

## **Annex 2**

### **Feasibility Study Report**

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**PREFOREST CONGO - Project to reduce greenhouse gas emissions from forests in five departments in the Republic of Congo**

## EXECUTIVE SUMMARY

**Introduction.** In 2017, the Congolese Government, together with the National Designated Authority (NDA) for the Green Climate Fund (GCF), submitted a request for support to the FAO Resident Representative for the development of a GCF project proposal within the context of the REDD+ National Strategy and Investment Plan to support the implementation of its Nationally Determined Contribution (NDC), specifically the reduction of CO<sub>2</sub> emissions from slash-and-burn agriculture caused by agricultural expansion and fuelwood collection, while also contributing to the implementation of climate change adaptation priorities.

Within the context of its Nationally Determined Contribution (NDC), Congo is committed to pursuing low-emission carbon-resilient development in line with global efforts to reduce greenhouse gas (GHG) emissions. **Congo seeks to reduce its GHG emissions by 48% under the business as usual (BAU) scenario by 2025, and by 55% by 2035.** The country's GHG reduction strategy is principally based on its sustainable forest management efforts, particularly the **reduction of GHG emissions from deforestation and forest degradation and increased forest carbon stocks.** According to Congo's NDC, carbon emissions from deforestation represent 81% of the country's total GHG emissions. To reduce its GHG emissions, the Government of Congo developed their national REDD+ strategy, followed by the REDD+ National Investment Framework (NIF) for the period 2018–2025.

Located at the heart of the Congo Basin forests, the Republic of Congo possesses a vast forest area estimated at 23 million ha (69.8% of total land area), including 59,000 ha of planted forests<sup>1</sup>. Despite a relatively low historical deforestation rate estimated at 0.05% (2000–2012), Congo's forests are now subject to **increasing anthropic pressure** to overcome the agricultural production deficit and meet the energy needs of increasing local populations. **Slash-and-burn farming, for agriculture expansion and fuelwood collection is the main direct driver of deforestation and forest degradation in Congo**<sup>2</sup>. The increase in deforestation and forest degradation is more pronounced in the south of the country where the majority of the population lives.

In the south, where the Project will be located, the large majority of the rural population practices subsistence farming as their main economic activity, and more than 80% of the Congolese population depends on fuelwood as their main source of energy for cooking. In Southern Congo, agriculture is mainly practiced by **low-income smallholder farmers** (earning less than USD 2 per day with plots of less than one hectare on average), using rudimentary techniques and limited inputs, which **generate limited yields and soil infertility**. Increased soil infertility as well as increasing demand for crops and fuelwood are pushing smallholder farmers into more fertile forested areas, where the forest land is then converted through **slash and burn for crop production and fuelwood collection**. In fact, the wood needed for the production of timber and fuelwood (firewood and charcoal) is often collected from the trees cleared during slash-and-burn farming, and is expanding in natural forests as well.

Slash and burn is indeed widely used for the expansion of agriculture and wood collection when the access to inputs and secured land is limited. This practice used to be a viable ecological strategy to sustain agriculture as farmers maintained different plots, resulting in a mosaic of plots under cropping and fallow, allowing natural processes of soil regeneration (Bandy et al., 1993; Altieri, 2002). However, increasing population and increased demand for crops and fuelwood, coupled with unsustainable

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<sup>1</sup> Republic of Congo forest cover monitoring report for the period 2014–2016. CNIAP 2019.

<sup>2</sup> Congo REDD+ Strategy (2017)

practices reducing agriculture productivity are disrupting this equilibrium and are making this practice unsustainable as resulting in a **high deforestation rate and increased forest degradation**.

The most important business as usual (BAU) barriers that are perpetuating deforestation and forest degradation through slash and burn in southern Congo include:

- (i) *limited access to improved crop production technology to intensify productivity and quality of crops such as cassava, maize, groundnuts and plantains and to increase soil fertility **in order to reduce the need to clear additional forests** ;*
- (ii) *limited land access and security rights which prevents **a long term investment in low emission crop production***
- (iii) *limited access to a sustainable source of fuelwood which would reduce pressure on natural forest.*
- (iv) *limited access to markets to **increase incomes and invest in low emission crop production***
- (v) *limited access to climate finance for green agroforestry investments which prevents smallholders from accessing and ultimately adopting low-emission technologies that would help them **shift away from unsustainable and high emission practices without the need for additional public finance**;*

With this BAU scenario, Congo believes that its deforestation rate could double in the coming years, mainly due to pressure on the forests. A BAU scenario<sup>3</sup> suggests a sixfold increase in total CO<sub>2</sub> emissions (approximately 34,527 kt CO<sub>2</sub>eq) by 2035, while it would only multiply by 2.7 in a low-carbon scenario. Increased deforestation not only contributes to the country's rising GHG emissions, but also exacerbates the vulnerability of people and ecosystems to climate change.

In order to reduce this trend and improve the livelihoods of the smallholders farmers in Southern Congo, the PREFOREST project will introduce innovative and integrated solutions aimed at increasing carbon sequestration and reduce carbon emissions by addressing the following identified needs:

- (i) **Regenerate degraded areas from slash and burn agriculture and increase soil fertility and crop productivity** for low emission, sustainable and intensive crop production by introducing innovative **agro-forestry practices and natural regeneration**;
- (ii) **Reduce pressure on existing natural forests** by planting trees for sustainable fuelwood production in already degraded areas from slash and burn agriculture;
- (iii) *Strengthening land access and land security to allow for plot delimitation and plot investment in order to reduce the need to access additional forested land;*
- (iv) **Strengthening connection between smallholder farmers and markets**, as well as strengthening business capacities of smallholder farmers in order to increase their income and invest in high quality and low emission crop production from agro-forestry
- (v) **Strengthening access to adapted micro-credit** in order to increase investment and scaling up of high quality and low emission crop production from agro-forestry

