97. **The African Development Bank (AfDB)** has been and continues to support forest projects in Rwanda. The recent AfDB funded project "Rwanda Sustainable Woodland Management and Natural Forest Restoration Project"(PGReF). This project intended to reduce the deforestation and the poverty rate in all eight districts of Southern Province of Rwanda. Specifically it aimed to increase forest cover, improve the livelihoods of the local population and establish mechanisms to promote carbon market and other payment for ecosystem services modalities.

5.3 Bilateral organisations and other partners

98. Many other development partners have been providing important support to the development of forestry sector in Rwanda.

99. **The Kingdom of Belgium**, through its development agency (BTC), funded two consecutive projects aiming to support reforestation in Rwanda (PAREF Be I) and a follow on programme for development of the forestry sector in Rwanda (PAREF Be II)

100. **The Kingdom of Netherlands** funded two consecutive projects aiming firstly at support for reforestation in nine districts of the Northern and Western Provinces of Rwanda (PAREF NL-I) and then at support for Participatory Forest Management also in nine districts of Northern and Western Provinces of Rwanda (PAREF NL-II).

101. These projects contributed to create a vibrant, healthy local ecology that ensures sustainable management of forest for sustainable growth of country's economy.

102. **The Food and Agriculture Organization of the United Nations (FAO)** has been supporting Forest Monitoring Systems and national Measurement, Reporting and Verification (MRV) with a regional approach for the Congo Basin Countries. FAO also is implementing a new project on *Restoration of Degraded Lands through forest and landscape restoration* (FLR) and on *Sustainable food and agriculture* (SFA).

103. The R-PP identified the development of an MRV system as one of the priorities in the implementation of the REDD+ strategy. Due to the delay in submitting the R-PP, FIP support now includes a REDD+ implementation strategy for Rwanda which has not so far benefited from any other REDD+ support (neither FCPF nor UN-REDD support has been sought). Therefore, in the implementation of FIP support, REDD+ core activities identified in the R-PP including: (i) development of an MRV system; (ii) identification of a Forest Reference Level and (iii) development of a Safeguard Information System will be undertaken. The RPP is submitted with the FIP document for reference. In due course, the MRV system is expected to be incorporated into the wider National Forest Monitoring System for Rwanda. Annex 4 contains an action plan for implementing Rwanda's R-PP.

104. **International NGOs** (IUCN, ICRAF, Vi-Agroforestry, World Vision Rwanda, IFDC/CATALIST) all implement forestry or related projects at various scales, including projects on the landscape

approach to forest restoration and conservation, rural development and food security, trees for food security, sustainable energy production through woodlots and agroforestry.

105. **Local NGOs** play an important role in the promotion of tree planting, tree nursery practices, soil conservation, watershed management, and biodiversity conservation.

106. FIP investment will build on the successes of past and current forestry programmes, and seek leverage from on-going and planned programmes related to the FIP investments. In this sense, FIP investment will help create an enabling environment for the engagement of diverse donors and actors with the planning and scaling up of the activities implemented within the framework of the FIP. It will also support capacity building efforts for different stakeholders (government institutions, private sector, NGOs and communities), to enhance their knowledge and capacity, and encourage pro-poor and community approaches to the management of forest resources and forest landscape restoration.

107. Table 12 below summarises key investments in sector in last five years in the areas of Agroforestry and sustainable agriculture (AF), Sustainable Forest and Landscape Management (SF-LM**)** and, Wood Supply Chain, Improved Efficiency and Added Value (WSC)

Table 12 Recent development assistance report to the forestry sector in Rwanda

Project Title	Donor	Implementing Agency	Budget EURO/ US$/ RWF	Project period		Relevance to the 3 FIP project concept notes		
				Start	End	AF	SF-LM	WSC
Support Program for the development of the forestry sector in Rwanda (PAREF Belgium)	BTC / Belgium	RNRA	7,860,000 Euros	2011	2015	✓	✓	
Trans-boundary Agro-ecosystems management Programme for the Kagera River Basin	FAO	FAO Rwanda	1,200,000 US$	2010	2014	✓		
Sustainable Energy Production Through Woodlots and Agroforestry in the Albertine Rift (SEW) -	IFDC	IFDC/ CATALIST	8,300,000 US$	2009	2013		✓	✓
NUFFIC_NICHE/RWA/100 Development of a gender – sensitive; Agroforestry/Forestry/Agriculture Extension Centre	NUFFIC / Netherland	UR/CAVM	466,875 Euros	2011	2015	✓	✓	✓
Support to Participatory Forest Management (in 9 districts of the Northern and Western Provinces of Rwanda) (PAREF NL-II)	Netherlands	RNRA	6,305,510 Euros	2013	2016		✓	
Forest management and afforestation (Earmarked forest activities by Districts) - Districts (2014/15 financial year)	GoR	RNRA	2,628,894 US$	2014	2015	✓	✓	
Increased productivity and sustainability of agriculture through integrated forestry, land and water resource management (DFNC Annual action plan) -	GoR	RNRA	15,651,659 US$	2104	2015	✓	✓	
Improving Sustainable Productivity in Farming Systems and Enhanced Livelihoods through Adoption of Evergreen Agriculture in Eastern Africa	Australian Aid	ICRAF& RAB	492,669 US$	2012	2016	✓		

Project Title	Donor	Implementing Agency	Budget EURO/ US$/ RWF	Project period		Relevance to the 3 FIP project concept notes		
				Start	End	AF	SF-LM	WSC
Management of terrestrial ecosystems and forest resources (DFNC Annual action plan)	GoR	RNRA	10,890,010 US$	2015	2016	✓	✓	✓
Support Program to the Reforestation in 9 districts of the Northern and Western Provinces of Rwanda (PAREF NL-I)	Netherlands	RNRA	10,200,000 Euros	2009	2013		✓	
Trees for Food Security: Sustainable farm productivity and enhanced livelihoods through Evergreen Agriculture in eastern Africa	ICRAF	ICRAF&RAB	500,000 US$	2012	2016	✓		
Kirehe Community-based Watershed Management Project (KWAMP)	IFAD	MINAGRI	49,300,000 US$	2009	2016		✓	
Forest Monitoring Systems and national Measurement, Reporting and Verification (MRV) with a regional approach for the Congo Basin Countries	FAO	FAO Rwanda	538,744 US$	2011	2015	✓		

5.4 Multi-sectoral approaches

108. The multi-sectoral approach at landscape level will help to ensure good synergy between FIP Investment and other initiatives for the sustainable management of forests and agricultural land and the promotion of their social, sectoral and spatial integration. FIP is also aligned with the Strategic Programme for Climate Resilience (SPCR), which is being developed under the Pilot Programme for Climate Resilience (PPCR) in Rwanda, supported by the World Bank and the African Development Bank. The SPCR is envisioned as an investment plan that highlights the need for climate-change resilience investment in Rwanda across a wide range of sectors including agriculture, water and forestry.

109. The SPCR includes specific cross-linkages to FIP for agroforestry, community scale woodlots and skills building in small-scale forestry and community woodlots, as well as value chain development for agroforestry and non-timber forest products and for the wood value chain, all of which directly relate directly to the proposed interventions for FIP investment. There is also a potential cross-linkage with urban resettlement development. Furthermore, SPCR support for meteorological and hydrological data collection will be of great value for refining species selection models and for assessing the changes to water quality from catchments where FIP support operates.

6. Identification and rationale for projects and programmes to be co-financed by FIP



6.1 Overview of the background

110. The most critical statistic relating to the forest sector in Rwanda is the great disparity between wood supply and demand. The National Forest Management Plan 2017 – 2021 (NFMP) quotes figures for estimated demand of around 5.8 M odt/an in 2015, while sustainable supply was around only 2.3M odt/an. This supply gap has been rising for more than two decades and is met in the short term by liquidation of growing stock which further exacerbates the problem.

111. Resolution of the problem will require action to increase supply, through improved productivity, an increased production area through restoration of degraded and/or bare land and to reduce demand, which is predominantly for wood fuel, through introduction of alternative energy sources and increased efficiency of use. The current sources of supply are roughly one half from private plantations and one quarter each from public forests and agroforestry on private land. Results from the National Forest Inventory (NFI) show that production from private and public planted forests and woodlots averages less than 8m³/ha/an compared with potential national average productivity of 16m³/ha/an.

112. Nevertheless, even if the current supply were doubled by assuming such a productivity level was achieved, this would still only meet 80% of current demand. Rising population and expectations mean that the current demand will continue to increase. Urgent action to reduce demand is essential to prevent liquidation of existing available forest and tree resources and avoid a significantly raised threat of illegal cutting in currently well protected national parks and public forests.

113. Underlying low productivity there is a series of technical deficiencies. In outline these are:

- Very limited range of species available for use in forestry and agroforestry;
- Sub-optimal site-user-species matching;
- Often genetically degraded seed and poor quality plants provided too late for effective establishment; and
- Late planting, lack of adequate tending and management of planted trees and damage from fire and other agencies, including pests and diseases.

114. Climate change predictions for Rwanda, notably increased temperatures and more erratic rainfall, will intensify the current challenges as many of the current species used are already off-site and vulnerable to damage from drought and increasingly from pests and diseases. At the same time, agricultural expansion onto progressively more marginal land, often without adequate soil conservation measures, increases the risk of soil erosion, landslides and floods causing major damage to infrastructure, water supplies and to human health and life.

115. In essence, the requirement is for sustainable land use and forestry, with agroforestry systems widely employed to stabilise soils and increase fertility, leading to elimination of agriculture on unsuitable land and creating openings for restoration. In parallel, rehabilitation of public forests can deliver much improved production in the longer term. Careful planning of species selection, silvicultural treatments and the forest management systems will be required to increase the range of future options for uses other than purely biomass, the current major demand.

116. In order to ensure sustainable land management, fine-scale land use planning will be required to allocate land uses (agroforestry, forest plantations, restoration and rehabilitation) to the correct land facets. This process will result in changes to current use and have a negative effect particularly on the current livelihoods of those farming unsustainably. The current forest policy and NFMP note that the intention is to have rehabilitation of public forests and forest restoration undertaken through a land leasing system. This can be designed to allow groups of individuals to undertake the task in return for title to the material grown. Such an approach will require skills training and grants to cover around 50% of the direct costs. A similar approach can be used for the renewal of poorly productive private forests with a grant being given together with skills training.

117. A key aim in the National Forest Policy and the Forest Sector Strategic Plan is to improve the quality of all forestry activities. NFMP notes in this respect that private growers, as well as those working on public forests, must adhere to high standards of silviculture in order to ensure optimal productivity and service values. By providing grants and free training, leverage can be exerted to ensure sound species selection and subsequent silviculture and forest management.

118. In respect of agroforestry, while those farmers employing it will receive an enhanced benefit stream from tree products and improved soil fertility and stability, they will also provide wider downstream benefits through reduced soil loss and siltation, regularised water flows and improved water quality. This justifies grants being paid, as payments for environmental services, which can be based on the economic values of the avoided costs of soil loss and flooding.

119. As well as plantations in public forest reserves, at national and district levels, there is public land along roadsides, water-courses and lakeshores. Legislation already allows for such linear forests to be managed by local communities and groups under a benefit sharing arrangement. Land which is restored from unsustainable agriculture may need to revert from private to public land. Restoration will bring great opportunity for establishing forest with a core of indigenous species and multipurpose trees that can be managed by extractive use and, where suitable, the single tree selection system; neither of these reduces the forest service values delivered. Careful planning especially of the species used along watercourses can contribute to biodiversity connectivity and gene flow, which is currently prejudiced in isolated natural forest patches.

120. The supply-side interventions noted above must be complemented by demand-side action. While there is a long standing strategy to reduce current dependency of wood and biomass fuel to 50%, there is also considerable opportunity to improve efficiency all along the wood supply chain; this includes conversion of wood into charcoal and conversion of round wood into sawn timber. The main strategy will be to replace current inefficient systems by, for example, financial assistance for new technology such as improved charcoal kilns, wood pelleting equipment and mobile band saws.

121. In terms of charcoal, it would be useful to determine the switch distance at which charcoal is more thermally efficient than Woodfuel carried the same distance, taking into account the loss of thermal value during carbonisation and the higher calorific value per gram of charcoal. An indicative figure is around 80 Km. In parallel, encouraging widespread use of more efficient charcoal stoves and stoves for wood pellets will also help reduce demand.

122. It is important to emphasise that success with the generic interventions noted above will require a number of overarching issues be addressed. Standards and guidelines covering field operations in agroforestry and forestry are required to ensure that everyone, but especially grant recipients, works to the highest standards. In parallel with training for direct actors, given free in parallel with grants, there will need to be a much increased cadre of trained extension personnel and training will also be required for those at more senior levels to ensure they are fully familiar with the standards and guidelines and with their application.

123. If new forestry and agroforestry is based on good quality seed and sound practice, then the GHG mitigation figure will be at least twice that achieved with current practice and planted material selected as an adaptation to climate change will have higher resilience. Unless new and improved approaches are adopted fully on the supply side, then there is likely to be mass stagnation of tree growth. Substantial funding for research to underpin the new approaches is included.

6.2 Rationale for the three identified project concept notes

124. The three project concept notes presented here are all focused on addressing the massive and critical imbalance between national wood supply and demand. They are synergetic, in that they will operate in parallel in the same wider localities, and mutually reinforcing. All three are fully consistent with Rwanda's goal of achieving a sustainable, low carbon and climate resilient economy as expressed in the range of policies and strategies that affect and influence the wider forestry and agroforestry sectors. This is fully congruent with the wider CIF-FIP final outcome of *improved low carbon, climate resilient development*. The three projects have been designed to accommodate the views captured during the field consultation exercise, see Section 2.7 above.

125. The three projects all focus on sustainable landscapes, in particular through support to sustainable agriculture through sustainable forestry and agroforestry management combined with efficient wood processing. All propose high quality delivery to optimise use of Rwanda's limited land resources. By devolving the activities to individuals, groups, communities and the private sector, there will be substantial impact on poverty through increased production and through new employment opportunities. At the same time, provision of greater access to extension advice and an overall enabling operating environment will encourage uptake and help to ensure high standards are widely achieved.

126. By at least doubling average productivity, the proposed new forestry and agroforestry plantings will in due course sequester some 1.5 million tonnes of CO_2e annually, an average of 9 tonnes/ha/an[44] for the total area of 168,000 ha. At the same time, in addition to the direct economic impact through increased production and employment, there will be substantial costs avoided from reduced soil erosion, landslides and flooding as well as better regulated water supplies of higher

[44] Based on figures prepared for current Rwanda Rural Green Economy and Climate Resilient Development Programme proposal to GCF

quality. With careful design, the proposed field operations will also enhance biodiversity, especially by improved connectivity. The inputs on improved wood use efficiency, in addition to creating more viable value-chains and increased employment will also have immediate impact on the wood supply gap. The results and impact will be fully compliant with the CIF-FIP country level transformative impact through reduced deforestation and forest degradation and, particularly, much increased forest carbon stocks.

127. In terms of country level catalytic replication outcomes, there is very good coherence with CIF-FIP aims. All three projects focus on empowerment and strong engagement of local communities in terms of both planning and delivery. The proposed wide-ranging grant mechanisms, which will be at a range of scales including micro-credit, will provide results-based payments not only for carbon but also for avoided environmental costs. These benefits will be in addition to direct revenues and revenue sharing from public plantations. In the case of agroforestry and small woodlots, there will be increased production for direct consumption, too, and benefits such as reduced travel time for wood collection.

128. The strong focus on sound land use planning, high quality planting material and a much diversified range of species together with improved management will deliver the CIF-FIP transformative co-benefit of improved biodiversity conservation and, particularly, much more resilient forest ecosystems.

129. The three project concepts proposed are as follows, see 7 for specific details:

- Development of agroforestry and sustainable agriculture;
- Sustainable forest and landscape management; and
- Wood supply chain, improved efficiency and added value.

6.3 Coordinated delivery of the three project concept notes

130. The two of the three concept notes that relate to sustainable agriculture and agroforestry with sustainable forest and landscape management are both predicated on the widespread application of improved technologies. The improvements include high quality seed, good silviculture practices and will be supported by enhanced extension, free skills training and fiscal support within a broadly enabling and supportive institutional and regulatory framework.

131. In the period for negotiation and finalisation of financial support from a range of multilateral and bilateral agencies, it is expected that Government of Rwanda would start to implement some of the essential precursor actions. These include, *inter alia*, training for a strengthened extension service; much increased, problem-oriented research to improve seed supplies and identify initial candidate species to add to the diversity of options available, including consideration of their appropriateness for the full range of users; the development of standards and guidelines; and preliminary work on the mechanisms and suitable amounts of grant for the different interventions envisaged. This work would be continued and consolidated during the first year of the FIP-supported programme so that field activities can commence in the second year.

132. During these two initial years, decisions will have to be made on the precise locations for the FIP support to be delivered. The aim will be to select a range of pilot districts and sectors within these that taken together encompass the full range of ecological and socio-economic conditions in the country. This is important since the aim is that once the interventions have been initiated and refined as necessary, there can be wide-scale replication across Rwanda and indeed the wider region where similar conditions pertain.

133. Within the identified pilot districts and sectors, preparatory fine-scale land use planning can be started so that specific locations are identified in good time for planning field activities to start in the

second year of FIP support. It is further anticipated that the identified localities will be subject to close control to prevent continuing deforestation and forest degradation within them. The main impact on GHG emissions, however, will accrue through the much increased productivity of new planting, which will be at least double current rates, and the greatly enhanced carbon storage that will result.

134. The field activities will replace currently stagnant or poorly productive trees in woodlots, plantations and agroforestry through the use of high quality planting material, correctly selected for specific site-user conditions followed by high quality tending and management. Although FIP financed activities will only occur on a relatively small proportion of the overall forest and agroforestry areas, the impact of demonstrations of the benefits from improved practice through fiscal and extension support is likely to fuel rapid uptake among users to whom the gains will be clearly evident quite rapidly due to much improved survival and initial growth.

135. In addition to improved productivity and the concomitant enhanced benefit stream, there will be increasing opportunities for employment and considerable gain through reduction of soil loss, landslides and floods. There will also be economic benefit from improved biodiversity connectivity. Related opportunities for employment in activities such as eco-tourism are unlikely to be very significant at least initially but could develop in due course in some locations.

136. The expected strongly demanded opportunities for replication can be funded subsequently through a mix of development assistance and national finance justified by the economic impact of increased production and service values and of avoided costs. The new employment opportunities created by the field-based activities are summarised in Box 8 below. These figures do not include increased employment in the agroforestry and wood supply value chains, nor in the much expanded supervisory and advisory personnel required; for example, there will be at least 500 new forest extension assistants trained by the FIP investment.

137. The proposals presented here are fully aligned with all relevant Rwandan policies and strategies including, *inter alia*, the 2017 National Forest Policy; the Forest Sector Strategic Plan 2017 – 2021; the latest (draft 3) of the Rwanda Agroforestry Strategy 2017 – 2027; the 2011 Green Growth and Climate Resilience Strategy; the 2015 Intended Nationally Determined Contribution for Rwanda; and the 2014 Rwanda Readiness Preparation Proposal. They are also in line with the overarching results framework for CIF-FIP.

Box 8 Indicative employment creation from field activities

This computation assumes that the 30,000 ha of forest rehabilitation, 16,000 ha of restoration, 2,000 ha of urban forestry and half of the 40,000 ha of individual, group and community woodlots would be established with employed labour over a six year period with an equal area established in each year. It also assumes that all 80,000 ha of agroforestry would be undertaken by family members rather than paid employees. In addition it assumes that all planting material would be raised in registered nurseries by trained people. It is likely that at least some agroforestry work will require aid labour, which is estimated at 40 days/ha for establishment.

Using models for a mix of higher input species such as *Eucalyptus* and lower input species such as pine and indigenous and multipurpose species (see Table 13 below) based on regional norms and GCF proposals for Gicumbi, the estimated employment opportunities in each of the six years is given in Table 14 below. For nurseries, it assumes 12 days labour input is required per 1,000 plants raised on average.

The figures for employment created are based on 150 days per year since initially the main tasks will be related to establishment, Thereafter, there will be more regular employment through the year as the planted trees start to be harvested and enter the value-chain. The employment created through the improved efficiency in the wood value chain and in the agroforestry value chain will be additional to these estimates.

Table 13 Assumed mix of high and low input species

Intervention	Higher input species	Lower input species
Rehabilitation	67%	33%
Restoration		100%
Urban forestry		100%
Woodlots	80%	20%

Table 14 Indicative employment in 000s of days

Category	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Field labour	1,738	1,982	2,086	2,153	2,218	2,266
Nursery labour	330	330	330	330	330	330
Total labour	2,068	2,312	2,416	2,483	2,548	2,596
Jobs, assuming 150 days per year	13,785	15,410	16,104	16,553	16,983	17,303

6.4 Employment creation focus

138. The *Vision 2020 Umurenge Programme* (VUP) approach will be used in implementing labour intensive activities such as tree planting and forest management activities (e.g. beating up, weeding, pruning, thinning and harvesting). The VUP is an integrated local development program to accelerate poverty eradication, rural Growth, and social protection. This is an initiative by the Government of Rwanda (GoR) in collaboration with development partners and NGOs. It is led by the Ministry of Local Government (MINALOC) and supported by the Ministry of Finance and Economic Planning (MINECOFIN). The Vision 2020 Umurenge Program (VUP) uses the existing decentralisation system and leverages technical and financial assistance to accelerate the rate of poverty reduction in Rwanda. The aim is to eradicate extreme poverty by 2020.

139. The VUP programme provides labour intensive work to unemployed people in rural area. It targets the most vulnerable members of local communities (the poorest) in labour intensive activities in order to raise their income through paid labour and direct financial support. The "*Ubudehe scheme*" which consists in grouping households in different wealth categories (household classification of income) and promotes collective action to solve community and individual household problems is generally used to determine people to be prioritised in VUP activities. The Ubudehe Approach has been established by the government of Rwanda as one of its strategies for poverty reduction and is commonly used, especially by VUP sectors in terms of planning as well as data collection. VUP has 3 components as follows[45]:

45 Carpio, M.A (2011) VUP Financial Services Component Implementation Guidelines

Table 15 VUP Components

VUP component	Service provided	Target group
1. Direct support	Cash transfer to poorest households	Extremely poor (classified as ubudehe 1) and unable to work
2. Public works	Wages (cash for work) to members of poor households	Extremely poor (classified as ubudehe 1 or 2), but able to work
3. Financial services	Facilitate the provision of financial services (savings, credit) and training for the poor	Covers various ubudehe categories, but inclusion of lower ubudehe categories is strongly encouraged

140. Moreover, the consultation process throughout the implementation of the FIP programme will emphasise fully effective participation of all stakeholders, including representatives of women and youth cooperatives and vulnerable communities' organisation in setting priorities and selecting interventions and ensuring their fair distribution both socially and geographically.

141. The implementation of the proposed projects of the FIP will be integrated in broader national Strategy of Economic Development and Poverty Reduction in general, and will be complementing others sectoral programs and approaches aiming at improving livelihood of poor communities, especially in rural areas in particular.

142. The Government of Rwanda has developed its own national initiatives to tackle poverty at the most local levels. In addition to the "Vision 2020 Umurenge initiative" described above, the "one-cow-per-family" programme, for example, provides families with milk for consumption and what is left over is sold for profit, improving nutrition and income at the household level. Other innovative programmes are related to Rwanda's National Employment Policy (NEP), which was developed in 2007 to meet the EDPRS 2 employment and productivity objectives and improve coordination and to provide a national framework for coordinating employment-related initiatives across many government ministries.

143. The NEP framework has four pillars: Skills Development, led by the Ministry of Education (MINEDUC); Entrepreneurship and Business Development, led by the Ministry of Trade and Industry (MINICOM); Labour Market Intervention, led by the Ministry of Public Service and Labour (MIFOTRA); and Coordination, Monitoring and Evaluation, also led by MIFOTRA (One UN Rwanda 2014). The NEP brings at least 19 overlapping programmes into an integrated framework intended to yield better results, including Kuremera, Hanga Umurimo, Agaciro Kanjye, and Youth Empowerment for Global Opportunities (YEGO) (Ministry of Economic Planning and Finance 2014).

144. As part of NEP, the Capacity Development and Employment Services Board (CESB) under the Ministry of Public Service and Labour (MIFOTRA), has developed a five-year programme for skills development to address critical skills needs in the high priority sectors designated by EDPRS .

145. In addition to employment, individuals will also benefit directly from increased productivity in their forestry and agroforestry and there will be new opportunities generated in the agroforestry and wood value chains. Special attention will be needed to identify intervention points which can be focused to meet the specific needs of women and other marginalised groups. In parallel, these groups need to be properly consulted and actively empowered so that their specific needs are correctly identified and catered for.

6.5 Cross-linkages with Strategic Programme for Climate Resilience (SPCR)

146. This FIP Investment Proposal has been developed in parallel with the Strategic Programme for Climate Resilience (SPCR). That document includes cross linkages to the FIP Investment Proposal.

These linkages are component 2b of SPCR programme 1 on climate smart agriculture and agroforestry, in which FIP would support the development of agroforestry and in return tap into SPCR component 1 of programme 1 on developing value chains. Although at least initially, much of the produce from agroforestry is likely to be directly consumed, products such as honey and other apicultural products could have high potential value for wider trading.

147. There is also a link with SPCR programme 2, component 2 on catchment restoration and protection which can take advantage of the forest restoration to be undertaken through the FIP-IP and will focus on the most vulnerable landscapes and in particular on watercourses within these. In cases of severe degradation, SPCR hard restoration can be complemented by tree planting to provide long-term stabilisation. Such restored tree cover, which will be predominantly indigenous and multipurpose species, will be managed by extractive use and the single tree selection system to avoid prejudice to the service values.

148. There will be opportunities to adapt and apply restoration technologies developed under FIP-IP in SPCR programme 3 on resilient human settlements and substantial opportunity to cooperate and collaborate on SPCR programme 4, component 3, which identifies a specific activity on a *Sustainable Fuelwood Management Project* in South-western Rwanda. This could easily be accommodated within FIP-IP project concept 2, which includes group and community woodlots at various scales. Finance included in the SPCR could be delivered through the structures that FIP-IP will put in place to ensure the highest possible quality of intervention.

6.6 Role of Civil Society Organisations

149. FIP projects will be implemented in partnership with the private sector and Civil Society Organisations operating in the project areas, which have yet to be designated. There will be opportunity for private enterprises that are given concession land for rehabilitating and/or managing public forest units to work with local farmers. These enterprises can be encouraged to engage with smallholder farmers and support them in adjacent or nearby areas to plant trees in their own land by providing seedlings, technical assistance, and markets for harvested wood.

150. The promotion of agroforestry will improve agricultural income and nutrition at the household level. Support provided by private enterprises to adjacent farmers for tree planting and agroforestry can be built into the grant scheme, which will need to be carefully designed for Rwandan conditions. Private enterprises and participating communities will all benefit from the FIP projects, through both direct investment and/or advisory services. The projects should also strengthen partnerships between the private sector and local communities.