This project aims at reducing carbon emissions, while also providing important adaptation co-benefits, focusing its action on **three deforestation and forest degradation hotspots** that cover the country's three large agricultural and fuelwood supply basins. These supply basins are located in rural areas and feed Brazzaville and Pointe-Noire, as well as the Niari valley and the towns of Dolisie, Madingou and Nkayi. These three basins extend over the departments of Plateaux, Pool, Bouenza, Niari and Kouilou. These five departments experienced the greatest increase in deforestation and forest degradation rates during the period 2012–2016.<sup>4</sup>

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<sup>3</sup> Congo's Nationally Determined Contribution (NDC, 2015)

<sup>4</sup> Latest data available as of November 2020

To address these critical issues, **the project proposes a series of interventions structured around three integrated components**, all of which are key to achieving the project objectives, and to transitioning towards low-emission development pathways. PREFOREST will build on the successful and innovative initiatives such as the establishment of the Mampu<sup>5</sup> systems and the UPARA (Unité pilotes d'aménagement, de reboisement et d'agroforesterie) for the assisted natural regeneration, as well as FAO's extensive experience, both in the country and in the sector. **Co-financing from FAO through resources provided by the Central Africa Forest Initiative (CAFI), the International Fund for Agricultural Development (IFAD), and the Ministry of Forest Economy** has been mobilized to complement the project activities for wider impact. The project will catalyse private sector investment in order to sustain and scale up interventions beyond the project duration.

Numerous private actors have expressed interest in partnering with PREFOREST through letters of intent with FAO: Eco-Oil Energy S.A. is interested in purchasing greasy crops (e.g. groundnut and soybeans) to produce vegetable oil; SCDIE is interested in purchasing groundnuts, banana plantains, cassava, avocado and safou; COFCOA and EPPAVPA are interested in purchasing cocoa; Agrideck is interested in purchasing cassava and safou; TOLONA is interested in purchasing banana plantains; local markets are interested in purchasing cassava, safou, banana plantain and avocado; and MFIs (MUCODEC, COFINA, CODEC, CAPPED, FCECM and HOPE) are interested in facilitating project beneficiaries' access to credit. The World Food Programme (WFP) is interested in purchasing various crops (e.g. beans, cassava, etc.) for school canteens. It is estimated that the demand from these buyers will already cover most of the yearly production of all crops produced under the agroforestry systems established by PREFOREST. Additional buyers have been approached at formulation stage and will be confirmed at implementation stage.

The PREFOREST project adopts a holistic approach, which is essential to achieve transformational change at scale, and to ensure sustainability.

The project aims at achieving a paradigm shift by transitioning away from a high-emission and unsustainable "business as usual" scenario towards a long-term, sustainable low-carbon development pathway. This project represents **the first forestry GCF project in the Congo Basin and the first collaboration between the GCF, FAO, CAFI and IFAD**. Therefore, it has the potential to significantly transform forestry and land-use practices in the Congo Basin. In addition, the model proposed by this project can be scaled up and replicated in other areas of the Congo Basin – by these key players – through a programmatic approach and in a coordinated manner.

The three components of the project are complementary and synergistic, building capacities and working holistically to achieve lasting impact at scale. Each of the following components plays a key role in transforming forestry and land-use practices in the Congo Basin:

**Component 1** of the project will promote an enabling environment for the adoption of low emission and resilient agro-forestry practices. This includes the strengthening of land access and security rights for the local populations and land owners in order to stimulate long-term investments in low emission climate-resilient agroforestry and forestry initiatives and awareness raising for a better adoption of the

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<sup>5</sup> This system takes the name from a village in DRC where this specific agro-forestry model was first adopted. It has been widely replicated the Baketé Plateau in DRC. It consists in rotational woodlots that are planted together with food crops. The use of annual food crops also contributes to reducing risks for fires. In case the fixes nitrogen (as Acacia) the soil is naturally fertilized. The second year a new plot is planted as in the first year (with a fast growing species planted along with an annual crop). Every year a new plot is planted. After 7-10 years the trees planted the first year are cut and that plot is planted again as occurred the first year.

agroforestry and forestry systems. In total, approximately 14,500 ha of land will be managed and/or secured for the beneficiaries.

**Component 2** will consist of providing technical and financial support to smallholder farmers to (1) promote the adoption of agroforestry and forestry practices in already degraded areas in order to reduce slash-and-burn agriculture (thus reducing GHG emissions); and (2) provide a sustainable fuelwood supply source, which would significantly reduce the pressure on natural forests in the three supply basins targeted by the Project. This component specifically aims to stimulate the emergence of low carbon agricultural initiatives in rural areas, particularly by providing the necessary incentives to unlock private investment in green value chains. In total, 14,500 ha of agroforestry and forestry systems will be established for approximately 11,331 beneficiaries (35% women), in addition to 5,000 ha of degraded forest restored. Specific agroforestry and/or forestry systems for energy established under this component, including 2,700 ha of fuelwood forestry systems under FAO cofinancing through CFI resources, will provide an avenue to strengthen energy access.

**Component 3** aims to increase entrepreneurial capacities of smallholder farmers and access to rural credit, and create market opportunities in order to support the emergence of Congolese rural entrepreneurship. This components will then mobilize private capital from national credit institutions and agro-industrial enterprises to finance the low-carbon initiatives promoted by this project. Approximately 2,500 beneficiaries will be supported in developing business plans and will benefit from access to financial services. This component is considered one of the cornerstones of the Project's long-term sustainability.

The project will directly contribute to reducing carbon emissions by 0.84 million tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub> eq) per year, 6.72 million tonnes of CO<sub>2</sub> eq over the eight-year period of project implementation, or 16.77 million tonnes of CO<sub>2</sub> eq over the 20-year project lifespan. The project will also have important adaptation co-benefits, reducing the vulnerability and increasing the adaptive capacity of approximately 41,373 direct beneficiaries (35% women) and 870,649 indirect beneficiaries (35% women) from the most vulnerable segment of Congolese society (i.e. small farmers including women, young people and indigenous populations)..

**Project costs and funding.** The total Project cost is estimated at **USD 46,567,138** of which **USD 28,988,852 (60%)** is being requested from the GCF and **USD 17,578,286 provided as co-financing respectively by FAO through CFI resources (USD 7,000,000), the Government of Congo (USD 9,015,286), and IFAD (USD 1,563,000).**

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## **ABBREVIATIONS**

ACI	Asia Congo Industriel
AFD	French Development Agency - <i>Agence Française de Développement</i>
AfDB	African Development Bank
AMA	Accreditation Master Agreement
ANR	Assisted Natural Regeneration
ASDB	Association of Salesians of Don Bosco - <i>Association des Salésiens de Don Bosco</i>
BADEA	Arab Bank for Economic Development in Africa ( <i>Banque arabe pour le développement économique en Afrique</i> )
CAFI	Central African Forest Initiative
CBC	FAO Climate and Environment Division
CBFF	Congo Basin Forest Fund - <i>Fonds pour les Forêts du Bassin du Congo</i>
CEMA	Agricultural Mechanization Center - <i>Centre de Mécanisation Agricole</i>
CFECM	Women's Savings and Credit Unions - <i>Caisses Féminines d'Épargne et de Crédit Mutuel</i>
CIB	Congolaise Industrielle des Bois
CIRAD	Agricultural Research Center for International Development - <i>Centre Internationale en Recherche Agronomique pour le Développement</i>
CMDC	Community Management and Development Committees
CMEC	Caisses mutuelles d'épargne et de crédit
CNIAF	National Centre for Surveys and Forest and Fauna Resource Management - <i>Centre National d'Inventaire et d'Aménagement des Ressources Forestières et Fauniques</i>
COMIFAC	Central African Forest Commission
CRAL	Loudima Agronomic Research Center - <i>Centre de Recherche Agronomique de Loudima</i>
CRDPI	Research Center on Industrial Plantation Sustainability and Productivity - <i>Centre de Recherche sur la Durabilité et la Productivité des Plantations Industrielles</i>
CTFT	Tropical Forest Technical Center - <i>Center Technique Forestier Tropical</i>
CTI	Industrial Processing Agreement - <i>Convention de transformation industrielle</i>
CVPFNL	Center for the Development of Non-Timber Forest Products - <i>Centre de Valorisation des Produits Forestiers Non Ligneux</i>
EFA	Economic and Financial Analysis
EIRR	Internal Rate of Return
ENPV	Economic Net Present Value
ENSAF	College of Agronomy and Forestry - <i>Ecole Nationale Supérieure d'Agronomie et de Foresterie National</i>

ERP	Emissions Reduction Programme
ERPA	Emission Reductions Payment Agreement
ESF	Framework Plan for Environmental and Social Management
ESIE	Environmental and Social Impact Evaluation
ESMS	Environmental and Social Management System
EU	European Union
FAA	Funded Activity Agreement
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Programme
FLEGT	Forest Law Enforcement, Governance and Trade
FMU	Forest Management Unit
FREL	Forest Reference Emission Level
FSA	Agricultural Support Fund - <i>Fonds de Soutien à l'Agriculture</i>
FSA	Financial Service Associations
FSMP	Fuelwood Supply Master Plan
GAC	General Agricultural Census – <i>Recensement General Agricole</i>
GAP	Gender Action Plan
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GHG	Greenhouse gases
HDI	Human Development Index
ID	Initiative Développement
IECD	European Institute of Cooperation and Development - <i>Institut Européen de Coopération et de Développement</i>
IFAD	International Fund for Agricultural Development
IFO	Industrie Forestière d'Ouessou
IFR	Forest Research Institute – <i>Institut de Recherche Forestière</i>
IRA	Agronomic Research Institute – <i>Institut de Recherche Agricole</i>
LDP	Local Development Plan
LoI	Letter of Intent

LULUCF	Land use, land-use change and forestry
M&MRV	Monitoring and Measurement, Reporting and Verification
MAEP	Ministry of Agriculture, Livestock and Fisheries - <i>Ministère de l'Agriculture, de l'Elevage et de la Pêche</i>
MAFDP	Ministry of Land Tenure and State Property - <i>Ministère des Affaires Foncières et du Domaine Public</i>
MATGT	Ministry of Land-Use Planning and Major Works - <i>Ministère de l'Aménagement du Territoire et des Grands Travaux</i>
MEF	Ministry of Forest Economy - <i>Ministère de l'économie forestière</i>
MEH	Ministry of Energy and Water - <i>Ministère de l'Énergie et de l'Hydraulique</i>
MET	Ministry of Tourism and the Environment - <i>Ministère du Tourisme et de l'Environnement</i>
MFI	Micro-Finance Institution
MRSIT	Ministry of Scientific Research and Technical Innovation - <i>Ministère de la Recherche Scientifique et de l'Innovation Technique</i>
MUCODEC	<i>Mutuelles Congolaises d'Epargne et de Crédit</i>
MUSCO	Mutual Assistance Associations of Congo - <i>Mutuelles de Solidarité du Congo</i>
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NGO	Non-Governmental Organization
NTFP	Non-Timber Forest Products
OCF	Congolese Forest Office - <i>Office Congolais des Forêts</i>
OED	Office of Evaluation
PAFSAJ	Support Programme to Improve Soil Fertility through Agroforestry and Fallow Land - Programme d'Appui à l'Amélioration de la Fertilité des Sols par l'Agroforesterie et les Jachères
PCI	Principles, Criteria and Indicators
PDAC	Support Project for the Development of Commercial Agriculture - <i>Projet d'Appui au Développement de l'Agriculture Commerciale</i>
PFCE	Improved Cookstove Sector Programme - <i>Programme Filières Cuiseurs Economes</i>
PLTO	Project Lead Technical Officer
PMU	Project Management Unit
PMU	Project Management Unit
PNAT	National Land-Use Plan - <i>Plan National d'Aménagement du Territoire</i>