151. As is made quite clear in the emphasis on all activities having to meet pre-defined operating standards, private enterprises supported through FIP projects must meet strict environmental and social standards, must demonstrate good practices and that safeguards, such as prohibition of conversion of natural forests to industrial tree plantations, and must ensure the full participation of local communities in their development plans.

152. NGOs and other Civil Society Organisations will play a key role in the implementation of FIP projects as they work closely with local communities and have good understanding of their aspirations and needs. CSOs, in collaboration with district and sector forestry personnel, will continue to support local farmers' extension services and technical training of farmers in improved land use and cultivation, enable land security for the participating communities, especially women, youth and other vulnerable groups, in all project areas and particularly in those adjacent to private sector concessions. CSOs could also be engaged in the grant support system for the establishment of smallholder woodlots as they already have valuable and effective communication systems in place.

6.7 Women and marginalised groups

153. If women and other marginalised groups are to be fully engaged, then understanding of and attention to their specific needs is essential. This will require action to ensure their engagement in consultation exercises and their inputs into developing appropriate intervention packages and identifying and strengthening opportunities for them to be engaged and empowered. This is noted in Sections 6.4 above and 6.11 below.

Box 9 Strategies for including gender and other marginalised groups in design [46]

Initially, inclusive consultations will be held to identify and discuss gender gaps in current forest policies and practices. Dedicated gender working groups and learning networks can be created building on strengthening what is already in place. Structures relating to decision making on forestry and agroforestry interventions need to be more gender balanced with adequate and effective female and male representation and concomitant decision-making powers.

Existing women's groups (CBOs) in the proposed project area will be identified together with their objectives, activities, successes, and constraints. Where there are no community-level associations in which women play an active role, the programme will assist local authorities in the creation of self-help groups and village-level development associations in which women can play a more active role in terms of forest access and resource use. Thereafter, demand-driven support and training will be provided to those groups that already to address the issues raised by analysis of problems and opportunities in forest access and resource use.

Women's organisations will be given targeted assistance to build their skills and knowledge more effectively leading to creation of forest user networks that can advocate effectively for women's rights in respect of forest related benefits. Small and Medium Size Forest Enterprises (SMFE) offer important opportunities to promote non-farm employment in rural areas and strengthen rural-urban links; the proposed programme includes provision to support value chains in agroforestry and in improving wood efficiency within which this will be accommodated.

Specific organisational and institutional support will be given to women's groups so rural and disadvantaged women can gain fair access to resources, credit, technical and entrepreneurial training, and guidance so that women will be able to play a full role in decision making. In addition, sufficient numbers of women will need to be employed as frontline extension staff, and in wider managerial and policy positions, to ensure gender balance and capacity to handle gender issues constructively.

Farmer Field Schools (FFS) recognise the importance of capacity building and empowering women farmers to increase production, income, resilience and food security .The proposed investment will take full cognisance of the fact that men and women face different constraints for which different solutions are required. For example, women's information networks are often smaller than men's, and hence offer fewer opportunities for learning about new productive opportunities. It will address adequately women-specific barriers in developing intervention packages, especially the unpaid care work in the household which results in women having less time to gain new skills, so that women can play a full role in the wider sustainable forest management landscape.

It is essential that the M&E plans and processes include indicators of progress towards the gender outcomes sought, including empowerment and full engagement in activities in and that these are monitored effectively so that the design and refinement of incentive schemes promotes and strengthens women's participation.

The principles laid out above in respect of women apply equally to other marginalised and disadvantaged groups.

[46] Assistance from World Bank gender consultant in providing this is acknowledged

6.8 Results framework

154. Table 16 below gives an overview of the results framework based on key FIP indicator suite.

Table 16 Indicative results framework

Indicator	Methodology and timeline
Tons of CO_2e sequestered / emissions avoided in project/program area	The national REL will be established at the outset as part of FIP. Thereafter, emissions changes will be monitored, reported and verified according to IPCC guidelines. A reduction in GHG emissions due to the implementation of the FIP will be accurately presented and this information is relevant for the country's National Communication and other REDD+ financing processes.
Hectares of forest restored/ afforested in program area and Hectares of protected forest in project/ programme area	Field sampling and ground truthing will be employed to record the area established under each intervention type. The monitoring will include qualitative assessment and areas reported will only be counted provided they meet the defined standards for survival and initial growth. The monitoring and reporting system will be designed to be congruent with standard National Forest Inventory practices and will be initiated in the first year of FIP support and be expanded as continuous forest inventory with permanent and temporary sample plots
Number of people in targeted forest communities with increased monetary or non-monetary benefits from forest resources	For agroforestry and woodlots, focus groups balanced by gender and socio-economic status will be established in representative locations at the outset and members asked to provide baseline information on benefits and on more subjective issues such as engagement and empowerment. Thereafter, focus group members will be asked to keep a diary and to provide regular interviews, for which some payment will be made. This information will be complemented by periodic balanced samples to confirm the findings from the focus groups and the combined information will be fed back for any necessary action or adjustment to processes and input levels.
	It will be more difficult to monitor the benefits accruing to those whose main engagement will be through employment in rehabilitation and restoration. Focus groups can be tried as above but it is likely that there will need to be greater reliance on periodic samples. Such samples should try and include community members who are not engaged but would like to be to determine the barriers they face and provide a basis for remedial fine-tuning. For actors in the agroforestry and wood value chains, who are likely to be more readily identified and will in the main be engaged long term, a system as described above for agroforestry of balanced focus groups and periodic sampling may be used. In parallel, efforts will need to be made to interview those who are not engaged in these value chains but would wish to be to identify barriers to entry that could be reduced or eliminated.

Indicator	Methodology and timeline
Government institutions provided with capacity building support to improve management of forest resources	The investment proposals include limited provision for skills building in government institutions. Such skills building should be hierarchical and coherent across the various levels of seniority. Such skills building should be formalised into the regular personnel management system based around annual staff appraisals and then subject to independent review of a sample of personnel at each grade. This system can be commenced immediately and should result in regular review and revision of in-service training as needs become apparent.
Reforms in forest policy, legislation or other regulations	At present, Rwanda has a well-integrated and coherent set of policies, strategies, legislation and regulation. Nevertheless, the much increased level of activity and the employment of significantly changed practices is likely to identify inconsistencies and conflicts that will require action. Limited provision has been made to support review and revision of all these instruments but it would be appropriate to have at least an annual review conducted by a group of representatives from all engaged ministries and agencies, and at a range of levels within these, to identify such glitches and propose remedies. This can be put in place immediately and tested before FIP support commences.

155. The M&E system will be complex because of the need to closely follow progress on both physical and social parameters (see Box 10 below) and triangulate numerical data with attitudes and perceptions. These are presaged in the table above and Rwanda is fortunate in having an effective National Institute of Statistics, which undertakes regular surveys on matters such as employment, income, poverty, energy sources, health, access to clean water and sanitation and also publishes this information. There is also an existing National Forest Management System in place. The scale, content, periodicity and structure of the M&E system will have to be defined by the team appraising the proposed projects but baseline information will be more readily available in Rwanda than in many other countries.

6.9 Energy sources

Table 17 Fuel used for lighting and cooking, %of HH

	% of households using electricity as main source of lighting			% of households with Oil lamp as main source of lighting			% of households with Candle as main source of lighting			% of households with Firewood as main cooking fuel		
	EICV4	EICV3	EICV2	EICV4	EICV3	EICV2	EICV4	EICV3	EICV2	EICV4	EICV3	EICV2
Rwanda	19.8	10.8	4.3	5	9.7	12.7	7.4	5.9	1.6	83.3	86.3	88.2
Kigali City	73.3	55.6	29.7	2.2	9.6	29.0	10.9	12.6	6.6	25.6	31.5	38.9
Southern	9.3	3.2	2.1	5.5	7.2	8.2	4.2	4.0	1.0	92.6	94.1	96.5
Western	14.7	8.2	2.0	7.2	14.8	16.7	7.4	6.1	0.9	88.3	92.2	94.6
Northern	10.4	6.7	1.0	3.5	4.9	8.6	9.7	7.0	2.3	94.4	90.9	86.1
Eastern	15.3	5.6	1.7	5.0	11.0	10.1	7.3	4.0	0.4	89.9	91.7	94.0
Urban/rural												
Urban	71.8	46.0	23.1	3.6	9.6	28.7	9.0	8.8	4.8	29.3	36.0	51.4
Rural	9.1	4.7	0.7	5.3	9.7	9.5	7.0	5.4	1.0	94.4	95.1	95.4

Source: http://www.statistics.gov.rw/publication/rwanda-poverty-profile-report-results-eicv-4

156. Given the very heavy dependence on wood and charcoal for energy, monitoring progress on energy sources will be a critical key indicator for FIP progress. Table 17 above provides a baseline against which monitoring of change can readily take place. Rwanda has an exemplary record of collecting and reporting statistical information that will be of great value in monitoring progress made as a result of FIP investment.

6.10 Coherence and consistency with National Forestry Policy 2017

157. As noted in Section 3.5 above, the Forest Law (2013) does not provide for any incentives for the creation of forest plantations or planting of trees but the National Forestry Policy (2017) emphasises participatory forest management (policy statement 7) and gender mainstreaming as a way to reinforce sustainable management of forests and tree resources "*while increasing benefits to local communities*".

158. The FIP Investment Plan will support the implementation of this policy statement. By using grants based around the economic values of improved landscape and forest management, including soil and water conservation, the leverage necessary to raise standards in all tree and agroforestry related activities conducted by individuals, groups, communities and others will be available. These grants will in effect be a form of Payment for Environmental Services and, by meeting a fair proportion of the initial costs, should encourage wide-scale uptake of the opportunity.

6.11 Outline Theory of Change

159. Table 18 below provides an Outline Theory of Change from Activities to Impact while Table 19 shows the key assumptions underlying this. This Theory of Change needs to be read together with Table 9 above which summarises the core drivers of forest loss and degradation as identified in Rwanda's R-PP and through stakeholder consultations conducted during the preparation of this document. The linkages between the problems are represented graphically in Table 20 below and the linkages while the interactions of the proposed solutions are presented graphically in Table 21 below.

160. The Theory of Change is predicated on the need for Rwanda's limited land resources to be used optimally and efficiently to meet the needs of the whole population and for the nation as an entity. Many current land uses, are currently sub-optimal and lead to land blocking by unproductive trees and severe landscape degradation from unsustainable farming practices. It identifies a route to transformational change, which includes reduced deforestation and forest degradation. The strategy is based on increasing direct management of forest resources by local communities through provision of an enabling environment and access to predictable and adequate financial resources to support high quality interventions at a range of scales by the full range of potential actors. The proposed 2016 National Land Use Planning Guidelines (Box 4 above) need to be validated and brought into use as a matter of urgent priority.

161. This is expected to result in a reduction of GHG emissions from forests and much enhanced carbon storage, improved biodiversity and more resilient forest ecosystems. The key modality to be employed to secure better protection and increased delivery of production and service values is to channel resources through individuals, groups and the private sector which will concurrently reduce poverty and improve the quality of life of local communities through increased consumption and employment opportunities.

162. Integrated land use planning must precede all interventions supported through FIP finance, which will be closely linked with that provided through PPCR support. This is essential to allow agricultural intensification that will release unsuitable land for restoration, through agroforestry and tree planting at a range of scales resulting in parallel reduction of soil erosion, flooding and landslides which at present blight the livelihoods and even the existence of rural people across the country.

Box 10 Physical and social threads

The precise localities where FIP supported activities will be undertaken cannot be specified until the projects start and will be decided during the first year of operation. It is anticipated that the localities selected will encompass the full range of ecological and social situations across the country so that the results will serve as pilots for the whole country. There are two major threads running through the three projects. The first is the 'hard thread' which encompasses the development of high quality technical interventions for the full range of sites and users (site-user-species matching) and which will be the focus of the research programme.

While complex, because of the wide range of ecological conditions and the varied requirements of different user groups, this is relatively straightforward albeit not easily achieved. Improved technical interventions will lead to the physical outcomes of increased productivity, enhanced carbon storage and reduced GHG emissions. They will also lead to tangible service values, such as reduced soil loss, flooding and landslides, and to improved water quality and biodiversity conservation.

The second 'soft thread' relates to co-benefits, such as improved livelihoods, reduced poverty, full empowerment in decision making, enhanced social inclusion, gender equity and equality. Achieving these will again be complex but rather less straightforward. The main mechanism that can be used to achieve these aims will be the specification of the grant mechanism. There will need to be different levels of grant for various recipients and it will be essential that the overall system (size of grant, specific conditions, eligibility criteria, provision of skills training and advice) is carefully designed to accommodate the needs of all groups.

This will require an extensive consultation process initially, which must engage with all stakeholder groups and, in particular, the marginalised and those with the least voice and influence. The range of technical interventions must include options that are designed specifically to meet the needs of women and other vulnerable groups so they have full opportunity to engage fully in both decision-making and in benefit-generating activities. This is implicit in the term site-user-species matching. As well as ensuring that interventions are available to cover the full range of ecological conditions they must also provide opportunities for the full range of users, which includes those currently marginalised. Thereafter, it will be essential to monitor physical and social progress comprehensively. It is vital that the results of this monitoring are fed back into the design of the overall interventions and to fine tune these regularly to ensure the outcomes are optimal.

The 'harder' physical and 'softer 'social threads must be delivered in close harmony if success and synergy are to be captured. High technical quality is critical for Rwanda with its limited land resources but is also crucial for the actors. Giving poor people sub-optimal quality material and poor advice increases their poverty since their meagre resources will not deliver good returns and may indeed be completely wasted.

Table 18 Outline Theory of Change

Core problem: Increasing degradation of land and natural resources, lack of products & services; poverty reduction and economic growth plans prejudiced

Activities	Outputs	Outcomes	Impacts[47]
Enabling operating environment • Harmonize/improve policies, strategies, institutional mandates and supportive legislation of involved sector • Develop standards, guidelines and tools for sustainable forest management and Agroforestry • Develop, revise and implement District Land Use Planning and District Forest Management Plan • Support development of efficient wood and agroforestry product value chains *Support to user groups* • Support the establishment of small forest holder cooperatives • Support participatory management of road/river/ lake side plantations and protected areas • Identify specific opportunities for women and other vulnerable groups and target support on these *Fiscal measures* • Lease public forest to investors • Develop microfinance facility • Provide grants in return for meeting high defined standards and guidelines	• Enabling institutional environment • Standards and guidelines available for land use planning and full range of forestry and agroforestry interventions • Equitable and inclusive participatory management increases in wide range of models • Specific opportunities for women and other vulnerable groups built and delivering improved engagement and benefits • Lease system in place for public forest rehabilitation and management • Grant system covers needs of full range of actors and groups	• Improved sustainable management of climate resilient forest landscapes • Forest productivity increased and risks from climate change, pests and diseases reduced • Greater returns to owners from planted trees and forests • Increased service values and revenue from non-forest products delivered • Rehabilitation, restoration, agroforestry, plantations at all scales and patterns conducted to high standards • Natural forests and woodlands increase in quality and extent due to reduced pressures and active management and protection • Increased engagement and participation of groups, communities and private investor in tree planting and forestry sector activities generally • Actors and stakeholders more empowered by fully inclusive consultation and access to resources and advice • Women and other vulnerable groups fully engaged in decision making and with improved benefits	• **GHG emissions** from land uses **reduced** • **Carbon storage increased** in trees and forests • P**overty reduction through increased returns, improved value chains and employment** • High quality forest cover and **biodiversity increased** • **Trees and forests more resilient** to climate change • **Forests and forest landscapes managed sustainably, drivers of deforestation and forest degradation controlled** • **Institutional and operating framework supportive and enabling** • **Improved contribution to GDP** from forests and trees • **Soil and water conservation values increased**, fewer land slide and flooding events
Technical support • Improve and diversify seed and propagative materials • Research programme to adapt species to climate change and local conditions, for full range of users *Extension support* • Raise awareness and skills of forest owners • Build capacity of extension personnel and technicians • Support agroforestry through Farmer Field Schools *Wood use efficiency* • Promote alternative source of cooking energy, support improved cook stove dissemination and improved charcoal making	• Diversified tree species and propagative material adapted to climate change and local condition available • Improved wood using efficiency through new products and technologies • More effective implementation of tree and forestry related activities on the ground • Enhanced extension services disseminating sound practices • Increased investment by private sector in more efficient value chain of wood and agroforestry products		

[47] Bold text used to emphasise coherence with FIP Logic Model

Table 19 Key Assumptions in Theory of Change

<table>
<tr>
<td rowspan="2">Key Assumptions from Activities to Outputs
• Land use planning is inclusive and effective, proposed guidelines are validated and introduced
• Intensified agriculture delivers higher productivity
• Cross-institutional collaboration and cooperation is fully effective
• Steering committee membership is fully inclusive
• Those farming unsustainably can be re-accommodated on suitable land and/or provided with adequate employment opportunities
• Intervention models are available for all sites and users, including women and other marginalised groups
• Private sector is willing and able to engage in more efficient and equitable value chains
• Seed and plant supplies always meet high quality standards
• Capacity and skills building is effectively delivered
• M&E system provides accurate quantitative and qualitative data on physical, social, environmental and economic factors which is fully utilised to refine and manage interventions
• Users are willing and able to take up improved wood conversion and use technologies including alternative energy sources</td>
<td>Key Assumptions from Outputs to Outcomes
• Operating environment continues to be enabling and supportive
• Improved seed, high quality plants and sound technical intervention packages made fully available
• Grant system encourages adequate numbers of participants
• Standards and guidelines are followed by all actors
• Improved extension services available meet the demand for them
• Protection from illegal and natural damage is effective
• Interventions deliver predicted enhanced service and production values</td>
</tr>
<tr>
<td>Key Assumptions from Outcomes to Impact
• Potential actors continue to follow standards and guidelines
• Intervention models are sufficiently robust to meet predicted climate changes
• At end of FIP support period, activities will continue to be supported by Government of Rwanda with further donor support if needed</td>
</tr>
</table>

Table 20 Problem Analysis - Linkages and Summary

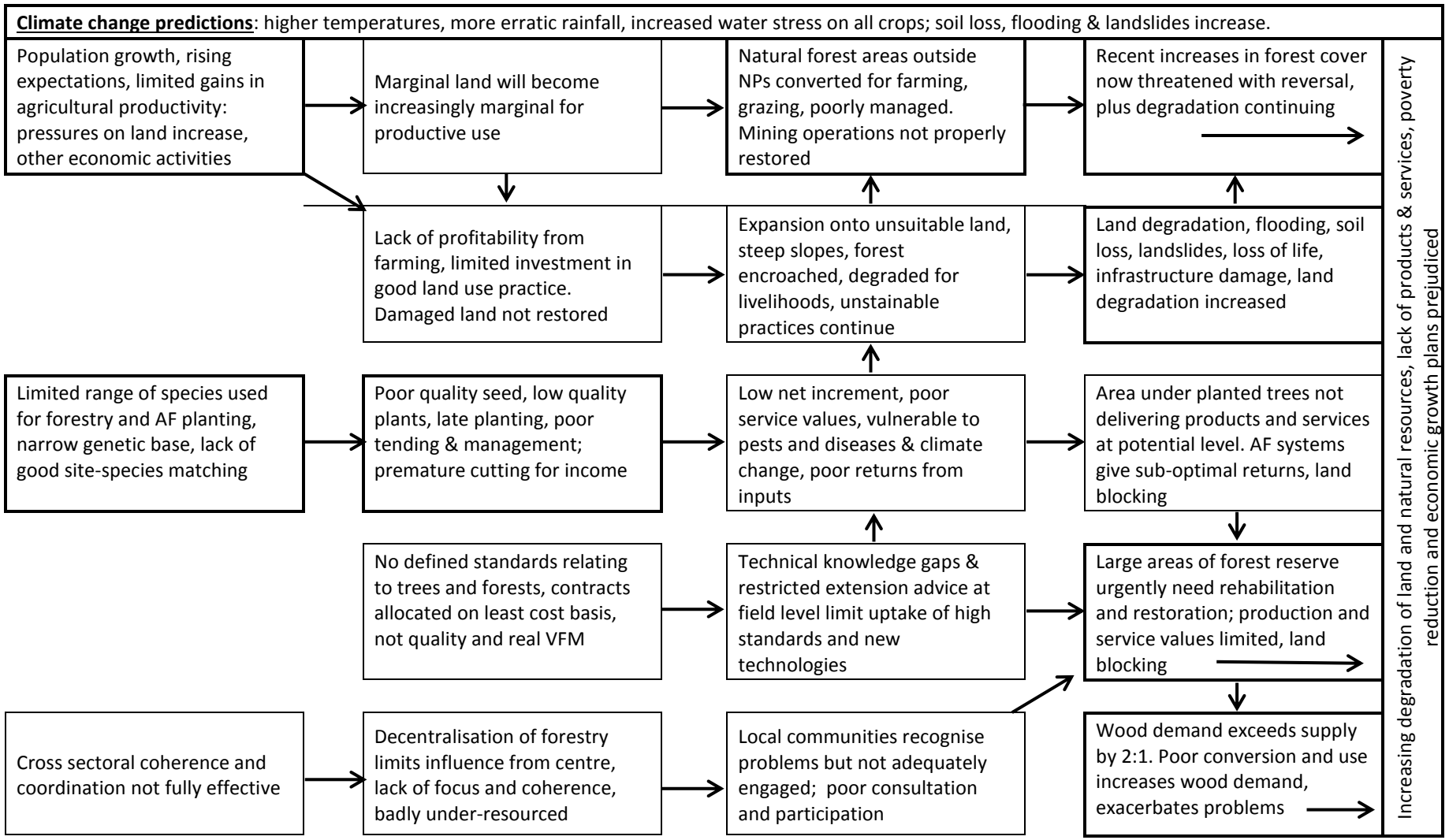
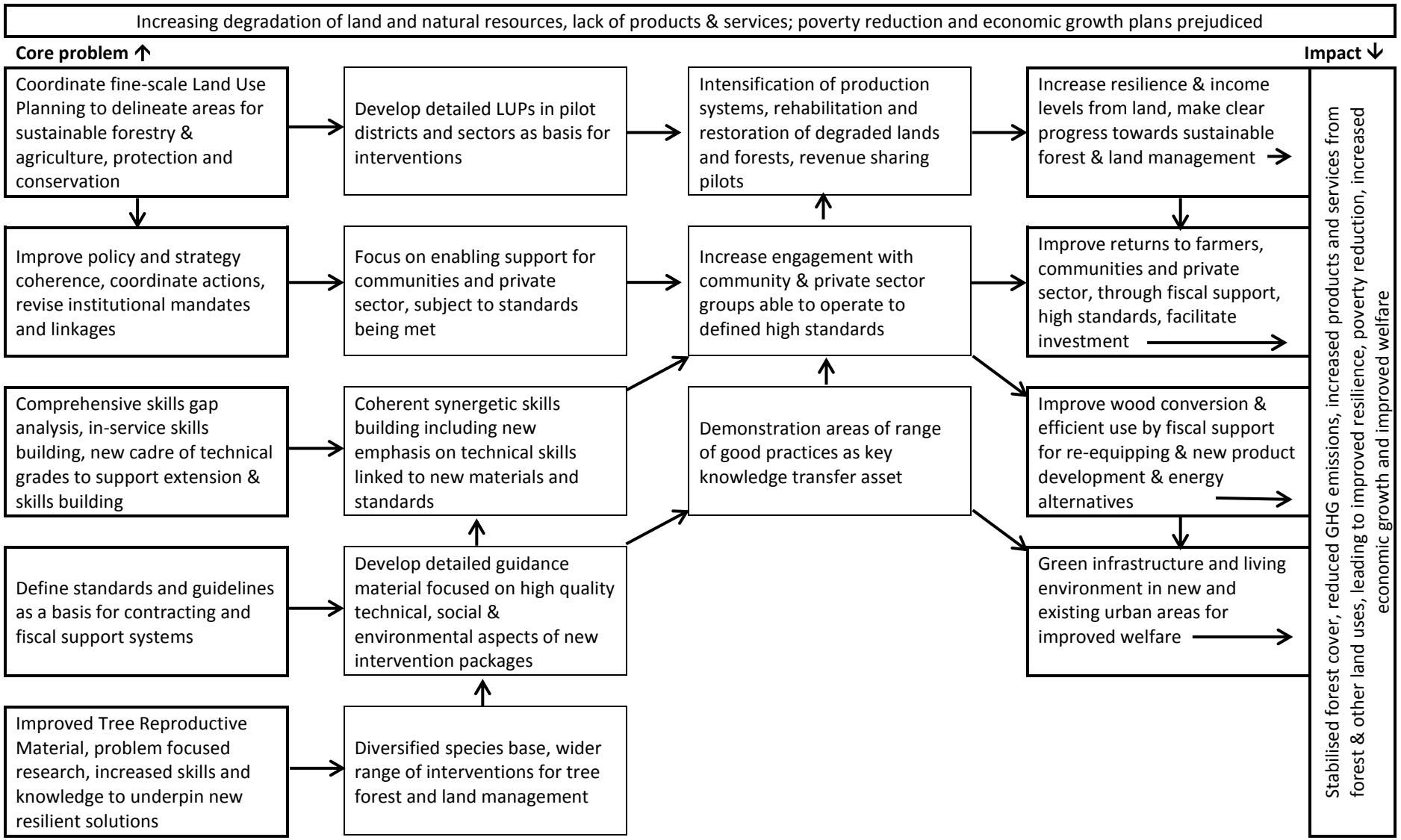


Table 21 Proposed Solutions – Linkages and Impacts



7. IMPLEMENTATION POTENTIAL AND RISK ASSESSMENT

7.1 Overarching Goal and Approach

163. The overarching goal of the proposed FIP interventions is *Sustainable management of forests and forest landscapes to address the drivers of deforestation and forest degradation*. In essence this requires that all land uses are selected to be optimal in terms of their contribution to production and service delivery, within the capacity of implementers and resilient to predicted climate changes.

164. Land ownership in Rwanda is characterised by small individual holdings on which owners undertake agriculture and tree planting; public lands occupy a relatively small proportion. The proposed interventions on the land would engage large numbers of rural dwellers, individually and in groups and/or communities with government playing an enabling and supportive role.