PND – Cacao	National Programme for the Development of Cocoa Production - <i>Programme National de Développement de la Production de Cacao</i>
PPFNC	North Congo Forest Landscapes Project - <i>Projet Paysage Forestier Nord Congo</i>
PPMS	Project Performance Monitoring System
PRONAR	National Afforestation and Reforestation Programme – <i>Programme National d’Afforestation et de Reboisement</i>
PTL	Project Team Leader
REDD+	Reducing Emissions from Deforestation and Forest Degradation, Sustainable Forest Management and Enhancement of Forest Carbon Stocks
RENAPAC	National Network for Indigenous Populations of Congo - <i>Réseau National des Populations Autochtones du Congo</i>
RIL	Reduced-Impact Logging
RN	National Road
SC	Steering Committee
SDG	Sustainable Development Goals
SIS	Safeguards Information System
SMP	Simple Management Plan
SNAT	National Land-Use Scheme - <i>Schéma National d’Aménagement du Territoire</i>
SNR	Service National de Reboisement - <i>National Reforestation Service</i>
SRAM	Maléla Agronomic Research Station - <i>Station de Recherche Agronomique de Maléla</i>
TC	Technical Committee
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations REDD+ Programme
VPA	Voluntary Partnership Agreement
WCS	World Conservation Society
WFP	World Food Programme
WPAB	Work Plan and Annual Budget
WWF	World Wildlife Fund

## I. CONTEXT

1. In 2017, the Congolese Government, together with the National Designated Authority (NDA) for the Green Climate Fund (GCF), submitted a request to the FAO Resident Representative in Congo for the development of a GCF project proposal within the context of the REDD+ National Strategy and National REDD+ Investment Plan to support the implementation of its Nationally Determined Contribution (NDC), specifically the reduction of CO<sub>2</sub> emissions from slash-and-burn caused by agriculture expansion and fuelwood collection, while also contributing to the implementation of climate change adaptation priorities.
2. Thanks to the technical and financial support of the UN-REDD Programme and the FAO Climate and Environment Division (CBC), a project Concept Note was drafted and submitted to the GCF Secretariat for review in 2018. This Concept Note was developed based on several scoping missions conducted over the year 2018. With reference to the recommendations of the GCF Secretariat from the review of the Concept Note, several in-depth studies were conducted to analyze the feasibility of the Project and to inform the development of the funding proposal, so as to guarantee the effective implementation of the Project interventions.
3. The feasibility study (FS) has been informed by the following technical studies, in addition to the mandatory GCF annexes, developed in collaboration with local partners, during the formulation phase of PREFPREST:

-FS Annex 1\_Wood energy report by CIRAD

-FS Annex 2\_Operational and Financial study on NCD implementation on the LULUCF by CIRAD

-FS Annex 3\_Agricultural Value Chain report by CIRAD (part 1 and 2)

-FS Annex 4\_Financial Feasibility study by HORUS

The feasibility study has been developed in close consultation with government counterparts, relevant national and international organizations, and targeted beneficiaries.

## II. BACKGROUND

### A. Status of forests and land use changes<sup>6</sup>

1. Located at the heart of the Congo Basin, the Republic of Congo possesses a vast forest area, evaluated at 23,852,907 ha, accounting for 65.4% of land surface<sup>7</sup> as well as about 59,000 ha of planted forests.<sup>8</sup> Continuous savannahs, found in the centre and south-east sections of the country, cover a surface area of 11,793,218 ha, accounting for 34.5% of the national territory.<sup>9</sup> Congo's forests are subdivided into 3 large tracts: North Congo, Mayombe, and Chaillu tracts. The North Congo tract (close to 14 million ha) makes up almost three quarters of forest surface area. The centre of the country is dominated by smaller forest tracts.
2. Out of the natural forests, 12,7% (3 991,418 ha) are dedicated to the 17 protected areas (MEFDDE, 2017b), and close to 60% (13,338,216 ha) are used for commercial logging. Forestry plantations in the Republic of Congo were estimated at 59,100 ha, or 0.17% of national coverage (Louzinga, 2017) and are concentrated in the south of the country, mainly in Kouilou (at the periphery of Pointe-Noire), Bouenza, Niari and Pool departments (REDD+ Investment Plan).
3. The most updated deforestation rate in Republic of Congo is low at 0.06% per year over the 2016-2018 period (CNIAF, 2020). The country is classified as a "low deforestation and forest degradation rate" and "high forest cover" country. Forest cover losses were estimated at 26,336 ha between 2016 and 2018, with an average of 13,168 ha/year and a loss rate of 0.06% as shown in the map below. The annual estimate of this loss has shown a high annual variability (CNIAF, 2015).
4. The table below shows the changes in forest cover between 2016 and 2018 in Republic of Congo and in each department.

**Table 1: Forest cover and deforestation rates between 2016 and 2018**

Department	F_2016_ha	F_2018_ha	Loss_Ha	Loss_Ha/an	Annual rate
KOUILLOU	1.166.291	1.164.320	1.971	986	0,08%
NIARI	1.746.453	1.744.347	2.106	1.053	0,06%
BOUENZA	315.199	314.690	508	254	0,08%
LEKOUMOU	1.786.334	1.785.201	1.134	567	0,03%
POOL	744.281	740.779	3.503	1.751	0,24%
PLATEAUX	1.002.933	999.829	3.104	1.552	0,15%
CUVETTE OUE	2.120.656	2.117.709	2.947	1.474	0,07%
SANGHA	5.611.593	5.607.923	3.670	1.835	0,03%
LIKOUALA	6.283.452	6.278.222	5.230	2.615	0,04%
CUVETTE	3.102.050	3.099.887	2.163	1.081	0,03%
Total	23.879.242	23.852.907	26.336	13.168	0,06%