Table 22 Risk Reduction Measures

Aspect	Risk Reduction Measures
Policies and strategies	Rwanda has a wide-ranging suite of relevant policies and strategies that are coherent and largely consistent. As the proposed actions are rolled out, there will be need for review and fine-tuning to ensure that inconsistencies are minimised and opportunities for synergy fully exploited. Resources are earmarked to support this.
Delivery mechanisms	The capacity of central and local government is limited in respect of its ability to undertake field based activities and most land is privately owned. The approach proposed is therefore to facilitate and support the engagement of large numbers of people.
Facilitation and support	
• Knowledge and information	The current range of technical options available for forestry and agroforestry is rather limited and not always available to actors at all levels. A diversified range of new species and varieties is required to provide growers with resilience to climate change and the best returns to investment of their labour and other resources. Research will be conducted on new, more resilient, technical options to provide much wider choice that facilitates high quality site-user-species matching and actions to ensure that the necessary materials are widely available at the correct time.
• Skills building	Training modules are proposed to provide actors with the necessary skills and expertise to use the wider range of options in the most effective way. Those receiving grants would be given free training. This will be complemented by demonstrations and other opportunities for knowledge promotion. In parallel, training for public service personnel in the new approaches is also provided for so that the whole suite of actors and the public sector have coherent and complementary expertise. At the same time, a much increased, local level extension service is envisaged to provide improved access to guidance and problem solving. This would be additional to current provisions.
• Fiscal support	Grants are proposed to support all forestry and agroforestry interventions, including for rehabilitation of public forests through leases. Grants would be results-based and be subject to meeting strict, pre-defined operational standards. For value chain investment on wood and other products, loans based around the lease-purchase concept would be made available with beneficiaries committing to high standards of efficiency and equity. Where individual farmers are engaged, particularly with agroforestry and forest products, and also with tasks such as tree seed handling and small nurseries, micro-credit schemes will be developed within the wider fiscal support framework.

Aspect	Risk Reduction Measures
• Standards and guidelines	In light of Rwanda's limited and heavily used land area, it is important that all actors have clarity on the standards that are achievable and necessary for the activities that they undertake. Such standards will provide a clear description of what is required and guidelines will assist through providing clear information on how to achieve this. Standards are also required for products and technical services that actors will deliver and/or buy in, such as tree seed and nursery stock. Grant recipients will be required to use registered suppliers who can and do deliver to defined standards.
• Safeguards	All proposed activities would be conducted in a way that ensures full compliance with both FIP and nationally defined social and environmental safeguards.
• Institutional structures	Current institutional structures need to be responsive and dynamic so that the full benefits of improved practices can be secured. Support is earmarked to assist in this process to ensure that collaboration and coordination are always as good as possible. The wide range of actors to be engaged will undertake activities that are the responsibility of a significant number of government agencies at national and sub-national levels. It is incumbent on these agencies to operate in the way that best serves the needs of these actors, while also ensuring that legislative and regulatory requirements are fully met.
• Cross-sectoral coordination	As most of the ultimate beneficiaries of the FIP proposals will be involved in agriculture, agroforestry and forestry at various scales, the FIP proposals have been developed to coordinate with activities proposed under PPCR and for the intensification of agriculture more generally. Provision has been made to support fine-scale land use planning in all pilot areas.

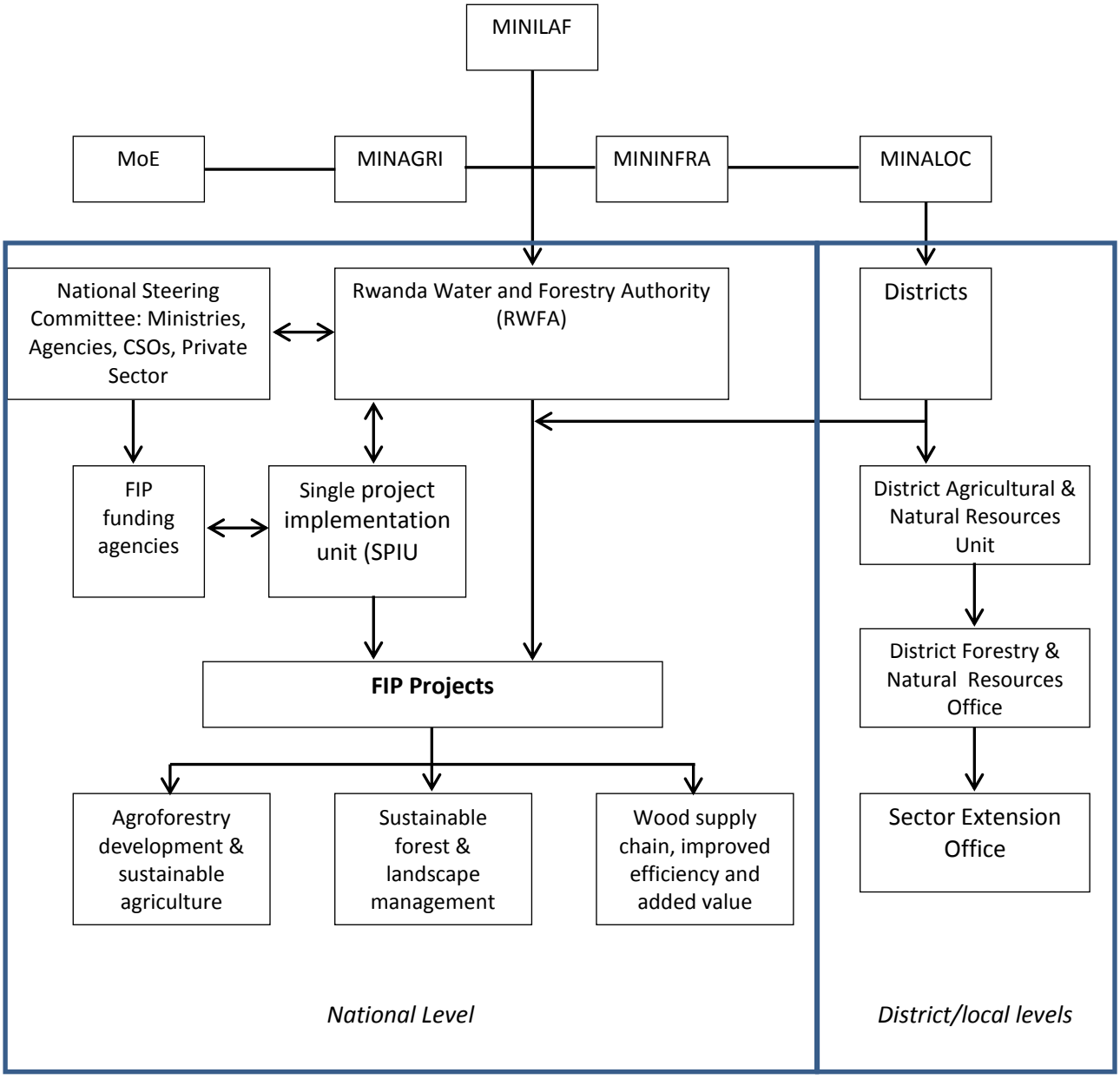
7.2 Implementation arrangements

7.2.1 FIP organisation structure

165. The institutional structure for delivery of Forest Investment Program support is based on existing institutions and processes. During implementation, the FIP Investment Plan will be embedded in the organisation structure outlined in Figure 8 below. The overall supervision of the FIP falls under the Ministry of Lands and Forestry (MINILAF). However, during FIP implementation MINILAF will have to collaborate closely with MINAGRI, MoE, MININFRA and MINALOC.

166. The FIP program will be under direct supervision of a FIP National Steering Committee and the Rwanda Water and Forestry Authority (RWFA) at central level and district authorities at local level. However, fiduciary and procurement issues will be handled by the SPIU in RWFA.

Figure 8 FIP Organisation structure



167. The steering committee will be composed of representatives of major partners including Ministries and their agencies such as RDB, REMA, RAB, NISR, *etc*.; NGOs, Private sector such as tea factories, forest firms, and communities (*e.g*. forest cooperatives and associations).

168. While at Central level the Forestry Department and its four units are the major focal points of the FIP projects, at District level the main focal points will be the Agricultural and Natural Resources unit through its Forestry and Natural Resources and Forestry Extension office.

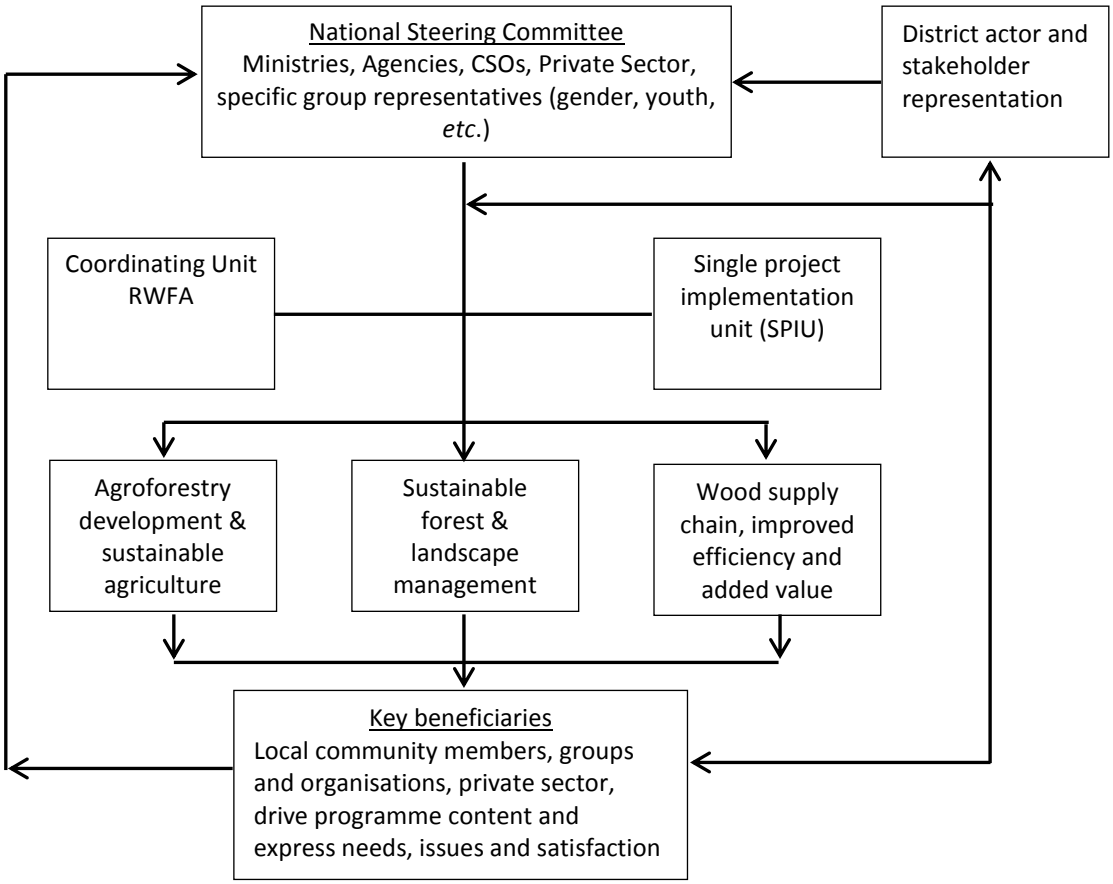
7.2.2 Implementation arrangements

169. The implementation of the three FIP projects will be under the supervision of the FIP Steering Committee and the Rwanda Water and Forestry Authority at central level and district authorities at local level (Figure 9 and Table 23 below).

170. The fiduciary and procurement function will be implemented by SPIU in accordance with national procedures and guidelines.

171. The implementation of activities will be undertaken by different units in the Forestry Department at Central level and the Agricultural and Natural Resource Unit, Forestry and Natural Resources and Forestry Extension Offices at district level. At ground level, activities will be carried out by communities, NGOs, cooperatives and private sector operators, with much increased support from trained forestry extension personnel.

Figure 9 Implementation structure for three FIP project concepts



172. In addition to learning from the dispute resolution experience of FIP DGM (see Annex 3), it is proposed that conflict resolution commissions, composed of local members from project intervention areas are introduced within the FIP steering committee. These commissions would be responsible for receiving and proposing solutions to challenges and issues arising during implementation of the FIP programme, such as those related to land use options for farmers. It is

expected that vice mayors, civil society groups and stakeholder representatives in the Steering Committees will act as channels to bring issues forward; these issues should also come to the Steering Committees through RWFA from district forestry personnel. Noting that the proposed structure of the Steering Committee has many government representatives, it is expected that strong efforts will be made to ensure a good gender balance among these representatives.

Table 23 Composition of the FIP Steering Committee by Concept Note

Ministries, agencies and others	CN 1	CN 2	CN 3
MINILAF	✓	✓	✓
MINAGRI	✓	✓	
MoE	✓	✓	✓
MINALOC	✓	✓	✓
MIGEPROF	✓	✓	✓
MININFRA			✓
MINECOFIN	✓	✓	✓
RWFA (Rwanda Water and Forestry Authority)	✓	✓	✓
REMA (Rwanda Environment Authority)	✓	✓	✓
RDB (Rwanda Development Board)		✓	✓
RAB (Rwanda Agricultural Board)	✓	✓	
NISR (National Institute of Statistics of Rwanda)	✓	✓	✓
IUCN	✓	✓	
ICRAF	✓	✓	
FONERWA	✓	✓	✓
V/Mayor FED (Districts with FIP projects)	✓	✓	✓
Director of Agricultural and Natural Resources (Districts with FIP projects)	✓	✓	✓
NFC (New Forest Company)			✓
NGOs involved in Investment in Forestry (Districts with FIP projects)	✓	✓	✓
Tea factory representative		✓	✓
ADARWA (Timber business cooperative of Kigali)			✓
Representative of Private Sector (Districts with FIP projects)	✓	✓	✓
Representative of women Investors/ Entrepreneurs in Forestry (Districts with FIP projects)	✓	✓	✓
Representatives of Youth Entrepreneurs/Investors in Forestry (Districts with FIP projects)	✓	✓	✓
Representative of Cooperatives involved in Forestry activities (Districts with FIP projects)[48]	✓	✓	✓

[48] Organisations focused on women, youth and other disadvantaged groups will be brought in to the steering committee as appropriate, temporarily or permanently to ensure the needs of these groups are fully considered and included in delivery

7.3 Completion of national REDD+ preparations

173. In terms of the formal documentation of Rwanda's national plans for REDD+, details of an Action Plan are given in Annex 4. This shows the proposed activities, their timing together with indicators, means and source of verification and the expected results.

8. FINANCING PLAN AND INSTRUMENTS

Table 24 FIP Investment Plan, Outline Financing Proposal Elements in US$

Land use approach → Type of intervention ↓	Notes	Lump Sum	Rehabilitation of public forest plantations	Restoration of degraded land incl. natural forests	Agroforestry	Individual, group & community woodlots	Urban forestry	Total
Target established over 6 years (ha)	1		30,000	16,000	80,000	40,000	2,000	168,000
Field activities, mainly through grants support in return for achievement of defined standards	2		15,000,000	8,000,000	20,000,000	10,000,000	1,000,000	54,000,000
Grant per ha			500	500	250	250	500	
Support to detailed land use planning in pilot districts and sectors	3	3,400,000						3,400,000
Improve tree seed & other propagative material	4	6,000,000						6,000,000
Forestry research strategy and actions, *including* Diversification of species for forestry & agroforestry	5	9,000,000						9,000,000
Skills building for implementers and demonstration plots	6							0
New technical assistant cadre	7	2,000,000						2,000,000
Standards and Guidelines	8	1,000,000						1,000,000
Fiscal Support Systems	9	1,000,000						1,000,000
Gap analysis of policies, strategies & legislation, review and revision	10	500,000						500,000
Review of institutional structures & processes, restructuring as needed	11	1,000,000						1,000,000
Coherent training at all levels above technical assistant in relevant agencies	12	2,100,000						2,100,000
Loan fund for improved technology	13	10,000,000						10,000,000
External technical assistance	14	5,000,000						5,000,000
Total								95,000,000
National REDD+ strategy and REL	15							TBC
Overall total								**95,000,000**

Notes
1 - These are based on a 6 year field programme with an initial year taken up with planning, securing improved seed and planting material; total time frame 7 years. The overall area targets are ambitious, especially noting that they will be dispersed over quite a wide area, but should be feasible. Quality not just area, must be the first priority
2 -The unit costs assume a grant scheme will be in place. For rehabilitation, the average cost per ha is based on grant of US$300, administration - including the critical inspections - of US$ 150 and US$ 50 for skills training of grantees, total US$ 500/ha. The same unit cost is assumed for restoration and urban forestry. Lower grant costs of US$ 250/ha assumed for agroforestry and woodlots
3 - Based on US$ 20 per ha of supported planting
4 - This is an initial estimate. It is based on the cost, some years ago, of US$ 2.5 million for the Uganda Tree Seed Centre, which was not thereafter a success, so that cost has been doubled plus 20% for cost inflation since Uganda TSC was supported
5 - It is assumed that a distinct forestry research section will be established and will undertake crucial work on site-species matching, species and provenance trails, tree improvement, silviculture and management of plantations, natural woodlands, woodlots, some agroforestry, soils and nutrition, pests and diseases, growth and yield monitoring
6 - The costs for these are included in the costs for the various different planting and tree management interventions proposed
7 - This is based on 50 people trained in years 1 and 2 and 100 in each of years 3 to 6. Total number trained would be 500 at a cost per trainee of US$ 4,000, this cost is based on the cost per trainee on this type of programme at other colleges in the region
8 - There are already some technical guidelines but a more extensive suite is required to ensure high standards are clear to implementers and can have a legal basis. Most of the work should be done within RWFA and other national institutions but some external assistance may be required
9 - Most of the work can be done by RWFA and other national institutions but some external assistance may be required, especially in the early years
10 - Most of the work can be done by RWFA and other national institutions but some external assistance may be required, especially in the early years
11 - Most of the work can be done by RWFA and other national institutions but external assistance may be required, especially in the early years
12 - This is essential to support the changes and improvements to field practices being proposed. Personnel will need to be able to attend specialised skills building opportunities around the region and to undertake study tours and similar events to give them enhanced knowledge and awareness of how improved practices look and what is necessary to achieve and sustain them
13 – To provide a revolving loan fund to support investment in efficiency along the value chains from forests and agroforestry
14 – For international technical assistance
15 – The national REDD+ strategy and REL remain to be completed

Table 25 Indicative Cost Elements of Proposed Programmes by Component

Programme Components ↓	Rehabilitation	Restoration	Agroforestry	Wood Lots	Urban forestry	Land Use Planning	Seed	Research	Technical Assistant	Standards & Guidelines	Fiscal support	Policies, strategies and Institutions	Loan fund	External TA	Total US$ million
1. Development of agroforestry and sustainable agriculture															**61.0**
1 Agroforestry for landscape stabilisation	4	7	15			3	5	4							38.0
2 Value chain for AF products	3		2					1					3		9.0
3 Capacity building			3	4					1.5	0.7	0.7	2.1		2	14.0
2. Sustainable forest and landscape management															**21.5**
1 Support land use planning						0.4									0.4
2 Improve tree planting material		1					1	2	0.5	0.3	0.3	1		1	7.1
3 Support implementation of DFMPs	5			6	1										12.0
4 Develop and support PES								1					1		2.0
3. Wood supply chain, improved efficiency and added value															**12.5**
1 Increase efficiency in wood use into timber and charcoal	3							1							4.0
2 Support wood value-chain development and use of new wood based products												0.5	1		1.5
3 Support efficiency in biomass energy use													2.5	1	3.5
4 Support use of alternative sources													2.5	1	3.5
Total	**15.0**	**8.0**	**20.0**	**10.0**	**1.0**	**3.4**	**6.0**	**9.0**	**2.0**	**1.0**	**1.0**	**3.6**	**10.0**	**5.0**	**95.0**

Reference

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Annex 1 Project Concept Note Outlines

Project Concept Note 1 - Development of Agroforestry and Sustainable Agriculture

MDB and lead Government Agency

The African Development Bank (AfDB) will provide the bulk of the funds to implement the project. Other funds may be sought from CIF, GCF, Bilateral development partners and the Government of Rwanda (Table A). The lead government agencies that will play major role in the implementation of the project will include the Ministry of Lands and Forestry (MINILAF), Ministry of Agriculture and Animal Resources (MINAGRI), Ministry of Environment (MoE), Ministry of Local Government (MINALOC), Rwanda Water and Forestry Authority (RWFA) and Rwanda Agriculture Board (RAB).

Table A- MDB and lead Government Agency (-ies)

MDB	Other finance	Lead Government Agencies
AfDB	CIF, GCF, Bilaterals, GoR	MINILAF, MINAGRI, MoE, MINALOC, RWFA, RAB

Problem statement

Rwanda has one the highest population densities in the world with an average of 490 people per km^2 and yet more than 80% of the population depend on agriculture as their main source of livelihood. Population pressure coupled with farming land scarcity has led to unsustainable farming practices. No fallowing of land is possible and therefore most farms are degraded due to repeated cultivation. Agroforestry systems can address both land degradation and poverty issues by improving soil fertility, reducing soil erosion, strengthening food security, sequestering carbon, improving resilience to climate change and thus warranting sustainable agriculture.

Rwanda's agriculture land is exposed to severe soil erosion due to the above mentioned reasons and steep topography where15 million metric tons per year is washed away. Recent statistics have shown stagnation if not decline in yields of major crops in Rwanda. Climate-smart agriculture (CSA) is one of the approaches that guides actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. CSA aims for three main objectives: sustainably increasing agricultural productivity and incomes; adapting and building resilience to climate change; and reducing and/or removing greenhouse gas emissions. Therefore, Agroforestry is the pillar Climate Smart Agriculture as it addresses land degradation, soil fertility, food security and climate change.

The opportunity assessment for forest landscape restoration in Rwanda by IUCN&WRI[49] revealed that agroforestry on steep and flat slopes offered the greatest opportunity for landscape restoration (1.1 Million ha) in the country. Intensive practice of agroforestry on agricultural land would improve crop production, reduce erosion and reduce pressure on existing natural and planted forests to supply fuel wood and other tree products. Farmers practicing agroforestry will receive an enhanced benefit stream from tree products and improved soil fertility and stability. Developed agroforestry systems in the course of the project will also provide wider downstream benefits through reduced soil loss and siltation, regularised water flows and improved water quality.

[49] IUCN & WRI (2014). Forest Landscape Restoration Opportunity Assessment for Rwanda

Proposed transformational impact and co-benefits

The project aims to develop agroforestry systems in support of sustainable agriculture and environment protection. The project will provide employment to local communities, cooperatives and the private sector. It is anticipated that this project will have a considerable impact on poverty alleviation through increased crops and livestock (fodder trees) production for small holder farmers. . Moreover, through value chain development of agroforestry products farmers' income and livelihood will be enhanced. Furthermore, substantial costs will be avoided from reduced soil erosion, landslides and flooding as well as better regulated water supplies of higher quality.

In addition, the implementation of agroforestry technologies will further curtail the pressure on forests (both natural and man-made forests) for fuelwood and other forest products. In consequence, the project will not only reduce deforestation and forest degradation but also forest carbon stock will be enhanced. Therefore, agroforestry trees planting will also in due course sequester around 1.8 million tonnes of CO eq. annually at an average of 9 tonnes/ha/year[50] for the target total area of 200,000 ha.

Implementation readiness

The Government of Rwanda has established laudable legislation, policy and strategies relevant for effective implementation of this project. Some of these laws include the National Forest Policy; the Forest Sector Strategic Plan (2017 – 2021); the Agroforestry Strategy (2017 – 2027), Strategic Plan for Agricultural Transformation (PSTA 4), Seven year Government programme (2017-2024), National Strategy for Transformation and Prosperity (NSTP) Green Growth and Climate Resilience Strategy (GGCRS); Intended Nationally Determined Contribution for Rwanda and Rwanda Readiness Preparation Proposal for REDD+.

The Rwanda Water and Forestry Authority (RWAF) which will be directly supervising the project implementation has strong experience in implementing multi-donor and multi sectorial supported programs funded by The Kingdom of Netherlands, The Kingdom of Belgium, German Government, UNFCCC, AfDB, *etc*. At local level, District administrations have also good experience in managing project activities.

Potential national and international partners including their REDD+ financial

The funds to implement this project will be sought from the Climate Investment Fund (CIF), the African Development Bank (AfDB) will be the lead MDB in fund disbursement. Additional funding may sought from GCF, Bilateral development partners, FONERWA and the Government of Rwanda. The lead government agencies during the implementation of the project is Rwanda Water and Forestry Authority with support of other partners such MINAGRI, MoE, MINALOC, RAB, ICRAF and IUCN (Table B).

Table B - Project Partners

MDB	Sources of funds	Lead Government Agency	Key partners
AfDB	CIF, GCF, Bilateral cooperation (Germany, Belgium, Netherlands, etc.),FONERWA and GoR	MINILAF	Districts; ICRAF; IUCN; NAEB; FAO; Farmers' cooperatives; University of Rwanda

[50] Based on figures prepared for current Rwanda Rural Green Economy and Climate Resilient Development Programme proposal to GCF

Rationale for FIP financing

The main objective of the "*Development of agroforestry and sustainable agriculture project*" is the restoration of landscapes with agroforestry systems to support sustainable agriculture. The specific objective is to develop agroforestry for sustainable agriculture on 200,000 ha. The project has three components which are in line with FIP objectives:

- **Component 1**: Agroforestry for landscape stabilisation
- **Component 2**: Value chain development for Agroforestry products
- **Component 3**: Capacity building

The project activities were confirmed during a stakeholder consultation workshop (Table C).

Table C: Project activities description as proposed during stakeholder consultation workshop

Activities	Geographic location	Collaboration and coherence with other programmes/initiatives	Cross cutting activities
Component 1 - Agroforestry for landscape stabilisation			
Jointly coordinated AF interventions with focus on degraded land to improve services and production	Eastern and Northern provinces	Integrated water resources management, Crop Intensification program, Hillside irrigation programme	Gender and Youth mainstreaming, M&E, Participatory planning
Integration of AF trees species in coffee and tea plantations	Western province	Tea and coffee plantation expansion programmes	Gender and Youth mainstreaming, M&E, Participatory planning
Support diversification of tree species in AF systems	Eastern, Northern and Western provinces	Crop Intensification program	Research, seeds importation
Establish incentive mechanisms for adoption of AF practices by farmers	Eastern, Northern and Western provinces	PES, Grant, loan, revenue sharing	Linkages with financial institutions
Component 2 - - Value chain development for AF products			
Strengthening research in AF value chain seeds to end-products	Countrywide	Research development programmes	Regional knowledge exchanges
Component 3 – Capacity building			
Capacity building and technology transfer	Countrywide	Farmer Field School and Internships	Gender and Youth mainstreaming

Safeguards

The design and implementation phases of the project are based on an extensive consultation process with all major stakeholders in the country which took place in the framework of preparing the FIP. The environmental and social safeguards will be monitored at all stages of the project cycle, including close attention to land tenure and changes in this. The main objective is to ensure that the activities funded are consistent with national policies and guidelines as well as with MDB's environmental and social safeguard policies in line with UNFCCC decisions related to REDD+. The safeguard measures will be integrated starting from the project's design phase to prevent, reduce and mitigate the potential harm to environment and people.

For monitoring and evaluation of project achievements and outcomes, focus groups balanced by gender and socio-economic status will be established in representative locations at the outset and members asked to provide baseline information on benefits and on more subjective issues such as engagement and empowerment. Thereafter, focus group members will be asked to keep a diary and to provide regular interviews, for which some payment will be made. This information will be complemented by periodic balanced samples to confirm the findings from the focus groups and the combined information will be fed back for any necessary action or adjustment to processes and input levels.

Financing plan

The proposed funding plan follows (Table D):

Table D - Funding plan

Project component	Funding (US$ million)	
	MDB/CIF/GCF*	GoR
Component 1: Agroforestry for landscape stabilisation	32.9	3.3
Component 2: Value chain development for AF products	11.0	1.4
Component 3: Capacity building	11.0	1.4
Total	54.9	6.1

* Expected external financing: FIP US$ 15 million; AfDB US$ 15 million; GCF 24.9 million.
Additional co-financing and the specific contribution from each donor will be confirmed during project preparation. The contribution of the Government of Rwanda is set at 10% of the external project funding.

Project preparation timetable

Soon after approval of the Forest Investment Plan, the following project preparation steps are anticipated (Table E):

Table E - Project Preparation timeline

Stage	Steps	Deliverables	Date
Preparation	Joint Preparation mission	Statement of Mission Objectives (SMO), TOR	January 2018
Appraisal	Project Approval	Draft Project document	March 2018
	Appraisal mission	Fiduciary arrangements, Implementation manual	May 2018
Negotiations	- Preparation of negotiation package - Conducting negotiations	- Negotiations package - Synthesis of negotiations	July 2018 August 2018
Approval	Submission to the AfDB Board	Final PAD with all Annexes and clearances	October 2018

Request for project preparation grant if required

A sum of US$ 300,000 will be requested for the full appraisal given the complexity and nationwide spread of the intended pilot activities.

Project Concept Note 2 - Sustainable Forest and Landscape Management

MDB and lead Government Agency

The MDB, other potential finances and lead government agencies are shown in Table A below.

Table A- MDB and lead Government Agency (-ies)

MDB	Other finance	Lead Government Agencies
WB	CIF, GCF, Bilaterals, GoR	MINILAF, MINAGRI, MoE, MINALOC, RWFA, RDB

Problem statement

The National forest inventory of 2015 has reported low stocking in public and private forest plantations. The low stocking has been associated with poor management, planting trees of inferior genetic material, poor site matching of species, and a general lack of awareness and implementation of appropriate silvicultural operations. It is however noted that in some well conserved plantations and natural forests, the stocking can increase five times the average recorded in the NFI. Natural forests are neglected by the forest adjacent communities, who view them as a government resource without direct benefits for them.

Poor stocking of commercial forests compromises the roles of the trees in landscape restoration, results to uneconomical use of the forest land and contributes to the large deficit that currently exists between supply and demand for wood products. The growing human population requires a commensurate increase in wood products and calls for optimal productivity of the existing commercial forests. Similarly, creating value through Payment for Ecosystem Services enhances the conservation of the natural forests, which contributes to their sustainability especially their environmental and biological roles.

Proposed transformational impact and co-benefits

The implementation of the project will lead to improved productivity and resilience to Climate Change and to pests of planted trees, reduced gap in supply and demand for wood, enhanced conservation of natural forests and increased service values of soil and water conservation. The ultimate outcomes for such project results would then be (i) Increased job opportunities from diversified employment and better returns; (ii) Revenues increased and costs of damage from floods and landslides reduced; (iii) Enhanced stakeholder participation in forest management and forest conservation; (iv) Improved livelihood and lifestyles and (v) Reduced GHG emission, increased carbon stock and improved biodiversity in targeted forest ecosystems (Figure A).

Transformational change /impact

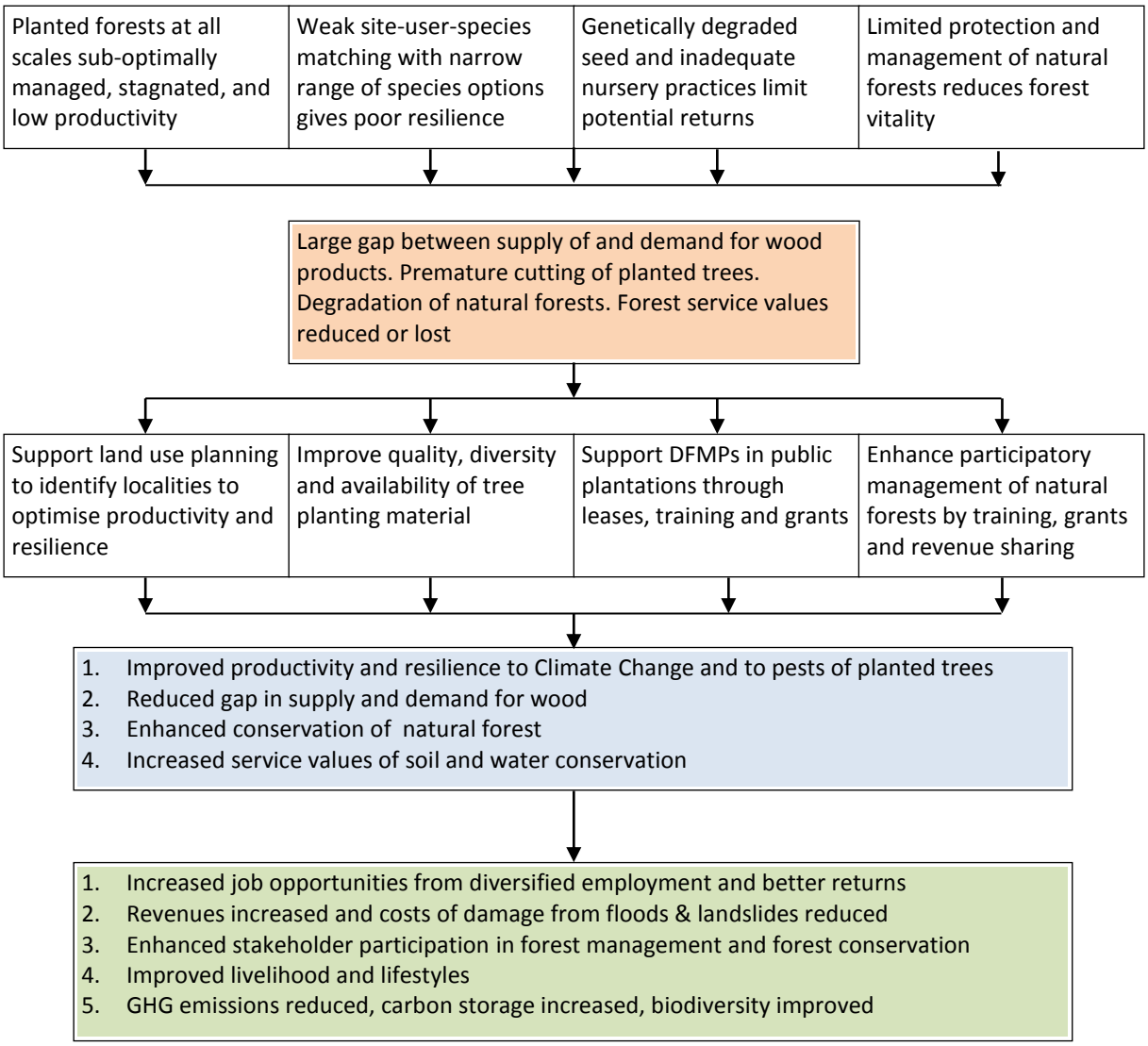

Figure A: Project transformational impact and co-benefits

Implementation readiness

The Government of Rwanda has established laudable legislation, policy and strategies relevant for effective implementation of this project. Some of these laws include the National Forest Policy; the Forest Sector Strategic Plan (2017 – 2021); the Agroforestry Strategy (2017 – 2027), Strategic Plan for Agricultural Transformation (PSTA 4), Seven year Government programme (2017-2024), National Strategy for Transformation and Prosperity (NSTP) Green Growth and Climate Resilience Strategy (GGCRS); Intended Nationally Determined Contribution for Rwanda and Rwanda Readiness Preparation Proposal for REDD+.

The Rwanda Water and Forestry Authority (RWFA) which will be directly supervising the project implementation has strong experience in implementing multi-donor and multi sectorial supported programs funded by The Kingdom of Netherlands, The Kingdom of Belgium, German Government, UNFCCC, AfDB, *etc*. At local level, District administrations have also good experience in managing project activities.

Potential national and international partners including their REDD+ financial

The funds to implement this project will be sought from the Climate Investment Fund (CIF), the African Development Bank (AfDB) will be the lead MDB in fund disbursement. Additional funding may be sought from GCF, Bilateral development partners, FONERWA and the Government of Rwanda. The lead government agency during the implementation of the project is Rwanda Water and Forestry Authority with support of other partners such MoE, MINAGRI, MINALOC, RDB and IUCN (Table B).

Table B - Project Partners

MDB	Sources of funds	Lead Government Agency	Key partners
AfDB	CIF, GCF, Bilateral cooperation (Germany, Belgium, Netherlands, etc.),FONERWA and GoR	MINILAF/RWFA	Districts; IUCN; FAO; RDB; Farmers' cooperatives; University of Rwanda

Rationale for FIP financing

Though the government has a clear strategy on forest conservation, national development and poverty reduction, Rwanda is one of the least developed countries (LDCs) of the world and requires support to implement such proposed strategies. Its high vulnerability to climate change requires quick action that will enable its rapidly growing population adapt to climate change through efficient use of forest resources and diversification of sources of income from tree resources.

The project targets enhance productivity and the sustainable management of 20,000 ha of public plantations and major blocks of natural forests in Western and Southern province. The main objective is related to Rwanda government development objectives – to restore landscapes through sustainable management of forests (NFP 2017). The specific FIP objective of the project is to conserve and enhance productivity of forested landscapes for national and rural development.

The project has four components:

- **Component 1**: Support land use planning
- **Component 2**: Improve tree planting material
- **Component 3**: Support implementation of District Forest Management Plans
- **Component 4:** Develop and support Payment for Ecosystem Services

Project activities in its four components and proposed geographic location were proposed during a stakeholder consultation workshop (Table C).

Table C: Project activities description as proposed during stakeholder consultation workshop

Activities	Geographic location	Collaboration and coherence with other programmes/ initiatives
Component 1 - Support land use planning		
Support implementation of land use policies specifically regarding forests	Countrywide	• Complementarity with SPCR • Forest Sector Strategic Plan (2017-2021) • In line with GGCRS
Support finalisation and publication of forest cadastral information		
Support resolution of conflicts related to forest land		
Support finalisation of guidelines regarding conservation of public forests along rivers, lakes, hilltops, slopes and roadsides		
Component 2 - Improve tree planting material		
Education, research and awareness on the use of superior planting material	Countrywide	• Forest Sector Strategic Plan (2017-2021) • National Forestry Policy (2017)
Research on appropriate species for different sites, all agro-bioclimatic zones, the full range of users and of tree utilisation aims		
Component 3 – Support implementation of District Forest Management Plans		
Support implementation of District Forest Management Plans, where these exist and development of those not yet completed	Countrywide	• Forest Law (2013) • Forest Sector Strategic Plan (2017-2021) • National Forestry Policy (2017)
Support public-private participation, including local communities and groups in implementing forest management plans		
Undertake research and monitoring to provide information on forest productivity for enhancing management		
Develop standards and guidelines covering all aspects of tree and forest management to underpin nationwide high standards and ensure increased productivity		
Develop and deliver a range of appropriate grant mechanisms to enhance participation of individuals, groups – especially currently disadvantaged groups - and local communities		
Component 4: Develop and support Payment for Ecosystem Services		
Research on and valuation of ecosystem services	Communities around protected forests	• Forest Sector Strategic Plan (2017-2021); • National Forestry Policy (2017) • Tourism Revenue Sharing schemes • PAs Management Plans
Support engagement with institutions benefiting from forest services (tea factories, tour companies, wildlife conservation bodies, *etc*.) to provide benefits to communities who assist in the conservation of such forests		
Support finalisation and implementation of PES strategies and activities		

Safeguards

The design and implementation phases of the project are based on an extensive consultation process with all major stakeholders in the country which took place in the framework of preparing the FIP. The environmental and social safeguards will be monitored at all stages of the project cycle, including close attention to land tenure and changes in this. The main objective is to ensure that the activities funded are consistent with national policies and guidelines as well as with MDB's environmental and social safeguard policies in line with UNFCCC decisions related to REDD+. The safeguard measures will be integrated starting from the project's design phase to prevent, reduce and mitigate the potential harm to environment and people.

For monitoring and evaluation of project achievements and outcomes, focus groups balanced by gender and socio-economic status will be established in representative locations at the outset and members asked to provide baseline information on benefits and on more subjective issues such as engagement and empowerment. Thereafter, focus group members will be asked to keep a diary and to provide regular interviews, for which some payment will be made. This information will be complemented by periodic balanced samples to confirm the findings from the focus groups and the combined information will be fed back for any necessary action or adjustment to processes and input levels.

Financing plan

The proposed funding plan follows (Table D):

Table D - Funding plan

Project component	Funding (US$ million)	
	WB/CIF/GEF*	GoR
Component 1: Support land use planning	3.90	0.40
Component 2: Improve tree planting material	5.80	0.60
Component 3: Support implementation of District Forest Management Plans	4.00	0.40
Component 4: Develop and support Payment for Ecosystem Services	5.80	0.60
Total	19.50	2.00

* Expected external financing: FIP US$ 10 million; GEF US$ 9.5 million.
Additional co-financing and the specific contribution from each donor will be confirmed during project preparation. The contribution of the Government of Rwanda is set at 10% of the external project funding.

Project preparation timetable

Soon after approval of the Forest Investment Plan, the following project preparation steps are anticipated (Table E):

Table E - Project Preparation timeline

Stage	Steps	Deliverables	Date
Preparation	Joint Preparation mission	Statement of Mission Objectives (SMO), TOR	January 2018
Appraisal	Project Approval	Draft Project document	March 2018
	Appraisal mission	Fiduciary arrangements, Implementation manual	May 2018
Negotiations	- Preparation of negotiation package - Conducting negotiations	- Negotiations package - Synthesis of negotiations	July 2018 August 2018
Approval	Submission to the AfDB Board	Final PAD with all Annexes and clearances	October 2018

Request for project preparation grant if required

A sum of US$ 200,000 will be requested for the full appraisal given the complexity and nationwide spread of the intended pilot activities.

Project Concept Note 3 - Wood Supply Chain, Improved Efficiency and Added Value

MDB and lead Government Agency

The MDB, other potential finances and lead government agencies are shown in Table A below.

Table A - MDB and lead Government Agency (-ies)

MDB	Other finance	Lead Government Agencies
AfDB	CIF, GCF, Private sector, GoR	MINILAF, MINALOC, MININFRA, MINECOFIN, RWFA, RDB

Problem statement

There is considerable waste that occurs due to conversion of wood into products (timber, charcoal, biomass energy, etc.) and the wood value chain is poorly organised making wood products low valued. Poor efficiency implies that more trees are cut to meet wood demand and leads to over exploitation. A rapidly growing population that is based on extractive livelihoods and is highly dependent on biomass energy will continue over exploiting the wood resources unless action is taken.

The Project aims to reduce wastage from wood conversion by increasing efficiency of the conversion processes and improving the value of wood products to make them more profitable. The approach is national but some components will be actualised at regional levels.

Proposed transformational impact and co-benefits

The implementation of this project will lead to reduced wood products being used, reduced tree cutting (less deforestation or forest degradation), increased value of tree products and less GHG emissions. Ultimately, the project is expected to generate the following outcomes: (i) Improved farm income, (ii) Diversified farm production, (iii) Increased tree cover, (iv) Sustainable energy sources, (iv) Environmental protection and (v) Increased wood industry development (Figure A).Rationale for FIP financing.

Though the government has clear strategies on forest conservation, national development and poverty reduction, Rwanda is one of the least developed countries (LDCs) of the world and requires support to implement such proposed strategies. Its high vulnerability to climate change requires quick action that will enable its rapidly growing population adapt to climate change through efficient use of forest resources and diversification of sources of income from tree resources.

Rwanda is a signatory to international agreements on climate change and has developed a REDD+ Readiness proposal that identifies specific activities to allow participation in REDD+ implementation. The Green Growth and Climate Resilience Strategy clearly specifies the role of the forestry sector in the country's climate resilience strategy. In its Intended Nationally Determined Contributions (INDC) to Emission Reduction, Rwanda notes that the agriculture and forestry sectors are currently the greatest GHG emission contributors, although the national per capita emissions level is still very low at 0.65 TCO_2 eq./an, and has specified actions to reduce such emissions.

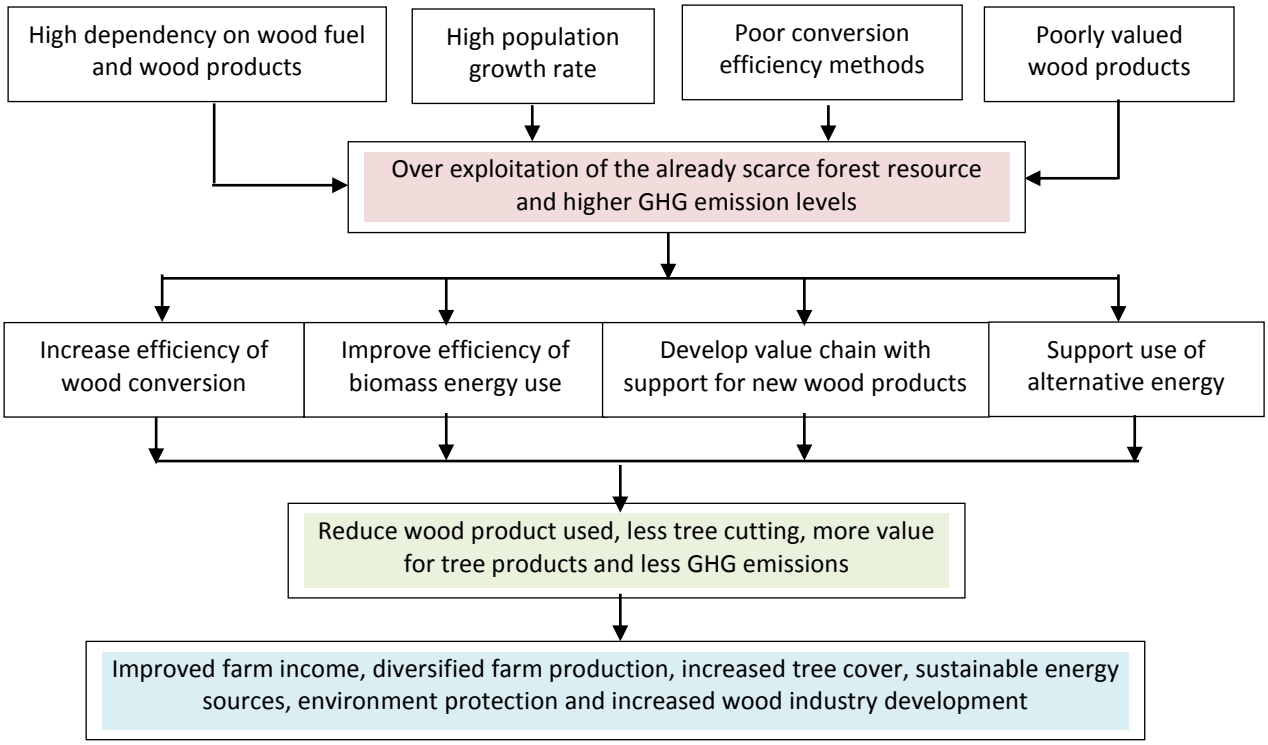

Figure A: Project transformational impact and co-benefits

Implementation readiness

The Government of Rwanda has established laudable legislation, policy and strategies relevant for effective implementation of this project. Some of these laws include the National Forest Policy; the Forest Sector Strategic Plan (2017 – 2021); the Agroforestry Strategy (2017 – 2027), Strategic Plan for Agricultural Transformation (PSTA 4), Seven year Government programme (2017-2024), National Strategy for Transformation and Prosperity (NSTP) Green Growth and Climate Resilience Strategy (GGCRS); Intended Nationally Determined Contribution for Rwanda and Rwanda Readiness Preparation Proposal for REDD+.

The Rwanda Water and Forestry Authority (RWFA) which will be directly supervising the project implementation has strong experience in implementing multi-donor and multi sectorial supported programs funded by The Kingdom of Netherlands, The Kingdom of Belgium, German Government, UNFCC, AfDB, *etc*. At local level, District administrations also have good experience in managing project activities.

Potential national and international partners including their REDD+ financial

The funds to implement this project will be sought from the Climate Investment Fund (CIF), the African Development Bank (AfDB) will be the lead MDB in fund disbursement. Additional funding may be sought from GCF, Bilateral development partners, FONERWA and the Government of Rwanda. The lead government agencies during the implementation of the project is Rwanda Water and Forestry Authority with support of other partners such MoE, MININFRA, MINALOC, SNV, World vision; Local cooperatives and Private investors (Table B).

Table B - Project Partners

MDB	Sources of funds	Lead Government Agency	Key partners
AfDB	CIF, GCF, Bilateral cooperation (Germany, Belgium, Netherlands, etc.),FONERWA and GoR	MINILAF; MININFRA & RWFA	Districts; SNV; World Vision; Local cooperatives; Private investors

Rationale for FIP financing

Though the government has a clear strategy on forest conservation, national development and poverty reduction, Rwanda is one of the least developed countries (LDCs) of the world and requires support to implement such proposed strategies. Its high vulnerability to climate change requires quick action that will enable its rapidly growing population adapt to climate change through efficient use of forest resources and diversification of sources of income from tree resources.

The main objective of the project is related to government development objectives to reduce biomass energy consumption by 50% by 2020 (Vision 2020) and the specific FIP objective to reduce emissions through improved wood conversion efficiency and product use at the national level.

The project will have four components:

- **Component 1**: Increase efficiency in wood conversion into timber and charcoal
- **Component 2**: Support for wood value-chain development and use of new wood based products
- **Component 3**: Support efficiency in biomass energy use
- **Component 4:** Support the use of alternative sources of energy

Project activities in the four components and geographic locations proposed during a stakeholder consultation workshop are shown below (Table C).

Table C: Project activities description as proposed during stakeholder consultation workshop

Activities	Geographic location	Cross cutting activities
Component 1: Increased efficiency in wood conversion		
Education, and awareness on need to use efficient harvesting and conversion methods including development of standard guidelines	Countrywide	Research
Create demonstrations and support the use of Improved charcoal kilns	Countrywide	Research
Support use of better sawing equipment/technologies including guidelines of import of sawing equipment	Countrywide	Regulations and laws
Improve wood product transportation	Countrywide	Standards guidelines, Regulations and laws
Component 2: Support for wood value chain development and use of new wood based products		
Support harmonisation of the Pricing of wood and wood products based on government standard royalties and specifically to apply on farm tree products	Countrywide	Standards and guidelines

Activities	Geographic location	Cross cutting activities
Support production, dissemination and use of wood pellets as energy source	Countrywide	Standards and guidelines
Support extraction of Perfumes and medicinal products to enhance tree value specifically for indigenous trees in drylands of eastern province	Countrywide	Research
Support overall development of the wood industry to reduce imports *e.g.* MDF, plywood and fibre boards	Countrywide	
Component 3: Support efficiency in biomass energy use		
Support the development and implementation of the national charcoal strategy	Countrywide	
Develop a wood energy use master plan for Kigali and Musanze cities	Countrywide	Regulations and laws
Education and awareness on use of improved cook stoves including development of standards and guidelines	Countrywide	
Dissemination of improved cook stoves to 100,000 households in rural areas	Eastern Province	
Component 4: Support the use of alternative sources of energy		
Educating research and awareness	Countrywide	Research
Dissemination of 20,000 units of Solar power	Countrywide	Regulations and laws
Construction of 200 bio-digesters in districts where zero grazing is practiced	Countrywide	Standards and guidelines

Safeguards

The design and implementation phases of the project are based on an extensive consultation process with all major stakeholders in the country which took place in the framework of preparing the FIP. The environmental and social safeguards will be monitored at all stages of the project cycle. The main objective is to ensure that the activities funded are consistent with national policies and guidelines as well as with MDB's environmental and social safeguard policies in line with UNFCCC decisions related to REDD+. The safeguard measures will be integrated starting from the project's design phase to prevent, reduce and mitigate the potential harm to environment and people.

For monitoring and evaluation of project achievements and outcomes, focus groups balanced by gender and socio-economic status will be established in representative locations at the outset and members asked to provide baseline information on benefits and on more subjective issues such as engagement and empowerment. Thereafter, focus group members will be asked to keep a diary and to provide regular interviews, for which some payment will be made. This information will be complemented by periodic balanced samples to confirm the findings from the focus groups and the combined information will be fed back for any necessary action or adjustment to processes and input levels.

Financing plan

The proposed funding plan follows (Table D):

Table D - Funding plan

Project component	Funding (US$ million)	
	MDB/CIF *	GoR
Component 1: Increase efficiency in wood conversion into timber and charcoal	3.75	0.50
Component 2: Support wood value-chain development and use of new wood based products	2.50	0.25
Component 3: Support efficiency in biomass energy use	2.50	0.25
Component 4: Support the use of alternative sources of energy	2.50	0.25
Total	11.25	1.25

* Expected external financing: FIP US$ 5 million; AfDB US$ 6.25 million
Additional co-financing and the specific contribution from each donor will be confirmed during project preparation. The contribution of the Government of Rwanda is set at 10% of the external project funding.

Project preparation timetable

Soon after approval of the Forest Investment Plan, the following project preparation steps are anticipated (Table E):

Table E - Project Preparation timeline

Stage	Steps	Deliverables	Date
Preparation	Joint Preparation mission	Statement of Mission Objectives (SMO), TOR	January 2018
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Negotiations	- Preparation of negotiation package - Conducting negotiations	- Negotiations package - Synthesis of negotiations	July 2018 August 2018
Approval	Submission to the AfDB Board	Final PAD with all Annexes and clearances	October 2018

Request for project preparation grant if required

A sum of US$ 200,000 will be requested for the full appraisal given the complexity and nationwide spread of the intended pilot activities.

Annex 2 Consultation and Stakeholder Engagement

Introduction

174. During the identification and design phase of the Rwanda Forest Investment Plan, an inclusive participatory process was adopted at all levels. A clear Stakeholder Engagement Strategy (SES) for FIP was designed and approved by the relevant authorities.

175. The strategy ensured that potential stakeholders generally and effectively contributed to the formulation of the FIP through their experiences, views and inputs. The process therefore began with organizing the inception meetings, preparation of inception reports with subsequent presentations in order to obtain clear guidance on the expected FIP outcomes. The guiding principles in the whole process emphasized meeting with relevant stakeholders in the provinces and districts, obtain information regarding the current status of forest resources in Rwanda.

176. The consulting team ensured a high level of integrity, transparency, good faith of the participants, respect for the rights and cultural diversity of stakeholders, inclusion and representativeness. During the consultation process, key informant interviews and meetings were organized at different levels.

177. Objective of stakeholder consultations

178. The objective of stakeholder consultations was to seek inputs from a wide range of stakeholders that are well knowledgeable on forest resources and also to facilitate awareness and comprehensive understanding for future stakeholder engagement in FIP implementation.

179. The consultations emphasised the following three main aspects:

- To identify challenges faced in the forest sector;
- Record the solutions proposed by stakeholders to overcome these challenges; and
- Integrate the findings into the proposed investment priorities to be considered in the Forest Investment Plan.