Source: CNIAF, 2019

<sup>6</sup> The background information related to forests is largely taken from the 2017 National REDD+ Strategy Investment Plan for the Republic of Congo 2018- 2025 (Version 5) as provides the most up to date official information on the subject

<sup>7</sup> FAO, 2015

<sup>8</sup> CNIAF, 2019

<sup>9</sup> EDF, 2015

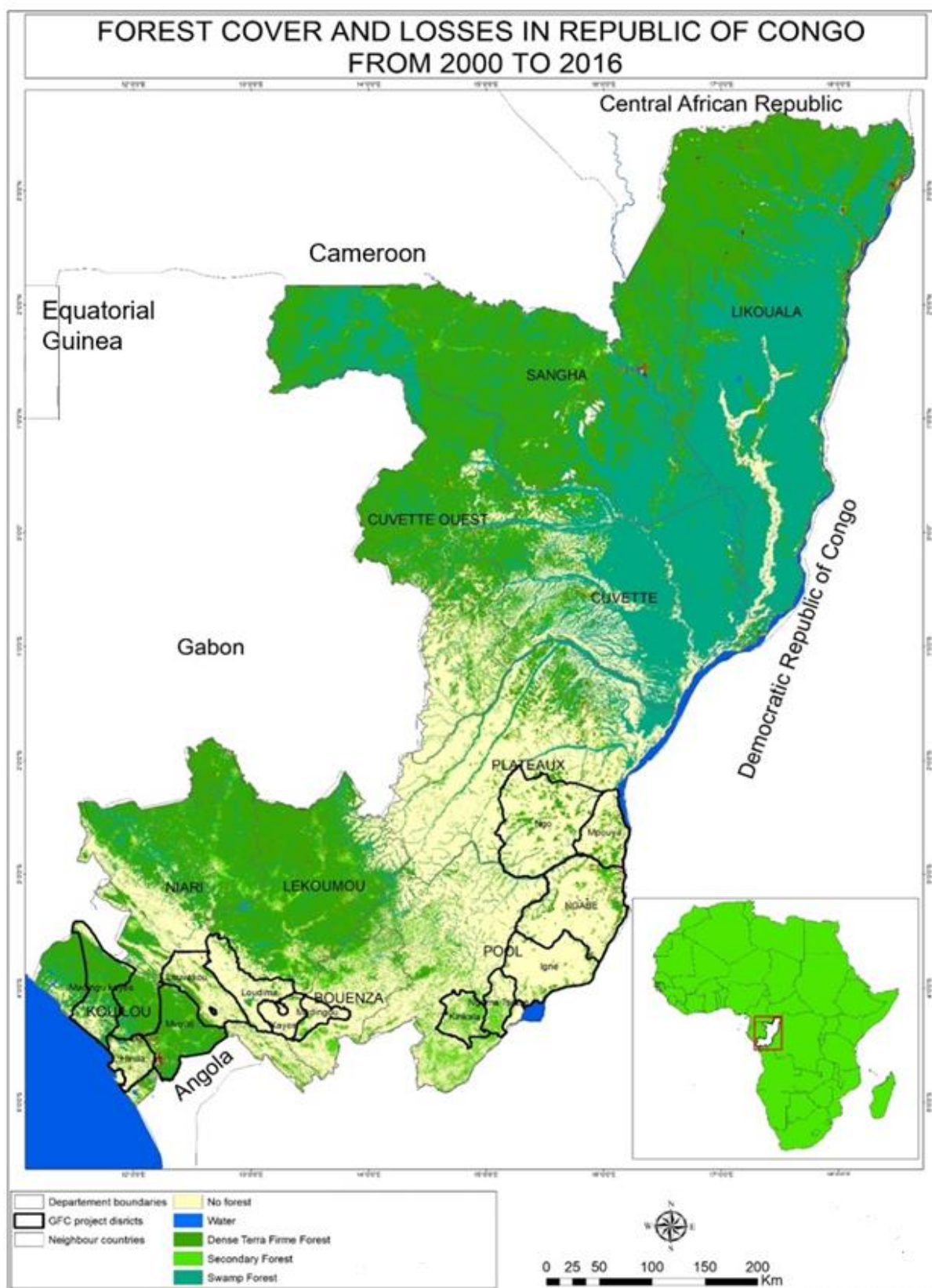


Figure 1: Forest cover and losses in Congo from 2000-2016

*Souce: REDD+ Investment Strategy, 2017<sup>10</sup>*

<sup>10</sup> The black contour indicates the areas targeted by the PREFOREST



## B. Emissions profile of LULUCF sector

5. In the Republic of Congo's Second National Communication on Greenhouse Gas (GHG)<sup>11</sup> of 2009, the country estimated its GHG emissions outside the forest sector at 2 MtCO<sub>2</sub>/year (MEFDDE 2009) revised to 5 MtCO<sub>2</sub>/year for the year 2015 as part of its Intended Nationally Determined Contribution (INDC) (Government of Congo, 2015). In accordance with the 2006 Guidelines for National Greenhouse Gas Inventories established by the Intergovernmental Panel on Climate Change (IPCC), these emissions come from the following emission sectors: energy, waste, industrial processes and product use
6. In 2017, the Government of Congo validated its Forest Resource Emission Level (FREL) with the United Nations Framework Convention on Climate Change (UNFCCC), which estimates **emissions from the forestry sector at 19.2 MtCO<sub>2</sub>/year in 2015 and 50 Mt CO<sub>2</sub>eq/an in 2016<sup>12</sup>** (see Figure 2), **making it the country's largest emission sector for more than a decade**. Taking into account the expected future emissions for the 2015-2020 period (especially from the development of the mining and agro-industrial sector), annual emissions have been reassessed at 35.5 MtCO<sub>2</sub>/year (MEFDDE, 2017c).
7. These estimates consider emissions related to deforestation (forest to non-forest status) and those related to planned and unplanned degradation (without land-use change), where forest is defined as "an area covering a minimum area of 0.5 ha with trees with a minimum height of 3 meters and a minimum tree crown cover of 30%". This definition excludes agricultural activities, including oil palm plantations (MEFDDE, 2016).