180. The main stakeholder groups identified for consultation and engagement included: Government institutions; Development Partners; Multilateral Development Banks; Civil Society Organisations; Private Sector; Farmers; Private entrepreneurs engaged in the timber industry; and Wood workers, and Local cooperatives. The consultation process engaged a total of 120 stakeholders through key informant interviews and meetings. Stakeholders were engaged at various stages including:

- Preparation of the inception report and its presentation;
- Preparation of the interim report and its presentation;
- Field consultations with stakeholders in the four Provinces of Rwanda and in the City of Kigali; and
- Identification of FIP priorities.

Stakeholder consultations in the four Provinces of Rwanda and Kigali City

181. Sample districts were selected basing on specific conditions relevant to the FIP development. The rationale for the selection of districts in each province is highlighted below;

- Eastern Province: Nyagatare, Kayonza and Bugesera Districts - These are the dryland districts with flat topography. They have a combination of agriculture, forestry, agroforestry, and silvo-pastoralism. Also includes Akagera National Park, where PES has been piloted.

- Northern Province: Musanze, Burera and Gakenke Districts - the first two Districts are known to be contiguous to Volcanoes National Park. Competing claims for conservation are common in these highly agricultural areas. Mining also occurs in some areas of Gakenke District.
- Southern Province: Nyaruguru, Nyamagabe, Huye, Muhanga and Kamonyi Districts - very forested areas. Nyaruguru and Nyamagabe districts are part of Nyungwe and are known to be the main source of charcoal for Kigali and other provinces. There are extensive forest and tea plantations in this area.
- Western Province: Karongi, Rutsiro and Nyabihu – There are many tea plantations and all districts are very hilly. There is high competition for both forest land and agricultural land.
- Kigali City: Gasabo District, Kigali City Office, other selected institutions directly involved in forestry sector.

Results from stakeholder consultations

182. There have been competing claims for forest resources between the local communities and forest conservationists. Moreover, there has been a lot of pressure on land for different purposes. Additionally, there is limited non-agricultural livelihood options for the rural poor farmers which adds more pressure on the forest trees or trees planted on the farms. This is an issue that calls for concerted efforts from all stakeholders both at the design and implementation levels;

183. During the consultation meetings carried-out in the four provinces of Rwanda, crucial information to support the development of the Forest Investment Plan were gathered. It was noticed that the whole country faces almost the same problem in the forest sector and suggested investment priorities covered the same area of intervention. The following are the major problems that were pointed out in all provinces and the city of Kigali:

- The limited number of skilled forestry extension officers and their lack of sufficient means;
- Weak law enforcement;
- Lack of awareness among communities;
- Poor quality of tree seeds and plants from nurseries; and
- Weakness in public forest management

184. Proposed solutions to the problems include:

- Review the procurement process for tree seeds and delays in starting nursery activities;
- Improve coordination of policy implementation on the ground, involve stakeholders more strongly in forestry planning and improve law enforcement measures;
- Improve tree reproductive material;
- Strengthen the capacity of extension services and communities;
- Promote alternative sources of energy and adopt more efficient technology for charcoal making to reduce the use of wood for fuel in the country; and
- Strengthen institutional arrangements for the forestry and agroforestry sectors.

Proposed investment priorities by stakeholders:

- Mobilise farmers to plant agro forestry trees in their farming system;
- Support good progress towards sustainable forest management;
- Strengthen forestry extension services and institutional collaboration;

- Source and promote high quality and resistant tree seeds; and
- Raise awareness of communities and other stakeholders to promote the forestry sector more strongly.

Stakeholder involvement in the implementation of the Investment Strategy

185. The implementation of FIP support activities will require full participation of different stakeholders including local communities. Consultations will continue to promote multi-stakeholder coordination, knowledge sharing and dialogue aimed at improved implementation performance and decision-making across multiple land uses and actors at the national, provincial, district and local levels, across the country.

186. As noted in section 0, the monitoring plan includes regular interviews with key stakeholder beneficiaries as a source of verification of their satisfaction with the progress and identification of where and how changes could and should be made. Socio-economic monitoring will be essential to quantify the benefits being received from FIP investment compared with a baseline using regular sampling with key informants in a range of target localities that overall cover all aspects of FIP implementation. The critical point is that such sampling will be a two-way process providing hard data and information and identifying changes and opportunities for further engagement in the planning and delivery of FIP.

187. The private sector will be closely engaged during FIP implementation, given the emphasis of the investment on support to SMEs in the natural and planted forests and agroforestry value chains, which could create jobs for local communities especially for vulnerable groups, e.g. women and unemployed youth, support economic growth and poverty reduction and help to tackle the drivers of deforestation and forest degradation in Rwanda.

188. The private sector may also become involved through the concept of Payment for Environmental Services (PES) and in future increasingly through some sort of carbon market or financing elements.

Table 26 Consultation outcomes from Eastern province

Challenges In Forestry Sector	Proposed Solutions	Investment Priorities
° Very limited budget allocated to forestry sector ° Limited number of skilled forest extension officers and lack of sufficient means. ° Lack of monitoring of planted trees ° Climate change/variability characterised by a long period of extreme drought ° Termites and cattle grazing ° Poor quality of seeds collected by unprofessional entrepreneurs ° Conflict between policies implementation or sometimes, contradictory policies, *e.g*. Modern agriculture requires land consolidation and use of mechanization, while forest policy encourages agroforestry. ° Less economic value given to forests by decision/policy makers at all levels and local communities ° Deforestation due to conversion of forested land into agriculture land or settlement/construction land, especially for villages and schools ° Mining especially in mining concession ° Lack of adapted and diversified tree species	° Intensification of agroforestry on community lands using diversified species including fruit trees ° Recruit and appoint forest extension officers to sectors and cells. They main role is to monitor and maintain planted trees as well as educate and sensitise local communities on the importance of forests. ° Decentralisation of forest budget up to sector level and revise the procurement procedures and contracts related to seeds and seedlings production (nurseries) and make it professional ° Promote alternative sources of energy, especially gas, to reduce the current high demand for biomass energy. ° Improve coordination of policies implementation on ground, stakeholders involved in forest and enhance the enforcement of the forestry law ° Review the structure of the institution in charge of forestry in Rwanda, strengthen it and decentralise budget and staff up to cell level ° Train local entrepreneurs involved in tree plantation, particularly Reserve Forces and include community participation in their contracts	1. Develop and Support the implementation of District forest management plan and focus on maintenance and protection of existing forests. 2. Intensification of Agroforestry and forest landscape restoration 3. Empowering institution in charge of forest management, including skills development and avail technical equipment for the forest technicians at all levels 4. Develop a research program on fast growing and drought & diseases resistant trees seedlings

Table 27 Consultation outcomes from Western province

Challenges In Forestry Sector	Proposed Solutions	Investment Priorities
° There is lack of collaboration on projects being implemented by different department at District level (Agriculture, Environment, Forest…). ° Local communities implement projects without their implication at early stage. ° Lack of awareness of communities on projects being implemented ° Weak implementation of project/legislation from local authorities ° Delay in providing tree seeds ° Communities are reluctant to implement project that they were not involved in at early stage ° Low budget allocated to forestry sector at district level ° Lack of effective collaboration framework between central level (RWFA) and district level ° State forest are poorly managed ° Failure of agroforestry because of no involvement of communities in the selection of species	° Communities should be involved at early stage of the design to avoid resistance during the implementation. ° Increase collaboration framework among stakeholders but specifically among government institutions dealing with environment, agriculture and forestry. ° Development of new technology of charcoal making to reduce high pressure on forest ° Review the procurement system to supply tree seedlings. It has been noticed that inexperienced people distribute poor quality seedlings. ° Put in place seeds quality control at District level	1. Increase mobilization and awareness of local communities at all stages of the project. This facilitates the ownership of the projects to communities 2. More focus on sustainable management of forests with specific emphasize on state forests, which are currently poorly managed 3. Increase the budget and other means allocated to forest sector at district level 4. Promotion of Agroforestry

Table 28 Consultation outcomes from Northern Province

Challenges In Forestry Sector	Proposed Solutions	Investment Priorities
° Weak implementation of the restoration and rehabilitation of degraded forest ° The demand of charcoal, timber and firewood is higher than the supply. ° Trees are being affected by Pest and disease ° Forests are damaged by illegal harvesting for state & district forests while private forests are harvested at immature age. ° Higher investment cost than turnover, private investor consider this as a loss to invest in forest sector. ° Species used in Agroforestry are not profitable in terms of revenue and the population's adoption of Agroforestry techniques is still low. ° Underestimation of the value of forest trees by some authorities & local population.	° Improve forest harvesting technics to maximize productivity ° Raise awareness of community in maintenance of forest ° More efforts should allocated in pests & diseases control. ° Improve coordination & coherence between authorities & local community ° Attracting & interesting private sector to invest in forestry sector. ° Strengthening extension services ° Promoting fruit trees in agroforestry development. This can contribute to food security, generate income and contributes to soil protection. ° Sensitization and adoption of other energy alternatives.	° Development of Agroforestry ° Reinforcement & creation of forest cooperatives. ° Encouraging private investment in forestry sector ° Promotion of quality and resistant tree seeds ° Promote Sustainable forest management by providing support to DFMP.

Table 29 Consultation outcomes from Southern Province

Challenges In Forestry Sector	Proposed Solutions	Investment Priorities
° Harvesting un-mature forests (over-harvesting) for charcoal making ° Insufficient forest extension staff ° Encroachment of public forests for agriculture (Coffee and other crops) ° Poor survival of Agroforestry planted seedlings ° No remarkable investment in forest sector ° Lack of law enforcement measures ° Insufficient budget allocated to the district for the forest sector ° Occurrence of pest in plantation (Bronze bug) ° Tenure not clearly established for public forest plantations and hence encroachment and appropriation by some farmers ° DFMP are not implemented ° Procurement process for tree seeds and delays in starting nursery activities ° Mining occurring in public forest	° Promote co-management in public forests ° Improve forest extension/increase extension staff ° There are existing and potential ecotourism opportunities in the province that can be developed. ° Improve procurement process of tree seeds ° Improve forest extension services by increasing the number of forest extension officers and providing them with transport facility ° Allow districts to decide on reconversion of their forests ° Strengthen forest research to introduce new or improved tree reproductive material	° Promote Agroforestry practices on terraces and other farms with focus on fruit trees ° Improve forest management of different type of forests. ° Strengthening forest extension services ° Promote alternative source of energy

Table 30 Consultation outcomes from Kigali City

Challenges In Forestry Sector	Proposed Solutions	Investment Priorities
° Productivity of forests seems to have lowered, mainly due to overexploitation and early harvesting (for charcoal, construction and other uses). ° No replantation or restoration, following harvests happen on grown offspring. ° Challenge in Ministerial mandate to manage Agroforestry between MINIGRI and MINIRENA ° Fruits trees are profitable but a lot of challenges with pests and diseases ° There is lack of awareness on different aspect related to the management of the forests in Rwanda (afforestation and agroforestry). ° Lack of Legal framework to support PES ° Lack of coordination of forest activities within Kigali City office. Responsibilities related to forest are scattered in different units. ° Insufficient monitoring of planted trees ° Conflict between forest policy, agriculture policy and urbanisation policy during the implementation of master plan.	° Promote co-management in public forests ° Ensure long term planning for covering the needs in forest products ° Promoting agroforestry ° Enhance the profitability of forest trees by increasing forest productivity. ° More training to increase knowledge and skills on forest management at different level. ° Strengthen forest department and establish and empower forest communities at district, sector and cell level	° Restoration and rehabilitation of forest cover to curb the trend of climate change effects ° Promote Agroforestry system ° Promotion of research on indigenous trees ° Create awareness on forest investment ° Promote wood industry ° Sustainable management of forest to restore poorly managed forests ° Promotion of research on appropriate and diversified and high quality urban tree species ° Empowering forestry units and forest technicians

Note: Different institutions were consulted in Kigali to gather information to support the development of FIP. Institutions were selected based on their involvement and the contribution to advance the forest sector in Rwanda. The information provided are not related to a specific province, rather concerns the whole country. The following institution were consulted: ICRAF, REMA, RWFA, WCS, IUCN, RDB, MINAGRI, CoEB, The City of Kigali, Gasabo District, EMS-E Multi Service, Rwanda Mountain Tea and ADARWA.

Annex 3 Engagement with the FIP Dedicated Grant Mechanism

189. Rwanda does not have either separate Indigenous Peoples nor does it have major issues with land rights (see Box 5 in Section 3.5). While there are many communities who are and will continue to be forest dependent, the ownership pattern of trees and woodlots means that for the most people depend on private or community owned sources of forest products.

190. Nevertheless, Rwanda would be interested to have observer status within the DGM so that it can benefit from the valuable accumulated resources of information and experience that is available within DGM. There may also be cases where the DGM experience and expertise in dispute resolution could be helpful for the country and actors within it.

191. Conflict resolution committees made up of local people representing specific localities are recommended as part of the Steering Committee structure (see Section 7.2.2). Such committees could benefit greatly from the experience of the DGM in conflict resolution.

Annex 4 Action Plan for implementation of Rwanda R-PP

Component 1a: National Readiness Management Arrangements							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Definition of roles of each stakeholder							Report of identification of task/ToR
Establishment of the National Steering Committee							National Steering Committee task
Meeting of the National Steering Committee							Report of the meeting
Meeting of the Scientific and Technical Committee							Meeting report of the Scientific and Technical Committee
Recruitment of the experts to set up the REDD+ Unit							ToR of experts / expert contracts
Training of experts of the REDD+ Unit and District coordination team							Training report presenting the types of training and the number of people trained
Training of the scientific and the technical committee							Training report presenting the type of training and the number of people trained
Training of the Steering Committee and the District Forest Task Force Members							Training report presenting the types of training and the number of people trained
Training in specialized domains							Training report presenting the domain and the number of people trained
Establishment of the conflict management bodies							ToR of conflict management bodies
Training of the conflict management bodies members							Training report presenting the types of training and the number of people trained
International representation							Identification of international adviser

Component 1b: Information Sharing and Early Dialogue with Key Stakeholder Groups							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Inception Workshop for planning, training and awareness on REDD+ strategy							Information support material available on planning, training and awareness on REDD+
Training of trainers workshop on climate change and REDD+ issues							Training report presenting the types of training and the number of people trained
Consultation workshop on institutional arrangement around the REDD+ in Rwanda; production of a draft legal document as a REDD + structure in Rwanda							Institutional arrangement around the REDD+ in Rwanda strengthen
Editing and duplication of communication and awareness tools of REDD + strategy							Communication and awareness tools for REDD+ support material available

Component 1b: Information Sharing and Early Dialogue with Key Stakeholder Groups							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Drafting terms of reference and hiring consultants (national and international) for R-PP+ development and REDD+ state study in Rwanda							Draft of ToR and consultants hiring available
Drafting documents of R-PP and REDD+ state by national consultants							Documents of R-PP and REDD+ state draft by consultants
Sessions in consultation Workshops with stakeholders in provinces and Kigali City for data collection and information sharing on REDD+ mechanism							Training report on data collection and information sharing on REDD+ mechanism
Training and consultation workshop with Private/Civil Society organizations about the REDD+ mechanism							Training report on Private/Civil Society organizations about the REDD+ mechanism
R-PP and REDD+ structure consolidation, validation workshops of two documents and dissemination of Information and research findings							Information on research finding disseminate
Training workshop on national forest monitoring system (NFMS)							Training report on national forest monitoring available
Workshop for forest definition in the context of REDD + in Rwanda							Definition of the forest done
Enhancement of awareness, trainings, data collection and situation analysis in the REDD+ domain							Awareness, trainings, data collection and situation analysis in the REDD+ enhance

Component 1 c: Consultation and Participation Process							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Complete the list of stakeholders, define their roles in REDD+ and prepare implementable consultation and communication plans							The list of stakeholders is complete, their roles in REDD+ and prepare implementable define.
Development of strategy of integrating women, youth and marginalized groups							A strategy document on the integration of women youth and marginalized groups
Collect and analyze all information related to REDD+ and disseminate result							Information related to REDD+ and disseminate result are collected and analyzed
Creation of REDD+ information database and make it operational							REDD+ information data base is create and is operational
Develop data guideline for implementation of REDD+ data/information collection, processing and use in real cases							Guideline for implementation of REDD+ data/information collection, processing and use in real cases is develop
Strengthening community based organizations (including training of groups that will continue carrying out the awareness, training and consultations)							Community -based organizations strengthening
Implementation of the communication plan and reinforcement of the information in the database							Communication plan and reinforcement of the information in the database are implement

Component 2a: Assessment of Land Use, Land Use Change Drivers, Forest Law, Policy and Governance							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Studies on forest land use change							ToR of the study / Study report
Assessment of forest governance							ToR of the forest governance to REDD+

Component 2b: REDD-plus Strategy Options							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
SWOT analysis of Forestry Sector to implement REDD+ Strategies							Report of the implementation of REDD+ strategy
Development of District Forest Management Plans for all Districts to ensure sustainable management of forest resources							Sustainable management of forest resources is implement at District level
Cost/benefit assessment and economic impact of REDD+ options							Report of cost/benefit assessment and economic impact of REDD+ options
Preparation of pilot projects							Report of the preparation of pilot projects
Participative identification of strategic options							ToR of the participative identification of strategic options
Feasibility study of strategic options							ToR of the study

Component 2c: REDD-plus Implementation Framework							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Operationalization of national and decentralized structures							National and decentralized REDD+ structures are operational
Study for REDD+ integration in national legislation and policy							ToR of the study / Study report
Progressive implementation of the legislation							The legislation is progressively implement
Studies on conflict management							ToR of the study / Study report
Operationalization of conflict management bodies							Conflict management bodies is operational
Database on conflicts							ToR of the study / Study report
Study on national and international experiences on revenue sharing							ToR of the study / Study report
Construction of the mechanism for revenue sharing							The mechanism for revenue sharing is construct
Study on national and international experiences on funds management mechanisms							ToR of the study / Study report
Construction of the mechanism for funds management							The mechanism for funds management is construct

Component 2d: Social and Environmental Impacts during Readiness Preparation and REDD-plus Implementation							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Put in place SESA Coordination Committee							SESA Coordination Committee available
Draft ToRs for SESA Process							ToR available
Recruit consultants for SESA elaboration							Experts hired
Undertake SESA Process – Scoping							SESA Process – Scoping undertakes
Undertake SESA Process – Consultation							SESA Process – consultation undertakes
Design ESMF							ESMF design
Develop National REDD+ Safeguards							Report National REDD+ safeguards
Validation Workshop for SESA, ESMF & Safeguards documents							ToR of the study / Study report
Finalisation SESA + ESMF & Safeguards documents							ToR of the study / Study report
Capacity building on ESMF & Safeguards							ToR of the study / Study report

Component 3: Development of a National Reference Scenario							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Definition of the concept of “forest”							The concept of “forest” is define
Test in 6 agro-ecological REDD+ zones for validation of the definition of forest							Study report available
Determination of the reference period							Reference period determine
Inventory data allowing an evaluation of forest							ToR of the study / Study report
Evaluation of the quality of various existing data							ToR of the study / Study report
Validation of data over the reference time period							Data over the reference time period are validate
Compilation of data in state development programs and their impact							Data are available
Definition of the protocols for processing and using satellite image							Definition is available
Identification of forest strata in each agro-ecological REDD+ zone							Report of the study
Development of methodologies for validation of mapping works in the field							Report of the study
Preparation of the methodology for inventorying the carbon stock							Report of the study
Implementation and development of participatory measurement systems for carbon stocks							Report of the study
Evaluation of methodologies for the preparation of reference Scenarios							Report of the study
Preparation of the current status of the extent of forest formations							ToR of the study / Study report

Component 3: Development of a National Reference Scenario							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
Implementation of the inventory of carbon stocks for forest strata							ToR of the study / Study report
Preparation of mapping for forest formations on different dates							ToR of the study / Study report
Preparation of a historical deforestation map on the boundary of six agro-ecological REDD+ zones							Report of the study
Determination of the evolution of C emissions during the reference period							Report of the study
Introduction of adjustment factors							Adjustment factors introduce
Evaluation and adoption of emission factors in function of the various forest strata							Emission factors evaluated and adopted
Development of spatial regression models							Spatial regression models develop
Completion of reference scenarios on an agro-ecological REDD+ scale							Reference level at agro-ecological REDD+ scale available
Completion of the national reference scenario							National reference scenario establish
Recruitment of experts for the support of the reference scenarios							Experts hired
Consultation at the decentralized and national levels for preparation of the reference scenarios							ToR of the study / Study report
Strengthening of capacities of local actors on the preparation of the Reference Standards							ToR of the study / Study report
Strengthening of capacities of central and decentralized technical cells on the Reference Standards							ToR of the study / Study report

Component 4a: National Forest Monitoring System (NFMS)							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
1. Define roles and responsibilities of stakeholders							Stakeholders roles and responsibilities Define
2. Increase capacity and training for various stakeholders							Capacity building
3. Develop and implement pilot NFMS plan for activity data							Report of the study available
(a) Determine scale for remote sensing imagery							Scale for remote sensing imagery determine
(b) Define the role of community mapping							The role of community mapping define
(c) Decide on frequency of wall-to-wall and sampling approaches							Report of the study
(d) Establish QA/QC procedures for monitoring activity data							Report of the study
(e) Test pilot NFMS plan for activity data monitoring at demonstration sites and revise as needed							Report of the study

Component 4a: National Forest Monitoring System (NFMS)							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
(f) Acquire activity data for monitoring period							activity data for monitoring period acquire
(g) Divide activity data by REDD+ activity category							Activity data by REDD+ activity category are divide
4. Develop and implement pilot NFMS plan for C stock data							Pilot NFMS plan for C stock data are develop and implement
(a) Collate ancillary spatial data and stratify land area							Ancillary spatial data and stratify land area collate
(b) Develop a preliminary field sampling design							Report of the preliminary field sampling design
(c) Evaluate options and partnerships for using of RS data for C stock change							Report of the study
(d) Carry out preliminary field measurements and finalize sampling design							Result available
(e) Test the pilot NFMS plan for carbon stock assessment at demonstration sites and revise as needed							Report of the study
(f) Compute national values for key C parameters							Key C parameters are compute
(g) Create a national database of C emission factors by REDD+ activity (lookup tables)							Database of C emission factors by REDD+ activity available
5. Reporting net national C emissions and subject report to international verification							Report available

Component 4b: Designing an Information System for Multiple Benefits, Other Impacts, Governance, and Safeguards							
Activities	**Year 1**		**Year 2**		**Year 3**		**Indicator/Source of verification/ Results**
	S1	**S2**	**S1**	**S2**	**S1**	**S2**	
1. Design an M&E plan for social, environmental and other impacts							Report available
2. Assess and enhance capacity for implementing the M&E plan							Report of the study
3. Select indicators and collect baseline data							ToR of the study/ report of the study
4. Test pilot monitoring plan on demonstration sites							Pilot monitoring plan on demonstration sites test
5. Report results of monitoring and compile long term plan							Report of the study

Annex 5 Voluntary peer review of the FIP Investment Plan

Independent Review of the Forest Investment Plan of Rwanda (RW-FIP)

Reviewer: Jürgen Blaser
Date of review: 31 October 2017

Setting the context (from the reviewers overall understanding of the FIP document)

Rwanda is one of smallest (26,338 km2) but highest populated countries (nearly 500 people per km2) on the African continent. It is characterized by a hilly topography over a wide range of geology climatic and edaphic conditions. Thus, over small distances there are quite large variety of situations in respect to land use, soil conditions (mineral content, acidity) and water availability.

Some 10% of Rwanda's forests is currently well protected through forested national parks. Despite of a registered 29% of with forest cover (per recent national forest inventory), more than one-third of this is shrub land, which is the forest type currently under the greatest threat of conversion while the greater part of the planted forest area is comprised mainly with a small number *Eucalyptus* species and, historically, also tropical pin. Good attempts have been made since many years to include trees within farming systems and these are today prominent in many of the landscapes. Nevertheless, the tree species base is limited and the quality and growth capacity restricted.

Planted forests include national and district public forests as well as extensive privately-owned stands; most of these are small. With few exceptions, these planted forests hold today a low volume of poor quality stock. As the FIP document stated out, these forest stands are rather poor due to meagre site-species matching; inadequate land preparation; low quality plants raised from seed of indifferent quality; lack of tending, climate hazards when planting and poor management. To add to this, climate change predictions suggest that conditions will become more challenging and will require active changes if tree planting is to be successful. The proposed FIP program intends to overcome these problems by proposing a set of technical approaches at the level of silviculture, agroforestry and wood fuel use.

Rwanda's limited land area, high population density and rapid economic growth require that all land uses, including trees and forests, are as efficient as possible. Factors such as steep slopes and heavy rainfall intensity further require that ecosystem service values such as soil and water conservation are also delivered in parallel with production. Highly fragmented land holdings bring in additional complexity for forestry solutions. As the FIP document states out, however, there is widespread interest in agroforestry on private to deliver both products and services, albeit that the diversity of species and application of the technologies have substantial scope for improvement. Rwanda also has good experience in community based forestry and social development and a tradition in tree planting.

The overall objective of the FIP Rwanda goal of the proposed FIP interventions is "*Sustainable management of forests and forest landscapes to address the drivers of deforestation and forest degradation"*. To contribute to such large goal, the program proposes to work through tree independent projects, as follows:

- CN1 – *Development of Agroforestry and Sustainable Agriculture*, Total funding – US$ 61 million; preparation grant US$ 300,000; with three components: (i) agroforestry for land stabilisation, (ii) value chain development for agroforestry products and (iii) capacity building
- CN2 – *Sustainable Forest and Landscape Management,* Total funding – US$ 21.5 million, preparation grant, US$ 200,000; with four proposed components: (i) support land use planning, (ii) improve tree planting material, (iii) support implementation of district forest management plans; (iv) develop and support PES in three pilot forests
- CN3 – *Wood Supply Chain, Improved Efficiency and Added Value*, Total funding – US$ 12.5 million, preparation grant US$ 200,000; with four components: (i) increase efficiency of wood conversion into timber and charcoal, (ii) support wood value-chain development and use of new wood products, (iii) support efficiency in biomass energy use and (iv) support the use of alternative sources of energy.

The total budget over a proposed duration of 6 years is US$ 95 million to achieve the following proposed outcomes:

- Planted trees at all scales are more resilient to climate change;
- Forest productivity increased and risks from climate change, pests and diseases reduced;
- Increased service values delivered;
- Rehabilitation, restoration, agroforestry, plantations at all scales and patterns conducted to high standards; and
- Natural forests and woodlands increase in quality and extent due to reduced pressures and active management and protection.

Part I: General criteria: The *investment plan complies with the criteria indicated in the ToRs* [51]

A. Country capacity to implement the plan	
The Government of Rwanda has taken commitment to a low-carbon development agenda since 2013 focusing on the land use sector. It has created a National Forest Monitoring System (NFMS) dealing with overall needs of the country in matters regarding MRV (with support of FAO) of the forest cover and REDD+ activities. In the framework of COMIFAC, Rwanda received a funding support of the Congo Basin Forest Fund (CBFF) to implement "Forest Monitoring Systems and National MRV" with a regional approach in the Congo Basin countries. However, Rwanda never applied to FCPF or UN-REDD for R-PP development and readiness funding. Strong commitments have been formulated on sustainable agriculture and forestry in the country's Intended Nationally Determined Contribution (INDC), submitted to UNFCCC in 2016. The FIP is aligned to such strategic approaches and designed as a phase-2 tool in preparation of REDD+ (forest-based investments). The institutional setup is adequate to implement the proposed FIP and includes those institutions that should have the necessary capacities to implement the plan. The Rwanda Water and Forestry Authority (RWFA) under the Ministry of Land and Forestry has oversight of the country forest policy	

[51] Each criterion is assessed in 3 colors: green = met the criteria; yellow = need for some additional work; red = did not meet the criteria yet.

and its implementation, and assumes the direct responsibility for implementing the FIP (and REDD+ overall). REDD+ is an integrated part of the Green Growth, Climate and Resilience Strategy (GGCRS), which assigns a prominent role to the forest and agroforest sectors in the countries long-term development and climate change goals.

However, the major problem to implement the FIP is linked to the erosion of sound technical forestry knowledge that once existed in the country. This is rightly recognized in the document and proposals include provision for technical (external) support to research and training as well as delivery. Field extension officers are essential to ensure good practices are used. Developing clear standards and guidelines is an essential first step as these will provide the basis for making grant payments to private growers and payments to those holding leases for rehabilitation of public forests and undertaking forest landscape restoration.

B. Developed based on sound technical assessments

Overall, the FIP proposal is technically sound and well elaborated from a silvicultural and land use perspective, demonstrating clearly the potentials for increased enhancement of carbon sinks, livelihood needs and wood energy. The three project proposals demonstrate the handwriting of people with knowledge of the local context and technical expertise. The devastation of natural forests over the past 30 years or so means that its restoration needs to be largely undertaken through artificial regeneration initially, including indigenous species where appropriate. Critical element is the huge wood supply gap, which given the limited land area means high production options are essential but these needs to be correctly specified to ensure delivery of service values as well as production.

Rwanda has had considerable experience with a diversity of bilateral and multilateral cooperation partners in the areas of tree planting on degraded lands for their restoration, agroforestry, forest and tree based value chain development, and indigenous and exotic tree species introduction in plantations and agroforestry. Using lessons from them could be useful for the proposed Programme.

The proposal could be further strengthened by reflecting more on the current planted area situation with regards to species used for different objectives, land ownership, users' needs, and forecasts of these needs. In Rwanda, an intensive and technically well elaborated rehabilitation, agroforestry and reforestation programme has been implemented up the mid-1990 over more than 20 years and context-related information on planting/land rehabilitation approaches could be evaluated when relaunching a science-based FIP programme (particularly for projects 1 and 2. Also, the tensions between the twin goals of achieving rural poverty reduction outcomes and enhancement of sinks could be further addressed. Such analysis is particularly important in the density populated country with scarcity of arable land and where available forest resource are insufficient to cover wood fuel needs in rural and semi-urban areas (as rightly emphasized in the document).

C. Demonstrates how it will initiate transformative impact

The Programme Document does yet not fully demonstrate how the proposed FIP and each one of the three proposed projects will initiate the transformative impact. The theory of change (ToC) that

is provided does yet not sufficiently map the pathways of change from the Programme outputs to the expected outcomes, up to the intended impact. Table 16 on page 55 should be clearer in respect to the drivers of impact and the assumptions on technical, social and institutional actors who interact along the causal pathways and who drive or impede transformative impact (see additional remarks and suggestions made in Annex 1).

D. Prioritization of investments, lessons learned, M&E, links to the results framework

It is understood from the reading of the Programme Document that prioritization of investments is in line with the five challenges that are identified under paragraph 45. These challenges focused on policies and the regulatory provisions. They do not include other important challenges such as: (i) Rural poverty which is a powerful driver of deforestation and degradation in the context of Rwanda; (ii) Capacity of local communities' institutions to ensure access to the benefits of REDD; (iii) Governance mechanisms that ensure the equitable distribution of such benefits among all relevant stakeholders and within local communities; (iv) Mainstreaming gender in the Programme, particularly in the benefits of REDD. The Theory of change as presented in Table 16 does not reflect how these challenges are addressed.

Generally, the three project Concept Notes address the key priorities for the forestry/agroforesty sector but success will only accrue if the parallel intensification of agriculture is also effectively delivered within a framework of sound land use planning (see Box 3, page 29 these draft guidelines need to be implemented). The link to agricultural intensification should accrue through the SPCR, which is in development concurrently with FIP.

In the further preparation of the FIP, the program should develop on which relevant lessons could be learned from research and development projects in the areas of silviculture of indigenous and exotic species, agroforestry, and restoration of degraded lands. E.g. Annex 6 could be complemented with a list of references on relevant experiences in the country. It can also be noted that under the item "Commercial Timber Species – Silvicultural Requirements", the Programme Document includes several exotic species for which there is not enough experience to justify scaling up their use in the country, e.g. *Khaya anthoteca, Entandrophragma cylindricum, Entandrophragma utile*.

The Programme Document mentions that the achievements of the Programme will be monitored, but it does not outline a sound M&E system to monitor the results and track progress towards achieving the objectives. The M&E responsibilities still need to be defined as the data sources and data collection instruments for the M&E.

The Programme Document provides the results framework and respective indicators under sub-chapter 6.5. It is understood by the reviewer that a Log frame will be added in the final version of the FIP that can serve as a basis for M&E in addition to guiding the tracking of delivery.

E. Stakeholder consultation and stakeholder engagement

The Project document mentions that the design of the Programme was based on an extensive consultation process with all major stakeholders in the country. It also mentions that the Program's activities were confirmed during a stakeholder consultation workshop. In its Annex 6, the FIP

document provides further details on stakeholder consultation and stakeholder engagement. The stakeholder groups identified for consultation and engagement are: Government institutions; Development Partners; Multilateral Development Banks; Civil Society Organizations; Private Sector; Farmers; Private entrepreneurs engaged in the timber industry; and Wood workers, and Local cooperatives. The same Annex provides consultation outcomes per province. However, the document does not provide the kind of deliverables that are expected from stakeholder consultations that will take place during the implementation phase.

F. Social and environmental issues, including gender

It is obvious from the analysis in the FIP report that Rwanda is already in crisis with its wood supply gap and the severe problems with soil loss and erosion, landslides and floods. Capturing public interest and supporting it with grant payments for remedy is proposed as a feasible PES approach albeit that the payments are for avoided costs rather than for concepts such as ecotourism. Rwanda has a very profitable ecotourism sector based around the mountain gorillas (but very locally-focused); there are no immediately apparent similar opportunities.

With regards to gender, the Programme Document provides detailed descriptive information on gender dimension in the legal and policy context in the country, and in the context of forest management (Box 5). However, no gender analysis is presented or referenced, and the Program's ToC does not integrate gender mainstreaming in the design. It is of course recognized here that gender is identified among the crosscutting issues under the bullet point "Support for Gender Equity which allows involvement of women and youth in forest management and conservation"; however, the programme document does not define explicit gender equality or women empowerment related activities, outputs or outcome. Here some additional explanation would be of use.

G. New investments or funding additional to on-going/planned MDB investments

The FIP proposal is well complementary to other MDB investments in the sector (World Bank LAFREC project and AfDB PGReF project), as well as engagements of bilateral agencies and other partners. This is also the policy of the Government that puts emphasis on coordinated actions between donors and co-financing programs. As the FIP clearly focuses on technical approaches it can input several programs and projects that address agriculture and green economy.

H. Institutional arrangements and coordination

The Programme Document notes that the overall supervision of the FIP falls under the Ministry of Land and Forestry (MINILAF), which collaborates closely with MINAGRI, MoE, MININFRA and MINALOC. While this arrangement is adequate for the overall coordination of the Programme, implementation of field level activities should be carefully analysed. Eventually, a decentralized approach at provincial level could be considered to promote sub-national stakeholder participation, as well as partnerships with private sector and civil society. Such a decentralization could be used to

build the capacity of regional structures to coordinate in future REDD+ / SFM projects and to strengthen the use of participatory approaches.

The institutional landscape is very complex. The new Ministry of Lands and Forestry seems to have good development potential but agroforestry is dealt with by the Ministry of Agriculture (so is forestry research?). Climate change is with FONERWA. Good collaboration is thus needed to implement the FIP program, thus also the greatest risk for successful implementation of the FIP is poor coordination.

I. Poverty reduction	

Poverty reduction is assumed to take place because of investment activities to support SMEs in the natural and planted forests and agroforestry value chains. To hold true, such an assumption requires identifying local poverty reduction approaches that have significant transformative potential for achieving impact on livelihood assets for the poor. The Programme Document does not provide any details on how pro-poor priorities and targeting criteria will be determined.

In the TAP's view, the FIP document should be complemented by a short analysis on how multi-sectoral approaches can be articulated with its program activities to achieve poverty reduction for farming families with small landholdings or how gender analysis will be used for poverty reduction strategies. Main entry point for this is making sure that poor people get alternatives and do not waste their scarce resources of land and labour using poor technologies that will not bring them out of poverty. Agricultural intensification in Rwanda will mean that on unsustainable locations subsistence agriculture must find valuable alternatives. For such situations, it will be crucial to create employment through *inter alia* restoration, rehabilitation and tree planting and in the improvement of the wood supply chain efficiency.

J. Cost effectiveness of proposed investments	Not rated

At this stage, it is too early to assess cost effectiveness. Assessing the likelihood that the programme will be cost effective depends on the validity of the information on the IRR values that are provided in Table 11. Budget figures are presented in a very general way and based on the information, it is not possible to reasonably estimate cost effectiveness.

Part II: Compliance with the investment criteria of FIP

Comment on whether the investment plan complies with the criteria specific for FIP (see TORs).

(1) Complies with the principles, objectives and criteria of the FIP as specified in the design documents and programming modalities.

FIP principles:

In addition to the Governance Framework of the Strategic Climate Fund (SCF), the principles (i) to (vi) apply.

(i) National ownership and national strategies
Overall the proposal fits in the wider REDD+ strategy of the country. It serves many purposes when implemented and is well complementary to other programs that address LULUCF issues. The questions remain if the proposed technical measures can be implemented once the main financial and advisory support is not given anymore.
(ii) Contribution to sustainable development
Overall, the proposed FIP of Rwanda clearly has the objective to contribute to sustainable development. However, this is not always clearly stipulated. E.g. Management arrangements do not seem to be particularly gender–sensitive; also, it is not shown how local communities will be represented in the Steering committee and in the Programme coordination mechanisms at sub-national levels. A better guidance should be formulated for the elaboration of a consultation plan to ensure effective participation of stakeholders.
(iii) Promotion of measurable out-comes and results-based support
The Program document overall should provide measurable indicators for the outcomes and impacts. This is important to articulate outcomes and impacts with SMART indicators. The TAP reviewer proposes that a program log frame be complemented in the further development of the projects, once the FIP overall program is approved. For all the three projects, complete logical frameworks where details on indicators linked to the various result levels should be provided. In the full elaboration of the project, management indicators need to be provided to track project expenditure and management mechanisms. Also, the future detailed project formulation should focus on outcome and impact indicator formulation, the description of data collection instruments and responsibilities.
(iv) Coordination with other REDD efforts
As the document clearly outlined, the FIP proposal is aligned to the FCPF readiness work and complementary actions by other donors. Also, the INDC of Rwanda refers to the work that the FIP program intends to realize.
(v) Cooperation with other actors and processes
SPCR is the main current parallel process but FIP also enmeshes with other policies and strategies. Overall well described in the document, however, the concrete collaboration measures when implementing the 3 FIP projects still need to be formulated and put into action with other actors and processes, particularly at local levels.
(vi) Early, integrated and consistent learning efforts
Have been integrated in the program through a proposal to develop extension advice, including Farmer Field Schools (Box 6, page 39). Demonstration is one of the main elements here.

FIP Objectives: *Providing up-front bridge financing for readiness reforms and public and private investments identified through national REDD readiness strategy building efforts, while taking into account opportunities to help to adapt to the impacts of climate change on forests and to contribute to multiple benefits such as biodiversity conservation, protection of the rights of indigenous peoples and local communities, poverty reduction and rural livelihoods enhancements.*
a) To initiate and facilitate steps towards transformational change in developing countries forest related policies and practices[52]
The approach for transformational change is clearly linked to the "enhancement of sink" agenda in REDD+, increased forest and tree cover serves multiple development purposes, including securing livelihoods and sustainable landscape. However, in many ways, REDD+ as an overall strategy based on counting t CO2 reduction is not relevant to Rwanda. National GHG emissions at 0.65 T/capita per an are overall insignificant globally. More crucial are the application of adaptation measures in forestry and increased resilience for social systems and ecosystems that are much more important. The document makes references to some basic figures on the mitigation that will arise from the FIP interventions, based on detailed analysis in the Gicumbi pilot project that has been submitted to the GCF.
b) To pilot replicable models to generate understanding and learning of the links between the implementation of forest-related investments, policies and measures and long-term emission reductions and conservation, SFM & the enhancement of carbon stocks in developing countries
The strategic approach of this FIP proposal got inspired by the "Sawlog Production Grant Scheme in Uganda" (see reference list), an EU funded initiative in the forestry sector in Uganda, whose general objective is to increase rural incomes through commercial tree planting by private sector actors and local communities in Uganda, and at the same time help to mitigate Climate Change effects through intensive afforestation. A study tour to Uganda has been organized to learn from that experience. The proposed FIP will address all these aspects in its own context, provided Rwanda can deliver a sound, well-coordinated delivery structure (capacities need to be considered).
c) To facilitate the leveraging of additional financial resources for REDD, incl through a possible UNFCCC forest mechanism, leading to an effective and sustained reduction of deforestation and forest degradation, thereby enhancing the sustainable management of forests

[52] This should be done through
(i) serving as a vehicle to finance investments and related capacity building necessary for the implementation of policies and measures that emerge from inclusive multi-stakeholder REDD planning processes at the national level;
(ii) strengthening cross-sectoral ownership to scale up implementation of REDD strategies at the national and local levels;
(iii) addressing key direct and underlying drivers of deforestation and forest degradation;
(iv) supporting change of a nature and scope necessary to help significantly shift national forest and land use development paths;
(v) linking the sustainable management of forests and low carbon development;

Per the recent WB mission report in September 2017, the FIP funding will include finance required for Rwanda to have it R-PP approved and complete its National REDD+ Strategy and its Reference Emissions Level. It is further noted that the proposals will optimize synergy and coherence with PPCR programme and identify connection points for additional funding from other donors. Indicative financing is: FIP – US$ 30 m; MDBs – US$ 20 m; GCF – US$ 30 m; private sector – US$ 20 m; and 10% of total added by Government of Rwanda.

See also FIP programming: https://www.climateinvestmentfunds.org/country/rwanda/rwanda-fip-programming

d) To provide valuable experience and feedback in the context of the UNFCCC deliberations on REDD

Rwanda is a good example of how REDD+ and the fixation with mitigation can divert attention away from adaptation and improved resilience. Given the costs of MRV in a country with a highly fragmented forest landscape and relatively forest carbon stocks, the price of carbon (US$5 per ton for REDD+) is far too low to make it worthwhile trying to sell it. But by focusing on the effective outcomes of enhancement of carbon sinks for the national GHG accounting and the co-benefits related to environmental and livelihood issues, REDD+ has certainly helps focusing minds on the necessity of restore forests, agroforestry and planting trees in sustainable landscapes.

FIP Criteria (FIP design document, additions as per FIP Investment Criteria and financial modalities: *Identify the theory of Change behind the proposed interventions (projects) identified and how they contribute to the overall programmatic approach. Consider how the IP can also effectively meet criteria set by other funding sources, especially the Green Climate Fund, FCPF and Biocarbon Fund.*

a. Climate change mitigation potential

The climate change mitigation potential has been addressed. An important planned impact is reduced GHG emissions from land uses. Per the elements provided in the ToC, this will be achieved through reduced forest emissions (improved wood using efficiency) and enhancing carbon stocks in forests and plantations (planted trees, increased forest productivity, agroforestry). However, the ToC does not clearly identify the pathways for realizing the climate change mitigation potential, nor the key assumptions that form the basis for that ToC.

b. Consistency with FIP objectives and principles

The proposal is consistent with the FIP objectives. The document would gain on clarity if all projects would be presented with an idea on the theory of change and a log frame.

c. Drivers of deforestation and forest degradation

The investment proposal is part of an overall coordinated national effort on land and land use planning. In this regard, while the FIP focuses on enhancement of sinks, DD is addressed holistically by other programs (including protection of national parks).

d. Inclusive processes and participation of all important stakeholders, including indigenous peoples and local communities (Annex 2 of the report).

The document provides sufficient and clear information on the consultation and stakeholder engagement, including local communities

e. Demonstrating impact (potential and scale)	
The three implementation projects clearly focus on demonstrating impacts (including "technical packages"). It is stated that demonstration is the major tool to reach farmers and woodworkers.	
f. Forest-related governance	
The investment program proposed does not focus on governance issues (except of course the cross-sectoral approach at the level of territorial planning), but the program complements wider forest governance efforts undertaken by other programs (as well demonstrated in the document). Due to this obvious complementary approach, forest-related governance issues are integrated in the overall performance assessment to ensure measurable outcomes.	
g. Safeguarding the integrity of natural forests	
Safeguarding the integrity of natural forests in larger forest tracks is not in an objective of the proposed programme, but sufficient reference has been made in the document that small islands of natural forests will be regarded with special care.	
h. Partnership with private sector	
Not directly relevant for sub-projects 1 and 2, but for project 3 in respect to the value chain of agroforestry products and woodfuel. Sufficiently included in the proposal at the current stage.	
i. Cost effectiveness, incl. economic and financial viability	
Cannot be assessed with the information at disposal. Overall, the financial package seems to be more than sufficient considering the possible weak absorption capacity of national project implementing agencies. Some questions arise on the absorption capacity of the Rwandan forest service to manage such relatively large-scale projects, considering the forestry governance short comes listed on page 27.	
j. Capacity building	
Capacity building efforts are proposed in the framework of all three projects and all major sub-components, addressed to a to the key target groups	

Additional criteria FIP Investment Criteria and financial modalities:		
k. Implementation potential		Good implementation potential overall under the condition that the forest service and linked stakeholders have sufficient support to acquire the skills needed for effective extension work. The FIP addresses national and local concerns in respect to territorial planning. However, it needs to be clearly stated that investment in agroforestry and plantation forestry are long-term in nature and stable governance, capacitated institutions and broader sustainable development approaches in the rural domain are needed to guarantee success
l. Integrating sustainable		The core element in this proposal when formulating as a REDD+

development (co-benefits).		strategy is enhancement of sinks. Enhancement of sinks as formulated in the FIP proposal has a strong livelihood focus on livelihoods (fuelwood, timber for housing, agroforestry). Thus, the co-benefit element is an essential outcome of the proposed FIP.

(2) Assessment towards the FIP results-framework

The FIP document developed on the Results framework (Chapter 6.5, page 52) which was constructed around the overarching FIP results framework. One critical important point is that there is a strong emphasis on quality within this as well as the quantitative indicators. Unless Rwanda achieves high quality results, the FIP support will not be transformative.

Results	*Indicator*	*Comments*	*Score*
C1 Reduced pressure on forests	*a) Change in hectares (ha) deforested in project/program area*	Measurable, but not directly relevant as the project focuses on replacement of existing low-productive plantations and increase of agroforestry areas	
	b) Change in hectares (ha) of forests degraded in project/program area	Measurable, but only in the long term as trees need time to grow	
	c) Percentage (%) of poor people in FIP project area with access to modern sources of energy	Measurable, directly and should be indicated in the final version of the proposal	
	d) Non-forest sector investments identified and addresses as drivers of deforestation/degradation	Improvement of agriculture, wood use and markets. Addressed and measurable	
C2. Sustainable management of forest and forest landscapes to address drivers of deforestation and forest degradation	*a) Preservation of natural forests integrated in land use planning process*	Only in regards to small remaining forest blocks, measurable	
	b) Evidence that laws & regulations in project/program areas are being implemented, monitored and enforced and that violations are detected, reported and prosecuted	Not directly relevant, can be monitored however	
C3. An institutional and legal/ regulatory framework that supports sustainable management of forests and protects the rights of local	*a) Evidence that the legal framework (laws, regulations, guidelines) and implementation practices provide for non-discriminative land tenure rights and land use systems & protect the rights of indigenous peoples and local communities (women & men)*	Need particular attention with emphasis on projects 1 and 2. Land tenure rights need to be handled with the respective ministries (agricultural land and forest land is concerned). Can be monitored	
	b) Evidence that a national land use plan exists and progress is	In conjunction with wider governance issues	

communities and indigenous peoples	*made to secure the tenure and territorial rights to land and resources of forest-dependent stakeholders, including indigenous peoples and forest communities*		
C4. Empowered local communities and indigenous peoples and protection of their rights	*a) Increase in area with clear recognized tenure of land and resources for indigenous peoples and local communities (women and men)*	Not made evident yet; here some concrete measurable results should be formulated	
	b) Level and quality of community and indigenous peoples participation (women and men) in decision making and monitoring concerning land use planning, forest management, and projects and policies impacting community areas		
	c) Improved access to effective justice/ recourse mechanisms	Not addressed in the proposal. The question is if for the planned investment, a sort of a complains mechanism could be integrated in the proposal (as there might be hard decisions on land use implied in some of the measures proposed (e.g. replacement of unsustainable agriculture by plantations)	
C5. Increased capacity to plan, manage and finance solutions to address direct and underlying drivers of deforestation and forest degradation.		Depends on skills development of forest services and other stakeholders. Considered.	
C6. New and additional resources for forest projects	Leverage factor of FIP funding; $ financing from other sources (contributions broken down by governments, MDBs, other multilateral and bilateral partners, CSOs, private sector)	Bilateral projects (e.g. Belgium on seed trees and others) are described in the document. Once the 3 projects are finally formulated, cross-collaboration in between them should be defined and made measurable	
C7. Integration of learning by development actors active in REDD+	Number (#) and type of knowledge assets (e.g., publications, studies, knowledge sharing platforms, learning briefs, communities of practice, etc.) created and shared	Development of training, guidelines and material, measurable	

Part III: Conclusions and Recommendations

Overall assessment of the Investment Proposal

In the opinion of the independent TAP reviewer, the overall programme proposal, including to organize the work in three projects is sound, complementary to other initiatives that support REDD+ and in line with the general outline of forest and climate strategy of Rwanda (in the INDC). Focusing on the reviving of a formerly well-established silvicultural support system with seed bank and seed center, restoring lost carbon pools and supporting new realizations in planted forests and agroforestry is a feasible approach in the time frame of a FIP.

There is however not enough clarity for the TAP reviewer regarding three major aspects:

- There are references in the FIP Program document and in the recent World Bank supervisory mission that the "FIP be aligned with the R-PP", as it is the only REDD+ document produced by Rwanda. Also, it is said that "the R-PP is being finalized but has not yet been submitted". As Rwanda does not participate in FCPF nor in UN-REDD there is no transparency and reference on such document that is an important requirement when considering a FIP program financing.
- The funding of the implementation of the 3 projects. If reference to GCF is made, clarity should be given on how the proposed project will be submitted as GCF asks for specific requirements for project formulation and submission. Also a clear table should be provided on who is funding what.
- An important aspect is the monitoring of the direct outputs of the FIP, particularly at the level of increased carbon stocks through tree planting, forest plantations and agroforestry. The Programme Document mentions that FAO has been supporting the Forest Monitoring Systems and national Measurement, Reporting and Verification (MRV) based on the regional approach for the Congo Basin Countries. However, it does not provide sufficient information on how this is done and on the technical capacity of the RWFA to implement forest monitoring systems and to accurately measure CO_2 emissions reductions. The TAP reviewer recommends to consider the outputs of the proposed FIP program in such MRV system and thus there is a need to provide sufficient information in the technical capacity to implement forest monitoring systems, and, if considered as not sufficient, capacity building efforts been included for monitoring tree planting and agroforestry realizations.

Overall, the reviewer assessed a total of 47 criteria and indicators (out of which one indicator was not scored) with the following overall scoring:

36	The criteria and/or indicator has been generally met and there is no need for any revision or larger complement at this stage
10	The criteria and/or indicator is partially met, it is recommended to relook at some of aspects that need further clarification
-	The criteria and/or indicator is partially met and need to be further developed

Besides the recommendations formulated in the various sections of the assessment template, the following general recommendations could enhance the quality of the investment plan:

- Clearly spell out that good collaboration between the ministries dealing with forestry, agriculture and climate change is crucial to implement the FIP program. Lack of collaboration is also the greatest risk for successful implementation of the FIP is poor coordination
- Improve the Theory of change framework by structuring it per four major pathways and respective outcomes. The improved ToC should be the basis for the design of the three projects and for presenting the Logframe. For any future GCF project support such logic is needed
- Prepare a log frame in the Final version of the FIP document that shows how the 3 projects are composed together in a programmatic approach over the 6-years timespan of the FIP. Make evident that the FIP is complementary to wider approach on forests and climate change.
- Better identify local poverty reduction approaches that have significant transformative potential for achieving impact on livelihood assets for poor by the proposed projects of the FIP.
- Clearly develop in the three subprojects on skills building at all levels in forestry department and other stakeholders so that people can effectively advice, supervise, and support management of project outputs in accordance with sound technical practices in both silviculture and value chain development.
- Provide more detailed information of what will be the nature of the partnerships with the civil society and the private, and what will be the role of NGOs in the implementation of the projects
- Further review lessons learned from past forestry projects and activities and forestry research and how they could inform the planning and implementation of this programme.

References

Main document reviewed: Forest Investment Plan Rwanda 15 October 2017.

Additional documents consulted:

- CIF (2014) Linkages between REDD+ Readiness and the Forest Investment Program. CIF Learning.
- FIP Design Document (July 2009)
- FIP Investment Criteria and Financing Modalities (June 2010)
- FIP Operational Guidelines (June 2010)
- FIP Results Framework (May 2011)
- FIP Revised procedures for the preparation of independent technical reviews of the FIP Investment Plans (March 16, 2016)
- World Bank (April 2016): World Bank Group Forest Action Plan FY 2016-2020. Focusing on Sustainable Forestry and Forest-Smart Intervention
- AIDE MEMOIRE PILOT PROGRAM FOR CLIMATE RESILIENCE AND FOREST INVESTMENT PROGRAM RWANDA JOINT TECHNICAL MISSION AUGUST 28 – SEPTEMBER 1, 2017 https://www.climateinvestmentfunds.org/sites/default/files/meeting-documents/ppcr_fip_rwanda_aide_memoire_techncial_mission_september_19_2017.pdf
- Uganda EU project : https://ec.europa.eu/europeaid/action-document-sawlog-production-grant-scheme-iii-uganda_en

ANNEX 1: Additional Remarks to the Theory of Change of the proposed FIP Program overall

The TAP reviewer recognizes the overall effort made in explaining the technical issues that lead to transformational change when effectively applied. Also, the 3 subprojects are clearly defined and well described in their proposed change agenda.