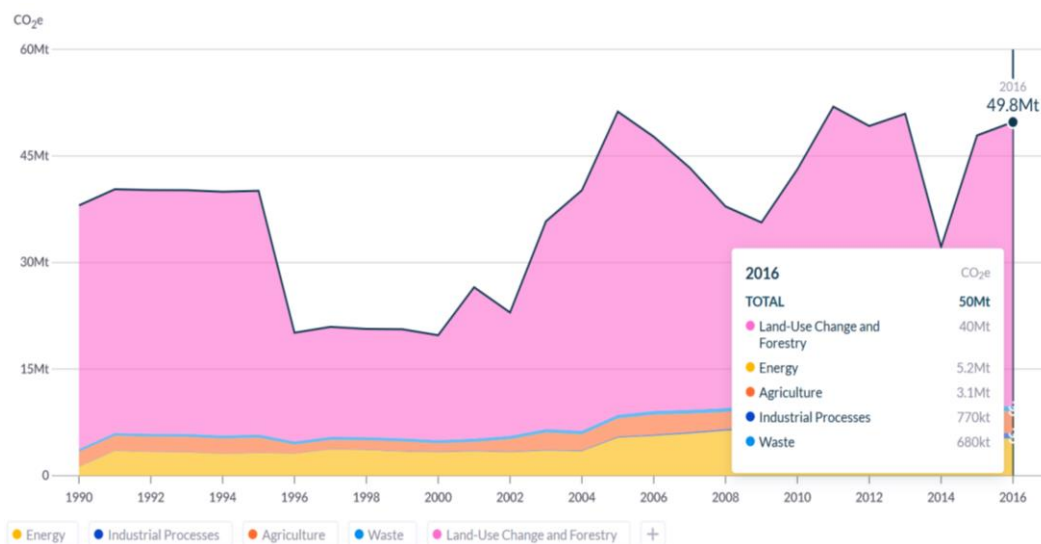


Figure 2: Historical GHG Emissions in Congo over the period 1990 to 2016<sup>13</sup>

8. According to Congo's Nationally Determined Contribution (NDC, 2015), GHG emissions could double in the coming years, mainly due to **pressure on forests** from mining and agro-industrial sectors. A business as usual (BAU) scenario suggests a **sixfold increase in total CO<sub>2</sub> emissions (approximately**

<sup>11</sup> The main GHGs taken into account under the UNFCCC are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and industrial GHGs such as: hydrochlorofluorocarbons (e.g. HCFCs -22), chlorofluorocarbons (CFC); tetrafluoromethane (CF<sub>4</sub>); sulphur hexafluoride (SF<sub>6</sub>).

<sup>12</sup> These are the most up to date data as of November 2020

<sup>13</sup> <https://www.climatewatchdata.org/ghg-emissions?breakBy=sector&chartType=area&gases=246&regions=COG>

**34,527 kt eq CO<sub>2</sub>) by 2035**, while it would only multiply by 2.7 in a low carbon scenario (see Table 2).<sup>14</sup>

**Table 2: GHG emission scenarios for Congo up to 2025 and 2035**

Year	GHG emissions scenarios with no land-use change					
	Reference		Trend-based scenario		Low carbon scenario	
	2000	2015	2025	2035	2025	2035
Total (kteqCO <sub>2</sub> )	2,044	5,317	16,984	34,527	8,793	15,858
Total (teqCO <sub>2</sub> /pers)	0.72	1.10	2.55	3.75	1.32	1.72

Source: Nationally Determined Contribution, 2015

**Table 3: The Republic of Congo's 2000-2020 FREL**

Source		Annual GHG Emissions (MtCO <sub>2</sub> /year)
<b>Historic emissions (2000-2012 average)</b>	Unplanned forest degradation	0.3
	Planned forest degradation	12.9
	Planned deforestation	-
	Unplanned deforestation	6
	<b>TOTAL HISTORIC</b>	<b>19.2</b>
<b>Adjustment (2015-2020)</b>	Future degradation	2.7
	Future deforestation	13.6
	<b>TOTAL ADJUSTMENT</b>	<b>16.3</b>
<b>FREL (2015-2020)</b>		<b>35.5</b>

Source: MEFDDE, 2017c

### C. National priorities for emissions reduction in Congo

9. The Republic of Congo proposed an ambitious target in its Intended Nationally Determined Contribution (INDC) submitted at COP 21 in Paris **to reduce national emissions by 48%** and then 55% for 2025 and 2035 **mainly through the implementation of the REDD+ mechanism** compared to the trend scenario (uncontrolled). To achieve its emission reduction targets, the Republic of Congo has set itself two areas of results:

- Maintain, or even strengthen, the carbon sequestration potential by forests, through better management of the sector, as well as through reforestation.
- Reduce GHG emissions from the energy sectors and the fight against unplanned deforestation

10. The **REDD+ National Strategy** (REDD+ NS) was developed in 2016 and is an important part of the NDC implementation. This REDD+ NS is an ambitious strategy aims to (i) establish a multisectoral action framework that will align and influence sectoral policies and strategies, (ii) harmonize action programs and (iii) align the action programs' budget with the Republic of Congo's development priorities beyond the forest sector. The areas of intervention of the REDD+ NS are:

- ✓ Strategic Option 1: Strengthen governance and sustainable financing

<sup>14</sup> Nationally Determined Contribution for the Republic of Congo, 2015

- ✓ Strategic Option 2: Sustainable development and management of forest resources
- ✓ Strategic Option 3: Improve agricultural systems
- ✓ Strategic Option 4: Rationalize production and use of fuelwood and promote other clean energy sources
- ✓ Strategic Option 5: Develop a green mining sector