Nonetheless, at the level of the FIP program overall, the TAP reviewer recommends to **define goal and outcomes based on the FIP design guidelines** and the country context, and clearly outline **pathways allowing to reach the outcomes.** Based on the FIP guidelines, the overall objective, which is missing in the proposed Theory of Change, is "reduced pressure on forest ecosystems". The long-term outcomes are: (i) reduced GHG emissions from deforestation and forest degradation; enhancement of forest carbon stocks; (ii) reduced poverty through improved quality of life of forest communities; (iii) reduced biodiversity loss and increased resilience of forest ecosystems to climate variability and change.

To achieve these long-term outcomes, the intermediate results are: (i) reduced deforestation and forest degradation; (ii) increased direct management of forest resources by local communities; (iii) improved enabling environment for REDD+ and sustainable management of forests; (iv) access to predictable and adequate financial resources, incl. results-based incentives for REDD+ and sustainable management of forests.

These **intermediate results could constitute a basis for planning backward** (i.e. from outcome to activities) the pathways that allow reaching the long-term outcomes.

It is further recommended that the ToC be completed by a narrative description that would help to understand the pathways to achieving transformational impacts. The narrative of that could read as follows: *"The Programme's ToC for transformational impact is that reduced deforestation and forest degradation, increasing direct management of forest resources by local communities, improving enabling environment for REDD+ and SFM, and access to predictable and adequate financial resources, incl. results-based incentives for REDD+ will contribute to reduction of GHG emissions from forests, to reduction of poverty through improved quality of life of local communities, and to reduction of biodiversity loss and increased resilience of forest ecosystems to climate variability and change*".

Response to Comments from Independent Review of Rwanda FIP

The constructive and comprehensive comments from the Independent reviewer are much appreciated and have led to substantial improvement of the document. The changes made in response to comments which required action are noted in the table below.

Independent Reviewer Comments	Changes made
Section B – page 3 The proposal could be further strengthened by reflecting more on the current planted area situation with regards to species used for different objectives, land ownership, users' needs, and forecasts of these needs. In Rwanda, an intensive and technically well elaborated rehabilitation, agroforestry and reforestation programme has been implemented up the mid-1990 over more than 20 years and context-related information on planting/land rehabilitation approaches could be evaluated when relaunching a science-based FIP programme (particularly for projects 1 and 2. Also, the tensions between the twin goals of achieving rural poverty reduction outcomes and enhancement of sinks could be further addressed. Such analysis is particularly important in the density populated country with scarcity of arable land and where available forest resources are insufficient to cover wood fuel needs in rural and semi-urban areas (as rightly emphasized in the document).	More background and Box 2 on this now included noting the loss of records and knowledge and the need to refine recommendations to take account of both climate change and the varying needs of different users: site-user-species matching. Additional information added to Annex 6
Section C – page 4 The Programme Document does yet not fully demonstrate how the proposed FIP and each one of the three proposed projects will initiate the transformative impact. The theory of change (ToC) that is provided does yet not sufficiently map the pathways of change from the Programme outputs to the expected outcomes, up to the intended impact. Table 16 on page 55 should be clearer in respect to the drivers of impact and the assumptions on technical, social and institutional actors who interact along the causal pathways and who drive or impede transformative impact (see additional remarks and suggestions made in Annex 1).	ToC (now Table 18) revised to accommodate all the comments relating to give a clearer view of what is proposed, why and how it will lead to transformative change. Impact column bolded to show clearly coherence with FIP Logic Model. Key assumptions added (Table 19) plus Problem and Solution analyses (Tables 20 and 21). Written overview added as Section 6.11
Section D – page 4 It is understood from the reading of the Programme Document that prioritization of investments is in line with the five challenges that are identified under paragraph 45. These challenges focused on policies and the regulatory provisions. They do not include other important challenges such as: (i) Rural poverty which is a powerful driver of deforestation and degradation in the context of Rwanda; (ii) Capacity of local communities' institutions to ensure access to the benefits of REDD; (iii) Governance mechanisms that ensure the equitable distribution of such benefits among all relevant stakeholders and within local communities; (iv) Mainstreaming gender in the Programme, particularly in the benefits of REDD. The Theory of change as presented in Table 16 does not reflect how these challenges are addressed.	New para added (now para 50, Section 3.2), Text added to ToC and related tables including gender issues under Activities, Outputs and Outcomes. Changes made in ToC also edited in to section 10 of Rwanda FIP Summary, page xiv Box 9 added on gender strategies in new Section 6.7, with acknowledgement to WB gender consultant. Box 10 added to stress interlinkage of physical and social components, latter including gender and marginalised groups
Generally, the three project Concept Notes address the key priorities for the forestry/ agroforestry sector but success will only accrue if the parallel intensification of agriculture is also effectively delivered within a framework of sound land use planning (see Box 3, page 29 these draft guidelines need to be implemented). The link to agricultural intensification should accrue through the SPCR, which is in development concurrently with FIP.	Importance of bringing LUP GLs into use noted in Section 6.10 and added to ToC Assumptions, Table 19. Also para 159 in Section 6.11

Independent Reviewer Comments	Changes made
In the further preparation of the FIP, the program should develop on which relevant lessons could be learned from research and development projects in the areas of silviculture of indigenous and exotic species, agroforestry, and restoration of degraded lands. *E.g.* Annex 6 could be complemented with a list of references on relevant experiences in the country. It can also be noted that under the item "Commercial Timber Species – Silvicultural Requirements", the Programme Document includes several exotic species for which there is not enough experience to justify scaling up their use in the country, *e.g. Khaya anthoteca, Entandrophragma cylindricum, Entandrophragma utile*.	New section 1.3 added on plantation history with more detail In Annex 6. *E cylindricum* and *E utile* deleted but *Entandrophragma excelsum* and *Milicia excelsa*, both of which are indigenous, added. *K anthotheca* (and *K senegalensis*) retained as good results in Rwanda. Additional references added - in Annex 6
The Programme Document mentions that the achievements of the Programme will be monitored, but it does not outline a sound M&E system to monitor the results and track progress towards achieving the objectives. The M&E responsibilities still need to be defined as the data sources and data collection instruments for the M&E. The Programme Document provides the results framework and respective indicators under sub-chapter 6.5. It is understood by the reviewer that a Log frame will be added in the final version of the FIP that can serve as a basis for M&E in addition to guiding the tracking of delivery.	GCF CNs under preparation and will be available in parallel with FIP document Paragraph 155 added to Section 6.8 on scope of M&E system noting comprehensive statistical data already available as well as forestry information. Scope and detail of M&E system will have to be decided by the project appraisal team.
Section E – page 5, last sentence However, the document does not provide the kind of deliverables that are expected from stakeholder consultations that will take place during the implementation phase.	Cross reference to Section 2.7 given in Section 6.2, all three projects are fully coherent with the results from the field consultation exercise
Section F – page 5, second paragraph With regards to gender, the Programme Document provides detailed descriptive information on gender dimension in the legal and policy context in the country, and in the context of forest management (Box 5). However, no gender analysis is presented or referenced, and the Program's ToC does not integrate gender mainstreaming in the design. It is of course recognized here that gender is identified among the crosscutting issues under the bullet point "Support for Gender Equity which allows involvement of women and youth in forest management and conservation"; however, the programme document does not define explicit gender equality or women empowerment related activities, outputs or outcome. Here some additional explanation would be of use.	New section 6.6 added on role of CSOs. Re gender, see response to review section D above

Independent Reviewer Comments	Changes made
Section I – page 6 Poverty reduction is assumed to take place because of investment activities to support SMEs in the natural and planted forests and agroforestry value chains. To hold true, such an assumption requires identifying local poverty reduction approaches that have significant transformative potential for achieving impact on livelihood assets for the poor. The Programme Document does not provide any details on how pro-poor priorities and targeting criteria will be determined. In the TAP's view, the FIP document should be complemented by a short analysis on how multi-sectoral approaches can be articulated with its program activities to achieve poverty reduction for farming families with small landholdings or how gender analysis will be used for poverty reduction strategies. Main entry point for this is making sure that poor people get alternatives and do not waste their scarce resources of land and labour using poor technologies that will not bring them out of poverty. Agricultural intensification in Rwanda will mean that on unsustainable locations subsistence agriculture must find valuable alternatives. For such situations, it will be crucial to create employment through *inter alia* restoration, rehabilitation and tree planting and in the improvement of the wood supply chain efficiency.	New section 6.4 added on Rwanda approach to securing poverty focus and prioritisation of employment opportunities for poorest sectors of society Para 145 added to Section 6.4 to cover non-direct employment benefits This aspect will need to be given more detailed analysis during appraisal
Section J – page 6 At this stage, it is too early to assess cost effectiveness. Assessing the likelihood that the programme will be cost effective depends on the validity of the information on the IRR values that are provided in Table 11. Budget figures are presented in a very general way and based on the information, it is not possible to reasonably estimate cost effectiveness.	New section 4.5 on cost effectiveness giving rationale for costs and programme size and noting this will need to be considered in more detail during appraisal
Part II: Compliance with the investment criteria of FIP	
(i) – page 7 last sentence The questions remain if the proposed technical measures can be implemented once the main financial and advisory support is not given anymore.	Note comments on sustainability of Uganda SPGS in Box 12
(ii) - Overall, the proposed FIP of Rwanda clearly has the objective to contribute to sustainable development. However, this is not always clearly stipulated. E.g. Management arrangements do not seem to be particularly gender–sensitive; also, it is not shown how local communities will be represented in the Steering committee and in the Programme coordination mechanisms at sub-national levels. A better guidance should be formulated for the elaboration of a consultation plan to ensure effective participation of stakeholders.	New paragraph added under Figure 9 on community engagement in delivery through Steering Committee Figure 9 redrawn to show feedback and linkages to districts and beneficiaries
(iii) - The Program document overall should provide measurable indicators for the outcomes and impacts. This is important to articulate outcomes and impacts with SMART indicators. The TAP reviewer proposes that a program log frame be complemented in the further development of the projects, once the FIP overall program is approved. For all the three projects, complete logical frameworks where details on indicators linked to the various result levels should be provided. In the full elaboration of the project, management indicators need to be provided to track project expenditure and management mechanisms. Also, the future detailed project formulation should focus on outcome and impact indicator formulation, the description of data collection instruments and responsibilities.	Agreed, the Logframe will be developed by the project appraisal team and will draw on the very useful guidance given.
FIP Criteria	

Independent Reviewer Comments	Changes made
a – page 9, last sentence However, the ToC does not clearly identify the pathways for realizing the climate change mitigation potential, nor the key assumptions that form the basis for that ToC.	See response to Review Section D. Box 10 added in Section 6.11 giving overview of pathways and their interdependency
C1 c – page 12 Percentage (%) of poor people in FIP project area with access to modern sources of energy	Baseline information provided in new section 6.9
C4 a – page 12/13 Increase in area with clear recognized tenure of land and resources for indigenous peoples and local communities (women and men)	Importance of closely monitoring this noted under safeguards in Concept Notes 1 and 2
C4 c- page 13 Improved access to effective justice/ recourse mechanisms	Suggested conflict resolution process linked to experience from DGM mechanism proposed para 171, section 7.2.2
Part III: Conclusions and Recommendations	
Three bullet points listed on page 14:	
There are references in the FIP Program document and in the recent World Bank supervisory mission that the "FIP be aligned with the R-PP", as it is the only REDD+ document produced by Rwanda. Also, it is said that "the R-PP is being finalized but has not yet been submitted". As Rwanda does not participate in FCPF nor in UN-REDD there is no transparency and reference on such document that is an important requirement when considering a FIP program financing.	R-PP document is in process of submission, a copy of the plan can be made available together with the final FIP document New para 103 in Section 5.3
The funding of the implementation of the 3 projects. If reference to GCF is made, clarity should be given on how the proposed project will be submitted as GCF asks for specific requirements for project formulation and submission. Also a clear table should be provided on who is funding what.	This has been done
An important aspect is the monitoring of the direct outputs of the FIP, particularly at the level of increased carbon stocks through tree planting, forest plantations and agroforestry. The Programme Document mentions that FAO has been supporting the Forest Monitoring Systems and national Measurement, Reporting and Verification (MRV) based on the regional approach for the Congo Basin Countries. However, it does not provide sufficient information on how this is done and on the technical capacity of the RWFA to implement forest monitoring systems and to accurately measure CO2 emissions reductions. The TAP reviewer recommends to consider the outputs of the proposed FIP program in such MRV system and thus there is a need to provide sufficient information in the technical capacity to implement forest monitoring systems, and, if considered as not sufficient, capacity building efforts been included for monitoring tree planting and agroforestry realizations.	Paragraph 103 added in Section 5.3 in the revised document
General Recommendations – page 15	
Clearly spell out that good collaboration between the ministries dealing with forestry, agriculture and climate change is crucial to implement the FIP program. Lack of collaboration is also the greatest risk for successful implementation of the FIP is poor coordination	This point added to ToC Assumptions (Table 19)
Improve the Theory of change framework by structuring it per four major pathways and respective outcomes. The improved ToC should be the basis for the design of the three projects and for presenting the Logframe. For any future GCF project support such logic is needed	See above response to Section C

Independent Reviewer Comments	Changes made
Prepare a log frame in the Final version of the FIP document that shows how the 3 projects are composed together in a programmatic approach over the 6-years timespan of the FIP. Make evident that the FIP is complementary to wider approach on forests and climate change	See above response to Section D para 4 above
Better identify local poverty reduction approaches that have significant transformative potential for achieving impact on livelihood assets for poor by the proposed projects of the FIP	See above response to Section I
Clearly develop in the three subprojects on skills building at all levels in forestry department and other stakeholders so that people can effectively advice, supervise, and support management of project outputs in accordance with sound technical practices in both silviculture and value chain development	Three sub-projects in progress of development as GCF Concept Notes and comment will be noted
Provide more detailed information of what will be the nature of the partnerships with the civil society and the private, and what will be the role of NGOs in the implementation of the projects	Section 6.6 added
Further review lessons learned from past forestry projects and activities and forestry research and how they could inform the planning and implementation of this programme	New section 1.3 added and more details given in Annex 6

Annex 6 Additional supporting information

Background on tree planting in Rwanda

The people of Rwanda had the tradition of planting some indigenous tree species, e.g. *Ficus thoningii*, *Euphorbia tirucalli*, *Erythrina abyssinica*, *Vernonia amygdalena, Dracaena afromontana,* etc., around household compounds (urugo). However, major reforestation efforts with woody perennials for timber, energy generation or other services, date from 1920 to 1948 (Twagiramungu, 2006). During this colonial period, the target was to afforest one ha of woodland for every 100 persons. By independence in 1962, about 20 000 ha of communal land had been afforested mainly with *Eucalyptus* species. The launching of the Kibuye Pilot Forestry Project (PPF) in 1967, with funding from Switzerland, marked the beginning of true forestry practices in the country. By 1976, PPF had established more than 5 000 ha of forest plantations (FAO, 2002).

The alarming degradation of forest cover and encroachment of natural forests observed during the 1970s due to population pressure, led to the creation by decree of the Rwanda Office of Tourism and National Parks (ORTPN) in 1974 (FAO, 2002). This office was charged to ensure the protection of all national parks and to manage tourist activities in parks. The development of tourism today and effective protection of the remaining natural vegetation in the country can be mainly attributed to the efforts made by ORTPN since its establishment in 1974. In fact, currently almost all the remaining natural forests are under protected area management.

Intensive reforestation efforts were carried out between 1975 and 1990. Actually, 1975 marked a turning point in the practice of forestry in Rwanda, with major reforestation campaign and launching of large scale development projects, each with a major forestry and agroforestry component. The compulsory community works ("*Umuganda"*) launched in 1975, and the annual National Tree Planting Day institutionalised in 1976 helped to mobilise the population for tree planting activities. As a result, the forest plantation area rose from 25 500 ha in 1975 to 247 500 ha in 1989 (FAO, 2002). Major donors to forest projects during the period 1975-1990 included the World Bank, the European Union and Switzerland through the Swiss Development Agency (SDA) - INTERCOOPERATION. The main objectives of most forest plantations established during this period were protection of vulnerable soils against erosion, reduction of pressure over the remaining natural forests and protected areas (buffer zone) and fuelwood supply to an ever growing population (Nduwamungu, 2011).

Forestry activities were interrupted from early 1990s due to the war that broke out in 1990 and culminated in the genocide of the Tutsi in 1994. A number of forests (both natural and plantations) were completely destroyed by displaced people fleeing the war and later on for new settlements for the returning refugees. For example, the Akagera National park was reduced to almost half of its size while the Gishwati forest was almost completely destroyed. Between 1995 and 1999, forestry activities resumed on a modest scale with the resumption of the national tree planting day and of some NGOs and small projects involved in reforestation and tree seedling production. From 1999 onwards, during the annual tree plantation week, the government with the help of several development and forest projects (such as PAFOR, PAREF Be & NL I&II, SEW, KWAMP, RSSP/LWH) distribute seedlings freely to farmers, which has helped to increase the area under private forest plantations as well as number of trees in agroforestry systems.

Nevertheless, weak extension services did not allow for effective follow up of planted seedlings and extremely poor survival rates (Murekezi et al., 2013) as well as unprofessional management of forest plantations (both public and private) leading to extremely low forest productivity have been repeatedly reported in many studies (RNRA/DFNC, 2016). The forestry strategic plan 2017-2021 is set

to address these issues in order to boost forest productivity and ensure sustainable forestry management (RoR, 2017).

Brief review of forest research in Rwanda

Forestry research in Rwanda started with the establishment of the Arboretum of Ruhande in 1933 at the request of the Resident of the Colonial government in an attempt to meet the ever increasing demand for firewood and timber in the then Territory of Rwanda–Urundi. The aim was to establish provenance trials that would guide in selecting fast growing exotic species to disseminate in rural areas in order to supply fuel and building wood. The arboretum has 260 ha and counts about 206 tree species (both exotic and indigenous) of which 69 are Eucalyptus species. After independence, particularly in the 1970s a number of tree seed stands and plantation trials were established throughout Rwanda with the support of Belgium (BTC) and Switzerland (Swiss Development Agency - INTERCOOPERATION).

A Tree Seed Centre (TSC) was established in 1978 with funding from SWISS INTERCOOPERATION and mandated to provide enhancement/training on tree germplasm production, collection, processing, storage and distribution for forestry and agroforestry seeds in Rwanda. Unfortunately after 1994, when the support from SWISS INTERCOOPERATION was withdrawn, the TSC greatly suffered from underfunding and understaffing which hugely reduced its capacity to supply quality tree seeds in required quantities.

Research in Agroforestry started in the late 1970s and early 1980s when ISAR in collaboration with ICRAF launched Agroforestry R4D in Rwanda. The inventory and characterization of agroforestry systems in different agro-ecological zones in the country was then initiated by ICRAF in collaboration with ISAR and a number of on-farm trials were then established throughout the country. Since then, ICRAF in collaboration with ISAR (now RAB) generated a number of agroforestry technology packages disseminated by government development projects and NGOs but adoption of these technologies varies in different land use systems depending on the benefits they offer to the community.

For example, at higher altitudes, the hedgerow AF technologies are adopted because they contribute to soil erosion control while woodlots of *Eucalyptus* are adopted mainly because they provide multiple benefits to the farmer. In mid altitudes, boundary planting, scattered trees on farms and woodlots of *Eucalyptus* are widely adopted while at low altitude, fencing systems, scattered trees and boundary planting are also adopted (Mukuralinda, *et al*. 2015).

At present, although some 150 tree and shrub species have been identified as having potential for different niches on farms in the country, only a few, mainly exotic, species are widely promoted and produced in nurseries, which threatens the long term genetic diversity of tree cover across the country.

Although *Eucalyptus* species are widely planted by farmers, they are seldom adequately managed and deliver only a fraction of their production potential as a result. They are ill-suited for intercropping and there are many alternative species that could and should be much more widely promoted, including through demonstration plots. Poor people should not be encouraged to take up unsuitable technical solutions as these will waste their scarce resources and *increase* their poverty!

Coherent training at all levels

Overall, the FIP investment plan seeks to affect transformational change for the whole forest sector at all scales and ultimately for all engaged. If improvements of such magnitude are to be made and sustained, then coherent training and skills building will required at all levels in the institutions responsible for delivery of the plan and for the future. Training given at, for example, the base level for extension workers must be complemented by appropriate skills building of those responsible for the supervision and management of these people.

Table 31 An example of hierarchical skills

Level	What is implied
Appreciation	Aware of topic and its importance, grasp of basic terminology
Familiarity	Good understanding of the topic, familiar with key literature, able to include and apply basic knowledge in everyday work
Managerial	Able to brief/debrief specialists, monitor and evaluate progress, take decisions on alternative options and approaches
Practitioner	Able to operate efficiently and effectively within the field of the topic on an everyday basis
Expert	Expert knowledge of the topic, able to analyse, interpret and develop new ideas, concepts and directions

Applying this to plants from a tree nursery, buyers and users should have skills at the *Appreciation* level, and be able to separate good and poor quality plants. Extension workers need to be able to undertake and give instruction on all the operations needed in tree nurseries, *Familiarity* level. People at the *Expert* level should be able to develop new techniques and be able to analyse and resolve problems as well as making recommendations for changes to practice relevant for different species, locations and applications. Supervisors and managers need to be in the two levels between these. Each will require complementary but different skills if they are to be able to perform their tasks effectively.

Box 11 Example of critical elements in Standards and Guidelines related to planted trees

- Selection of species must be based on detailed pre-planting site analysis and selection of suitable species on the basis of the capacity of the planter to provide adequate post-planting care
- Species and practices must be selected that are appropriate to the site, especially in respect of slope and soil erosion hazard to optimise soil and water conservation
- Negative biodiversity impact must be avoided or minimised and positive actions to improve biodiversity taken where possible and appropriate
- Plants must be sourced from approved nurseries, operating to a defined standard and using high quality propagative material
- All operations must be carried out in accordance with defined quality standards and at the right time
- Any chemicals used must be legal and applied by people with basic training in their use, disposal of packaging and of water used to clean equipment must be done according to defined safe practices
- No restorable natural forest or woodland should be cleared for tree planting, only that which is too degraded to be restored
- Watercourses should have the natural vegetation on both banks retained to maintain water quality. No tree should be planted closer than 10 metres adjacent to primary flows or closer than 5 metres to secondary flows
- Sites of cultural significance must be identified prior to tree planting and protected from damage or restricted access
- Periodic use such as by itinerant pastoralists should be respected or compensated if extinguished
- Employees must be capable of working safely in any operation that they are required to undertake, with protective clothing and other accessories provided when appropriate

Box 12 Uganda's Sawlog Promotion Grant Scheme

In 1999, the EU funded Forest Conservation and Management Programme in Uganda was coming up to a potential third phase. Uganda's plantation resources, which had been extensive and well managed, had become degraded. It was provide a resource of utility timber which as it matured would reduce pressure on the remaining natural forest resources.

Despite a great need for forest plantation development, there was no capacity within the public forest service in Uganda at that time to undertake this effectively. The Sawlog Promotion Grant Scheme was designed to utilise smaller farmers and groups of individuals to undertake plantation development as an alternative to working through the public sector. The key elements of the Scheme were as follows:

- Individuals could apply for support to plant areas to which they held land or usage title of 100 ha (later reduced to 20 ha). In cases where the applicant was a self-selected group, evidence was required that the association was properly constituted to ensure equity in respect of inputs required and benefit sharing;
- Basic standards for plantation development were promulgated, adapted from those of the British Forestry Commission, to ensure adequate protection of water courses and patches of natural vegetation. Areas with potentially effective natural forest cover were ineligible for support as were areas with significant social use by others, such as pastoralists;
- A simple management plan was required specifying the areas to be planted each year. Up to 15% of the area to be planted each year could be left unplanted for conservation or social use without the level of grant being reduced;
- Species choice was guided by the Silvicultural Classification of Uganda which defined suitable species for each locality. Only plans that were consistent with this classification could be approved;
- All applicants were entitled to free training in all the operations that would be required. In the case of groups, only one or two members needed to be trained provided they were willing to pass on the skills to the others;
- For the first 10 years, nearly all plantations were based on *Pinus caribaea*. As good quality seed was not available in Uganda, seed orchard seed was imported from Queensland in Australia. The seed was raised in nurseries operated by individuals trained by the project and these nurseries were registered and inspected. Plants obtained from non-registered nurseries were ineligible for grant support;
- The level of grant was calculated at the equivalent of US$ 250 per ha. This being roughly half of the direct cost of establishment that would be incurred at that time if it were undertaken by the public forest service;
- The grant was paid in three parts. All payments were made after the work had been done and inspected. No payments were made in advance. If the work was not of sufficient standard, this had to be remedied before payment was made;
- In addition to formal inspections, participants were given free advice on demand and also visited as regularly as possible. In parallel, the programme published guidance material and regular newsletters containing advice. The newsletters were attractively designed and many included competitions to encourage interest;
- Despite the apparently stringent conditions, the applications far exceeded the availability of funds. This resulted in some applicants having to be restricted or rejected;
- Overall, the programme was highly successful in creating effective plantations. Even those who had never planted a tree were able to meet the requirements and to produce high quality plantations;
- A number of lessons for similar schemes can be drawn from the initial experience of the Sawlog scheme:

- In degraded forest reserves, leases were issued by the National Forestry Authority without any consideration of boundary conflicts or the need to develop plantations in accordance with a coherent strategy to minimise protection and roading costs and, in due course, harvesting and sale;
- The grant scheme did not continue to interact, other than informally, with its grantees once the plantation was fully established. A small continuation scheme to assist with protection and crop improvement measures such as pruning and thinning would have been desirable. There may also be a role, as plantations mature, to assist growers with harvesting and marketing, as is done in countries such as Finland where most wood is produced from farm forests. The Uganda Tree Growers Association was well placed to perform such a role.

- Some years into the programme, a study was undertaken on the fiscal treatment of growers in the scheme. In particular, the question of what would happen when the plantations were felled and substantial revenues accrued.
  - This study concluded that the most effective solution, for both growers and the Government, was to remove plantations entirely from taxation. In essence, growers would not be taxed on the revenue from their plantations provided they re-established a plantation of equivalent standard within two years of felling. At the same time, none of the costs of forestry operations could be offset against tax liability;
  - This solution minimises transaction costs for all parties. The country has the economic and developmental benefits from plantation establishment, including a wood supply from well-managed plantations, reduced cutting of natural forests, and at a cost substantially below what would be necessary were plantations to be established using public finance. By 2015, the scheme had supported the establishment of more than 45,000 ha of plantations.
- The latest, third phase, of the scheme, has developed additional modalities to channel support to small farmers working in self-selected groups and also for institutions which are dependent on fuelwood. In both cases, the core requirements to use approved material and operate to defined standards have been kept.

Species for Agroforestry and Restoration

Species list	Rwanda native	N-fix	Soil improver	Fodder	Fuel	Poles	Timber	Overstorey	Medicinal	Apiculture
Acacia abyssinica	Y	Y	L	M	G	N	M	Y	Y	N
Albizia gummifera	Y	Y	G	N	G	L	L	Y	Y	M
Alnus acuminata	N	Y	M	G	L	G	M	N	Y	N
Alnus nepalensis	N	Y	G	M	M	G	M	Y	?	N
Calliandra calothyrsus	N	Y	M	G	G	L	N	N	N	G
Dombeya torrida	Y	N	G	L	L	M	L	N	Y	G
Dracaena afromontana, D steudneri	Y	N	N	N	N	N	N	N	Y	M
Entandrophragma excelsum	Y	N	N	N	L	N	L	Y	Y	N
Erythrina abyssinica	Y	Y	M	G	L	L	L	Y	Y	M
Gliricidia sepium	N	Y	G	G	G	N	M	N	Y	Y
Hagenia abyssinica	Y	N	G	N	G	L	M	Y	Y	N
Leucaena diversifolia	N	Y	G	M	G	M	M	Y	N	?
Maesopsis emenii	Y?	N	L	G	G	L	G	Y	Y	N
Markhamia lutea	Y	N	G	N	G	G	G	N	Y	G
Milicia excelsa	Y	Y	G	M	Y	N	G	Y	N	N
Prunus africana	Y?	N	L	N	G	M	G	N	Y	G
Sesbania sesban	N?	Y	G	G	G	N	N	N	Y	?
Syzigium guineense	Y	N	L	N	M	L	G	N	Y	G
Marginal species										
Terminalia superba	N	N	N	N	L	N	G	Y	N	N

Key	
Yes	Y
No or not relevant	N
Not known or unclear	?
Good	G
Moderate	M
Low	L

Commercial Timber Species – Silvicultural Requirements

Species	Plants/gm seed	Seed Treatment	Seed viability	Polypots?	Stumps?	Nursery season (months)	Mycorrhiza	Plants / Ha	Field Fertiliser	Tending	Pruning required	MAI (normal range)	Timber Rotation	Low Taungya?	Undercrop?	Notes
Pinus caribaea	40	None	Good	Yes	No	4 - 6	Yes	1600	No	Slash	Yes	20 - 35	20 - 30	No	No	
Pinus kesiya	35	None	Good	Yes	No	4 - 6	Yes	1600	No	Slash	Yes	15 - 25	25 - 30	No	No	
Pinus merkusii	40	None	Good	Yes	No	4 - 6	Yes	1600	No	Slash	Yes	15 - 25	20 - 30	No	No	
Pinus oocarpa	25	None	Good	Yes	No	3 - 4	Yes	1600	No	Slash	Yes	20 - 30	20 - 30	No	No	
Pinus patula	50+	None	Good	Yes	No	4 - 6	Yes	1300	No	Slash	Yes	15 - 30	25 - 35	No	No	
Pinus pseudostrobus	35	None	Good	Yes	No	4 - 6	Yes	1300	No	Slash	Yes	15 - 30	25 - 35	No	No	
Pinus tecunumanii	25	None	Good	Yes	No	3 - 4	Yes	1600	No	Slash	Yes	20 - 35	20 - 30	No	No	
Cupressus lusitanica	100	None	Good	Yes	No	5 - 8	Yes	1600	No	Clean, spots	Yes	20 - 30	25 - 40	No	No	
Araucaria cunninghamii	2	None	Very short	Medium	No	8 - 10	Possibly	1100		Clean, spots	Yes	25 - 35	25 - 40	Yes	No	Best on fertile sites
Araucaria hunsteinii	1 - 2	None	Very short	Medium	No	8 - 10	Possibly	1100		Clean, spots	Yes	25 - 35	25 - 40	Yes	No	Best on fertile sites
Eucalyptus cloëziana	70	None	Good	Yes	No	3 - 4	No	1300-1600	Yes	Full	No	25 - 35	15 - 20	No	No	Erratic germination, slow initial growth
Eucalyptus grandis	200	None	Good	Yes	No	3 - 4	No	1300-1600	Yes	Full	No	30 - 40	15 - 20	No	No	
Eucalyptus microcorys	120	None	Good	Yes	No	3 - 4	No	1300-1600	Yes	Full	Possibly	25 - 35	15 - 20	No	No	
Eucalyptus pellita	40	None	Good	Yes	No	3 - 4	No	1300-1600	Yes	Full	Occasional	25 - 40	15 - 20	No	No	
Eucalyptus camaldulensis	150	None	Good	Yes	No	3 - 4	No	1600	Yes	Full	No	12 - 18	15 - 20	No	No	Light crown, semi-deciduous on v. dry sites
Eucalyptus tereticornis	150	None	Good	Yes	No	3 - 4	No	1600	Yes	Full	No	12 - 18	--	No	No	Light crown
Eucalyptus urophylla	100	None	Good	Yes	No	3 - 4	No	1300-1600	Yes	Full	Occasional	25 - 40	--	No	No	

Species	Plants/gm seed	Seed Treatment	Seed viability	Polypots?	Stumps?	Nursery season (months)	Mycorrhiza	Plants / Ha	Field Fertiliser	Tending	Pruning required	MAI (normal range)	Timber Rotation	Low Taungya?	Undercrop?	Notes
Eucalyptus grandis X camaldulensis or *tereticornis*	Cuttings	-	Don't use	Yes	No	3 - 4	No	1300 - 1600	Yes	Full	No	30 - 40	15 - 20?	No	No	Must be vegetatively propagated
Eucalyptus grandis X urophylla	Cuttings	-	Don't use	Yes	No	3 - 4	No	1300 - 1600	Yes	Full	No	30 - 40	15 - 20?	No	No	Must be vegetatively propagated
Maesopsis emenii	<1	Soak	Short	Yes	Possible	6 - 10	No	1100 - 1300	No	Clean, spots	Occasional	10 - 20	30 - 40	No	No	Keep close initially to avoid branching
Grevillea robusta	50	None	Fair	Yes	No	6 - 8	No	2 - 3 m apart	No	Clean, spots	Yes	5 - 10	25+	Possible	No	Better in lines than blocks
Gmelina arborea	1	Soak	Short	Yes	Possible	4 - 6	No	1100	No	Clean	Yes	15 - 30	15 - 25	Possible	No	
Terminalia ivorensis	4	Wet/dry	Limited		Possible	6	No	<300	No	Undercrop	No	7 - 15	25 - 40	Possible	Yes	Self pruning
Terminalia superba	6	None	Limited		Possible	6	No	<300	No	Undercrop	No	7 - 15	25 - 40	Possible	Yes	Self pruning
Cedrela odorata	25	None	Good	Yes	Possible	6 - 8	No	2 - 3 m	No	Clean line	Occasional	7 - 15	25 - 40	No	No	Best Line planted in Natural Forest
Cedrela serrata	25?	None	Good	Yes	?	6 - 8	No	2 – 3 m	No	Clean line	Occasional	7 - 15	25 - 40	No	No	Line plant
Entandrophragma excelsum	30?	None	Short	Large	?	6 - 8	No	<600	No	Clean	Probably	--	45 - 60+	Possible	Yes?	Small plots or lines, not extensive, shade needed
Khaya anthotheca & Khaya senegalensis	36	None	Fair	Large	Yes	6 - 8	No	<600	No	Clean	Probably	--	45 - 60+	Possible	No	Small plots or lines, not extensive
Milicia excelsa	300	Possibly	Fair	Large	Yes, also cuttings	6 - 8	No	<600	No	Clean	Probably	--	45 - 60+	Possible	No	Very hard to establish due to *Phytoloma* gall
Podocarpus latifolius	?	None?	?	Yes	No	8 - 10	Possibly	1600+	No	Clean, spots	Yes	5 - 8?	45 - 60+	No	No	Based on other species of the genus

Commercial Timber Species – Site Requirements

Species	pH	Texture	Infertile sites	Drainage required	Tolerates waterlogging	Tolerates Stony soils	Drought tolerance	Weed tolerance	Fire tolerance	Notes
Pinus caribaea	3.5 +	Light/med	Tolerates	Fair	Occasional	Yes	High	Yes	Some	
Pinus kesiya	3.5 +	Variety	Tolerates	Good	No	Well	High	Yes	Limited	
Pinus merkusii	3.5 +	Light/med	Yes	Good	No	Yes	Fair	Yes	Some	
Pinus oocarpa	3.5 +	Variety	Yes	Fair	Limited	Well	High	Yes	Some	
Pinus patula	4.5+	Light/med	Limited	Good	No	Poorly	Low	Yes	No	
Pinus pseudostrobus	4.5+	Med/heavy	Limited	Good	No	Poorly	Low	Yes	No	
Pinus tecunumanii	3.5+	Variety	Yes	Fair	Limited	Well	High	Yes	Some	
Cupressus lusitanica	5+	Medium	No	Good	No	No	Low	Poor	No	
Araucaria cunninghamii	5.5+	Med/heavy	No	Good	No	No	Low	Limited	No	
Araucaria hunsteinii	5.5+	Med/heavy	No	Good	No	No	Low	Limited	No	
Eucalyptus cloeziana	4.5+	Medium	No	Good	No	No	Low	No	Some	
Eucalyptus grandis	4.5+	Light/med	No	Good	No	No	Some	No	Some	
Eucalyptus microcorys	5+	Medium	No	Good	No	No	Low	No	Yes	
Eucalyptus pellita	4.5+	Light/med	Limited	Good	No	Limited	Fair	No	Limited	
Eucalyptus camaldulensis	4+	Range	Yes	Range	Yes	Yes	Very high	No	Some	
Eucalyptus tereticornis	4+	Range	Yes	Range	Limited	Yes	Very high	No	Some	

Species	pH	Texture	Infertile sites?	Drainage required	Tolerates waterlogging	Tolerates Stony soils	Drought tolerance	Weed tolerance	Fire tolerance	Notes
Eucalyptus urophylla	4+	Med/heavy	Tolerates	Good	No	Limited	High	No	Some	
Eucalyptus grandis X c,t	4+	Range	Tolerates	Range	Limited	Limited	High	No	?	
Eucalyptus grandis X urophylla	4+	Range	No	Good	No	Limited	High	No	?	
Maesopsis emenii	5.5+	Light/med	No	Good	No	No	Low	Some	Little	
Grevillea robusta	5+	Light/med	Tolerates	Good	No	Limited	Medium	Limited	Little	
Gmelina arborea	4.5+	Range	Tolerates	Good	No	Poorly	High	Some	Some	Deciduous
Terminalia ivorensis	5+	Light/med	Yes	Good	Limited	Poorly	Fair	Some	Fair	
Terminalia superba	5+	Light/med	Yes	Fair	Some	Poorly	Limited	Some	Fair	
Cedrela odorata	6+	Light	No	Good	Occasional	Poorly	Low	No	No	
Cedrela serrata	5+?	Light/med	No	Good	No	Poorly	Limited	No	?	
Khaya senegalensis, K anthotheca	5+?	Light/med	No	Good	No	No	Some	Limited	No	
Entandrophragma exceslum	5+?	Range	No	Good	No	No	Limited	Limited	No	
Milicia excelsa	4.5+	Medium	No	Good	No	No	Some	Some?	Some	
Podocarpus latifolius	5.5+	Range	No	Fair	No	No	Low	Limited	No	Based on other species in genus

Commercial Timber Species – Utilisation Potential

3 = Excellent or Easy

2 = Acceptable

1 = Poor or Difficult

0 = Unsuitable or None

Product or attribute →	Specific Gravity	Form, assuming some selection	Saw Timber	Timber quality	Durability	Seasoning	Ease of Preservation	Transmission Poles	Veneer	Plywood	Comments
Species ↓											
Pinus caribaea	0.35 - 0.50	2	3	Utility	0	3	3	1	1	2	Resinous
Pinus kesiya	0.45 - 0.55	2	3	Utility	0	3	3	1	2	2	Resinous
Pinus merkusii	0.45 - 0.55	2	3	Utility	1	3	3	1	2	2	Resinous
Pinus oocarpa	0.45 - 0.55	2	3	Utility	0	3	3	1	1	2	Resinous
Pinus patula	0.38 - 0.50	3	2	Utility	0	3	3	0	2	2	Light timber
Pinus pseudostrobus	0.38 - 0.50	2	2	Utility	0	3	3	0	3	3	Long internodes
Pinus tecunumanii	0.40 - 0.55	3	3	Utility	0	3	3	1	1	2	Resinous
Cupressus lusitanica	0.40 - 0.50	2	3	Utility	1	3	1	0	1	1	May split on nailing
Araucaria cunninghamii	0.50 - 0.55	3	3	Utility	0	3	3	2	3	3	
Araucaria hunsteinii	0.40 - 0.50	3	3	Utility	0	3	3	2	3	3	

Product or attribute →	Specific Gravity	Form, assuming some selection	Saw Timber	Timber quality	Durability	Seasoning	Ease of Preservation	Transmission Poles	Veneer	Plywood	Comments
Eucalyptus cloëziana	0.70 - 0.85	3	3	Interm	2	3	3	3	1	1	Exceptional form, strong timber
Eucalyptus grandis	0.40 - 0.55	3	1	Interm	1	1	3	2	2	2	Can be sawn with care
Eucalyptus microcorys	0.65 - 0.85	3	3	Interm	2	3	3	3	1	1	Timber yellowish some interlocked grain
Eucalyptus pellita	0.70 - 0.85	3	2	Interm	2	1	1	2	1	1	Timber may have interlocked grain
Eucalyptus camaldulensis	0.60 - 0.80	1	0	No	1	1	1	0	0	0	Mainly for domestic use
Eucalyptus tereticornis	0.60 - 0.80	2		No							Mainly for domestic use
Eucalyptus urophylla	0.55 - 0.75	2	3	Interm	2	2	2	2	2	2	Timber qualities not well known
Eucalyptus grandis X c,t		3									Timber qualities not known
Eucalyptus grandis X urophylla		3									Timber qualities not known
Maesopsis emenii	0.38 - 0.50	3	3	Interm	1	3	3	1	3	3	May have poor colour for face veneer
Grevillea robusta	0.50 - 0.65	2	3	Deco	2	2	2	0	3	3	Decorative when quarter-sawn

Product or attribute →	Specific Gravity	Form, assuming some selection	Saw Timber	Timber quality	Durability	Seasoning	Ease of Preservation	Transmission Poles	Veneer	Plywood	Comments
Gmelina arborea	0.35 - 0.50	2	3	Utility	0	3	2	0	2	2	White wood, butt logs have steep taper
Terminalia ivorensis	0.45 - 0.60	3	3	Interm	1	3	0	1	3	3	Timber internationally traded
Terminalia superba	0.48 - 0.65	3	3	Interm	1	3	2	1	3	3	Timber internationally traded
Cedrela odorata	0.35 - 0.45	3	3	Interm	1	3	0	0	3	3	Timber scented
Khaya anthotheca K senegalensis	0.60 – 0.85	2	3	Cabinet	2	3					High value timber
Entandrophragma excelsum	0.45 – 0.55	3	1	Utility	1	3			2	2	Timber unstable
Milicia excelsa	0.55 – 0.75	2	3	Cabinet	3	3					High value timber
Podocarpus latifolius	0.45 – 0.63	1	3	Cabinet		3					High value timber

Annex 7 List of Consultees and Attendees at meetings

Table 32 Consultees and Attendees at validation meetings

No.	Name	Institution	Position
	I. GOVERNMENT INSTITUTIONS		
01	Fatina MUKARUBIBI	MINIRENA	PS
02	Jacob HODARI	MINIRENA	Director of Planning, M&E Unit
03	Marie Chantal UTAMULIZA	MINIRENA	DAF
04	Emmanuel UWIZEYE	MINIRENA	DLEWF
05	David Toovery	MINIRENA	Communication
06	Donat NSENGUMUREMYI	MINIRENA	DMPU
07	Narcisse DUSHIMIMANA	MINIRENA	Lawyer
08	Joseph BUTERA	MINIRENA	Economist
09	Jean Claude NGARUYE	MINIRENA	Geologist Specialist
10	Richard INKINDI	MINIRENA	IT
11	Florien NTEZIRYAYO	MINIRENA	Permits Specialist
12	Dr. Omar MUNYANEZA	MINIRENA/NCA	Water Data Analyst
13	Timothy KAYUMBA	MINIRENA	GEJP Specialist
14	Seth MUHAWENIMA	MINIRENA	Land Specialist
15	M. Josee UWUMUBYEYI	MINIRENA	PRO
16	Damascene KAYIRANGA	MINIRENA	Water Specialist
17	Jeannine UWINGABIRE	MINIRENA	Adm/Assistant
18	Modeste N.TUYISHIME	MINIRENA	Statistician
19	Diane DUSABE BUCYANA	MINIRENA	M&E Specialist
20	Benon KAKA RUTARO	MINIRENA	M&E Officer
21	Jean de Dieu MUNYANEZA	MINIRENA	Sector Planner
22	Anastase RUKUNDABATWARE	MINIRENA	Sector Planning & Coordination Specialist
23	Eng. Coletha U. RUHAMYA	REMA	DG
24	Marie Laetitia BUSOKEYE	REMA	Director/ REPD
25	Faustin MUNYAZIKWIYE	REMA	Director
26	Martine UWERA	REMA	Env. Audit &M. Officer
27	Rachel TUSHABE	REMA	DEEM
28	Prime NGABONZIZA	RWFA	DG
29	Vellen BYANDAGA	RWFA	M&E
30	Felix RURANGWA	RWFA	Director
31	Robert MUGABO	RWFA	Planner
32	Amini MUTAGANDA	RWFA	HoD/Forestry
33	Dismas BAKUNDUKIZE	RWFA	Director FMU
34	Augustin MIHIGO	RWFA	DF/MU
35	Jean Pierre MUGABO	RWFA	DFSU
36	Esperance MUKAMANA	RLMUA	DG
37	Sam BIRARO	RLMUA	M&E Specialist
38	Alex MULISA	FONERWA	Coordinator
39	Bright NTARE	FONERWA	Project Manager
40	Dany RUGAMBA	FONERWA	Communication
41	Jean Baptiste NDAYISABA	FONERWA	Communication
42	Teddy MUGABO	FONERWA	Consultant
43	Nura Suleiman	Pegasys /FONERWA	Consulting Manager
44	Shravya Reddy	Pegasys /FONERWA	Principal consultant
45	John N. SEMAFARA	Meteo Rwanda	DG
46	Jean MUNYARUGERO	Meteo Rwanda	Planning M&E
47	Marie Francoise UWANYIRIGIRA	MINECOFIN	Planner

No.	Name	Institution	Position
48	Frank RUTEHENDA	MINECOFIN	Sector Officer
49	Fred SABITI	MINECOFIN	Technical Advisor
50	Edward KADOZI	CESB	ECS
51	Irene V. Nambi	Water 4 Growth	Coms
52	Jean Baptiste NSENGIYUMVA	MIDIMAR	Director
53	Otis MUSABA	RMB	M&E
54	Jean NTAZINDA	Climate concern	Lead Consultant
55	Jan RIJPMA	UNDP/REMA	Technical Specialist
56	Richard NIYONGABO	NIRAS/MINIRENA	M&E Expert
57	Moses K.NKUBITO	MoD	Plans
58	Ebel Smiolf	Water 4 Growth	TL
	II. DEVELOPMENT PARTNERS		
59	Stephen Rodriques	UNDP	Country Director
60	Reina Otsuka	UNDP	Environment Specialist
61	Javan Vlaar	NL Embassy	1st Secretary
62	Joseph A. BIZIMANA	FAO	Natural Project Coordinator
63	Otto Vianney MUHINDA	FAO	AFAOR/D
64	Jacques Peeters	BTC	ATI
65	Vincent NSABUWERA	BTC	FMBE PM
66	Mikael Bostrom	Sida	Head of Cooperation
67	Theobald MASHINGA	Sida	
68	JMV RUTAGANDA	UNICEF	Wash Specialist
69	JMV RUKUNDO	Vi Agroforestry	Deputy Country Manager
70	Pablo Benitez	World Bank	Sr. Economist
71	Michael Hammond	World Bank	Consultant
72	LABURG GARBD	AFDB	CCCO
73	Paul Walkup	AGRITAF	CC CEAO
	III. NGOs		
74	Vianney John MUREGO	AFDB	Consultant
75	Serge NSENGIMANA	ACNR	Executive Director
76	Jean NDUWAMUNGU	AESA	Consultant
77	Nicolas NTARE	AESA	Consultant
78	Vestine INGABIRE	ACNR	Climate Change
79	Nathan K. TAREMWA	AESA	Consultant
80	Patrick HARDCASTLE	AESA	TL
81	Joseph NKURUNZIZA	ATEDEC	Consultant
82	Jean Chrysostome SEHENE	RECOR	Executive Secretary
83	Jean Pierre HAKIZIMANA	SDHA	CEO
84	Manasse NSHIMIYIMANA	RENGOF	ES
85	Sam KANYAMIBWA	ARCOS	Executive Director
86	Pacifique ISIMBI	ARECO Rwandanziza	Planning
87	Valens DUSHIMIMANA	OHAC: Gorilla Health	Conservation Officer
88	Marie Louise UMUHIRE	TROCAIRE	Project Officer
89	Mwangi Kinyanju	AESA	Consultant
90	Yvette UMURUNGI	COEB	Biodiversity Informatics Coordinator
	IV. PRIVATE SECTOR		
91	Bruce Dunams	ESP-MONICOLN	Consultant

Table 33 Stakeholder consultees met in field

No	Name	Institution	Position in institution
1	NGOGA Telesphore	RDB	Community Tourism Development Analyst
2	KAPLIN Beth	(CoEB) / University of Rwanda	Ag. Director, CoEB and Natural Resources
3	BISANGWA Innocent	MINAGRI	In charge of Agriculture
4	MURENZI NGOGA Augustin	Gakenke District	District Environmental Management Officer
5	UWAMAHORO Triphonie	Gakenke District	JADF Officer
6	KANYETARIKI Evaliste	Gakenke District	Cash Crops Officer
7	HARERIMANA Valens	Gakenke District	DFNRO
8	NUWAGABA Gervais	Gakenke District	DAO
9	SAFARI Jean Baptiste	COTUMU	Project Coordinator
10	NGENDAHAYO Jean	Musanze District	Director of Agriculture IN.R
11	MITALI Morise	Musanze District	Agronomist
12	NGENDAHAYO Jean	Musanze District	Director of Agriculture IN.R
13	NGWIJABAGABO Hyacinthe	Musanze District	Environmental Officer
14	TUYISENGE J. Claude	MUSANZE District	District Cash Crop Officer
15	MFITUMUKIZA J.de Dieu	Musanze District	Field Environmental Officer
16	MUSONI Protais	Musanze District	District Forestry& Natural Resources Officer
17	SEBAREZE Wildebrand Sulaimani	Burera District	Forestry and Natural Resources
18	MUDACOGORA Faustin	Burera District	Agronomist
19	MBATEZIMANA Emmanuel	Burera District	Entrepreneur with carpentry
20	HABYARIMANA Jean Baptiste	Burera District	UMASOC
21	NSHIMIYUMUKIZA Aboubakar	Burera District	Sector Forest Extension Officer/Cyeru
22	NIZEYIMBABAZI Jean de Dieu	Burera District	Director of Agriculture and Natural Resources
23	KAMARIZA Pontient	Burera District	Carpenter
24	NYIRAMAHIRWE Jeanne d'Arc	Burera District	Councillor
25	KABIRIRGI J.M.V	Burera District	Cash Crops and Irrigation Officer
26	NKEZABERA Come	Burera District	Director for Environment and Natural Resources
27	UWASE Vedaste	World Vision-Zero Hunger Project	Field Technician
28	UWIZEYIMANA Emmanuel	World Vision-Zero Hunger Project	Site Coordinator

No	Name	Institution	Position in institution
29	MANIRIHO Alphonse	World Vision-Zero Hunger Project	Field Technician
30	DUSABE Christian	World Vision-Zero Hunger Project	Field Technician
31	NIYONSENGA M. Louise	Rubengera Technical School	School Manager
32	MUHAWENIMANA Calter	Karongi District	Environmental Management Officer
33	HABYARIMANA Eric	Karongi District	District Forest Officer
34	MUNYAMPAMIRA Ildephonse	Nyabihu District	District Forest Officer
35	BANA Mediatrice	Wildlife Conservation Society	Project Director
36	KARANGWA Charles	IUCN	Regional Coordinator - FLR
37	MUNYANGAJU Aloys	Rwanda Mountain Tea Ltd	Monitoring and Evaluation
38	BARAYAGWIZA Joseph	Rwanda Mountain Tea Ltd	Monitoring and Evaluation
39	NIYONGIRA Eugene	ADARWA Cooperative	Manager
40	MUKANKIKO Berence	Nyamagabe District	FONERWA Funded Project Coordinator
41	KABAYIZA Lambert	Nyamagabe District	UNIFED
42	IRADUKUNDA Marcel	Nyamagabe District	JADF Officer
43	UWIMANA Vicent	Nyamagabe District	DFNRO
44	HABIYAKARE Raj Philbert	Nyaruguru District	FNRO
45	HARELIMANA Anselme	Nyaruguru District	District Environmental Officer
46	MBONYISENGE Thomas	Nyaruguru District	Director of Agriculture
47	MUHAYIMANA Nelson	Nyaruguru District	Director of Planning
48	MUTWARASIBO Cyprien	Huye District	V/Mayor, ED.
49	KARANGWA Charles	Huye District	Director of Planning, M&E
50	NKURUNZIZA Thierry	Kamonyi District	DFNRO
51	MPAGARITSWENIMANA Vedaste	Muhanga District	Director of Agriculture & Animal Resources
52	NGUMYEMBAREBE Thaciene	Muhanga District	Director of Agriculture & Animal Resources
53	BIZIMANA Eric	Muhanga District	Director of Planning, M&E
54	RUGEMA Israel	Bugesera	Director Planning, M&E
55	MUKUNZI Emile	Bugesera District	Director of Agriculture and Natural resource
56	MANISHIMWE F. Zacharie	Bugesera District	GIS Professional
57	MUHIRWA Vedaste	Bugesera District	Land Valuator

No	Name	Institution	Position in institution
58	MUGABO Faustin	Bugesera District	Director BDE Unit
59	DUSENGE J.M.V	Nyagatare District	LS and GIS Officer
60	MBONIGABA Jean	Nyagatare District	DFNM
61	NTAMBARA John	Nyagatare District	Employment promotion Officer
62	GASANA Paul	Nyagatare District	PM DEO
63	KWIZERA Alphonse	Kayonza District	Forestry and Natural resources Officer
64	MUHAYIMANA Cyprien	Kayonza District	Director of AANR
65	MBONYUMUKIZA Cyprien	Kayonza District	Director of Infrastructure
66	MUGIRANEZA Thierry	Kayonza District	Director of Planning M&E
67	RUSINE Alphonse	Gasabo District	Land survey GIS
68	IRIBAGIZA M Louise	Gasabo District	TLLM
69	SIMPENZE Thomas	Gasabo District	Planning , M&E
70	NTIYAMIRA Faustin	Gasabo District	Agronomist
71	MUKANGABIRA Patricie	Kigali City	Director of Public Health and environment