11. **Further** to the REDD+ national strategy, a REDD+ Investment Plan (REDD+ IP) was validated in June 2018. **It constitutes the reference framework for actions to be implemented during the period 2018-2025 in respect to the reduction of emissions from deforestation, forest degradation and enhancement of carbon sequestration.**
12. The Investment Plan of the REDD+ National strategy identifies 5 enabling programs and 6 geographically integrated programs for the 2018-2025 period to be financed through existing bilateral and multilateral funding (AFD, EU, IDA-WB, GEF, etc.), and proposed for funding from climate funds including the Forest Investment Program (FIP), the Central African Forest Initiative (CAFI) and the Green Climate Fund (GCF) and other multilateral, bilateral donors and private sector sources. Table 4 below indicates the priority programs that the Republic of Congo has priorities for the implementation of the REDD+ strategy and the NDCs. As will be better described in section III, PREFOREST has been formulated to be perfectly aligned with the priority programs in coordination with other investments (CAFI, World Bank) in order to support Congo implementing its programmatic approach for emissions reduction.

**Table 4: Priority programs for the implementation of the REDD+ strategy and the NDCs for 2018-2025**

Program	Geographical area	SO1 : Governance	SO2 : Forest resource management	SO3 : Sustainable agriculture	SO4 : Sustainable energy	SO5 : Green mines
<b>Enabling programs</b>						
Land-Use planning	National	✓				
Governance support	National	✓	✓			
Green Mines	National					✓
Green industrial agriculture	National			✓		
Green infrastructure	National	✓				
<b>Geographically integrated programs</b>						
Sangha-Likouala ER-Program	Sangha, Likouala	✓	✓	✓		✓
Agroforestry and fuelwood community project in Pool and Plateaux departments	Pool, Plateaux			✓	✓	
Sustainable management of Mayombe forest ecosystems and of coastal ecosystems	Kouilou	✓	✓	✓	✓	✓
Forestry and agroforestry plantations and sustainable forest management in the Niari valley	Niari		✓	✓	✓	
Sustainable management of the Chaillu forest tract	Lékoumou, Bouenza		✓	✓		
Community agroforestry in Congolese Cuvette	Cuvette, Cuvette Ouest		✓	✓		

#### D. Drivers of deforestation and forest degradation in Congo

13. Congo **REDD+ National Strategy and REDD+ Investment Plan 2018-2025** identifies two types of drivers of deforestation and forest degradation: (i) Drivers that have a direct impact on forest cover; and (ii) Indirect or underlying drivers that contribute to the expansion of direct drivers. In 2014, the Republic of Congo conducted a study that identified the various drivers of deforestation and forest degradation, which were subsequently quantified under the national FREL. The drivers identified in the study are as follows:
14. **Direct drivers of deforestation and forest degradation:** i) Slash-and-burn agriculture; ii) Industrial agriculture; iii) Fuelwood production; iv) Commercial and illegal logging; v) Mining development; vi) Road and urban infrastructure;
15. **Indirect (or underlying) drivers of deforestation and forest degradation:** i) weak governance due to weak institutional capacity, particularly in terms of control of the sectors influencing deforestation; ii) weak intersectoral coordination and lack of land-use planning, leading to overlapping and incompatible land uses; iii) poverty and lack of financing (or access to finance) for economic and technological alternatives – according to the World Bank,<sup>15</sup> 40.9% of the population lives below the national poverty line, and 69.5% lives in rural areas; and iv) population growth of 2.6%, leading to an increase in domestic demand for agricultural land, fuelwood and infrastructure.
16. The main driver of deforestation and degradation of forest ecosystems in rural areas, and specifically in the Project area is **slash-and-burn agriculture for agriculture expansion and collection of fuelwood**. The slash and burn practice is method of agriculture in which existing vegetation is cut down and burned off before new seeds are sown, typically used as a method for clearing forest land for farming.
17. Although this activity may be practiced sustainably under certain conditions, the **demographic growth** in southern Congo causing an increasing demand of crops and fuelwood and unsustainable agricultural practices characterized by low productivity push stallholders farmers to practice slash-and-burn agriculture **with ever decreasing rotations which prevents the natural regeneration of fallow land**, leading farmers to constantly **push back the agricultural frontier to the detriment of the forest**.<sup>16</sup>
18. In fact, **slash-and-burn farming is leading and overuse of agricultural land causing deforestation and forest degradation**.
19. The main consequences **are degradation of the agro-ecological conditions of the plot which push local communities to valorize forest area and cause deforestation, contributing to increasing GHG emissions**. Over time, this creates problems related to plant protection, decrease in soil fertility and a drop in agricultural yields.

#### *Baseline analysis of slash and burn agriculture in southern Congo*

20. **Small holder farmers constitute a third of the active population.** The agricultural sector (including forestry) employs 498,000 people - 65-70% of whom are women - but contributes only 5-7% of the

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<sup>15</sup> World Bank, 2017. Republic of Congo: Poverty Assessment Report.

<sup>16</sup> REDD+ National Strategy for the Republic of Congo. REDD+ National Coordination. 2016. Page 35.

GDP. In southern Congo, subsistence agriculture mainly practiced by poor and aging families who cultivate 1-2 hectares and provide 90% of the national production. Agriculture is not mechanized and dependent on weather. **Domestic food production covers only 30 percent of the needs, so Congo relies extensively on food imports from overseas.** WFP estimates that 15 percent of households report poor or limited food consumption, with peaks of 30 percent in rural areas<sup>17</sup>.

21. Slash-and-burn agriculture is one of the most developed practice for agriculture expansion and fuelwood collection. Subsistence farming using slash and burn in fact represents approximately **81% of cultivated land and 98% of national food production** (BRLi, 2014).
22. Smallholders farmers mainly grow staples using slash and burn agriculture, such as plantains, cassava, peanuts/groundnut, corn, potatoes, beans, bananas and yams where land is cultivated for a 2-year period and left to lie fallow for 7 to 10 years, which allows the forest to replenish. Following the harvests, the soils of the plots which have become less productive are left fallow to allow a reconstitution of fertility. However, slash and burn agriculture is increasingly leading to deforestation and forest degradation.

#### Description of the slash and burn practice

23. Slash-and-burn agriculture is a generic term for agricultural systems in which trees and other vegetation are cut and burned to clear plots for the growing of crops. In Congo, the wood from the area is then be collected to be used as fuelwood. After several plantings, the topsoil is depleted and the farmer moves deeper into the forest and repeats the process. Fields are nutritionally exhausted after two years of agricultural use and may take fifteen years to recover. Instead of waiting on the fields to recover, farmers cut down more forests to grow more crops.
24. Two major variants of slash-and-burn agriculture are present in rural southern Congo, and in the project areas, depending on the site of the agricultural operation and particularly depending on the cultural heritage of the farmer: **grubbing in forest areas** and **burning**, which is common in **savanna areas**.
25. **Grubbing in forest areas:** Using grubbing, producers on land with forest areas combine subsistence crops, based on **maize, cassava, groundnuts, and plantains**, which ends up after three years as forest fallow or with the creation of a fruit orchard to replace the pre-existing treed vegetation. To this end, **trees are clear-cut, with burning of the felled trees**. This practice is fairly common in the targeted districts of Madingou, Loudima, Louvakou, Mvouti and Kinkala. Forest grubbing or clearing often starts between April and May. The work is exclusively manual, except for possible use of a chainsaw when trees are being felled.
26. There are two sowing campaigns for crops whose growing cycle does not exceed three months. These crops are specifically **maize, groundnuts and vegetables**. The first sowing campaign takes place in October of the current year (year 1) and the second starts in March of the following year (year 2). The harvest of the first crop cycle takes place between December of the current year (year 1) and January of the following year (year 2) and the same area is reseeded in March (year 2) with the same crops for the second cycle which will end in June (year 2). When the rain falls in October of year 2, the field, completely cleared of the waste from previous crops, is planted with plantains and/or fruit trees. In the visited villages, safou (*Dacryodes edulis*) are the most common, with more than 75% in these plantations. There are at 1,111 plantain trees per ha and safou trees are placed at varying densities, depending on crop. Such plantations may also include cassava and vegetables, such as aubergine,

<sup>17</sup> <https://www.wfp.org/countries/congo>

tomatoes and chilies to meet complementarity requirements or for financial income.

27. **Burning in savanna areas:** Based on stubble plowing and burning, the system developed by producers is the **cassava-maize-groundnut** combination, in which groundnuts and maize can be grown in one or two cycles, depending on availability and the means of the agricultural stakeholders. The burning is generally carried out at the end of the dry season of the current year (end of September) and takes the form of slow combustion, which lasts several days, to concentrate the ash (mineral elements) under the seed bed. This slash-and-burn technique has the advantage of being a controlled-fire agricultural technique.
28. Sowing is carried out in October in chronological order. Maize is sown after the cassava cuttings are placed in the ground and have sprouted, and groundnuts are sown after the maize emerges. This combination is often implemented with a single cycle of groundnuts and maize, to allow the cassava to occupy the land alone until it is harvested between the 15<sup>th</sup> and 18<sup>th</sup> months. This plantation can also include vegetables, such as aubergines, tomatoes and chilies. The other variant consists of introducing cassava in the second cycle of maize and groundnuts, in March, after a first cycle of maize and groundnuts without cassava, which ended in January.
29. This production system requires an average of three weeding, each taking place over three days. The first takes place during the current year, approximately one month after sowing and preferably before flowering of the groundnuts plants. The second weeding takes place between the fourth and fifth months, corresponding to the period from February to March, which is one the two months after harvesting of the maize and groundnuts. This is a stage which usually prepares the seedbed for the second cycle of maize and groundnuts, when the farmer has chosen the second variant. This second weeding session also corresponds to the active growth and tuber formation stage of the cassava, when the first variant was chosen, the farmer earths-up the base of the cassava stems. The third weeding takes place between the eighth and twelfth weeks to eliminate any adventitious flora that developed during the main rainy season (March to May), waiting for the cassava leaf fronds to develop, as of November.

#### Main drivers of slash and burn agriculture in Southern Congo

30. According to the REDD+ strategy, deforestation and land degradation caused by slash and burn is, among others, mainly a result of:

Increase in demand for agricultural products (such as cassava, maize, plantains, etc.) linked to population growth

31. The country's population is estimated at 5.27 million inhabitants with an estimated density of 15.4 inhabitants per km<sup>2</sup>. Congo has a very high fertility rate at 5.1 children born per woman, with an even higher fertility rate of 6.5 in rural regions. The country's population is currently growing at a rate of nearly 3% per year, which is not ideal with the country's present economic circumstances, because it is **putting pressure on available resources**. This is particularly true in the south of Congo, where the project will be located. The annual growth rate in Congo is expected to continue to be high due to the extremely high birth rate in the country. Current projections indicate the population of Congo will be 5,686,917 in 2020, 7,318,887 in 2030, 9,308,628 in 2040 and 11, 509,651 by 2050.<sup>18</sup> Although the five major cities contain almost 60% of the population of the country, **most of the rest of the population**

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<sup>18</sup> <https://worldpopulationreview.com/countries/republic-of-the-congo-population/>

**are dependent on forests for their vital needs** (e.g. food, energy).

32. The majority of the population is concentrated in the country's two main towns located in the south, Brazzaville and Pointe-Noire. Crops and fuelwood to supply the demand of Pointe Noire and Brazzaville come from agricultural areas surrounding the two cities, and consist in the departments of Pool, Plateaux, Bueza, Lekoumou, Kouilou and Niari.
33. In addition, Congo is currently going through a difficult period characterized by persistently weak macroeconomic fundamentals. In 2017, economic growth dropped for the second consecutive year, down to -3% after -2.8% in 2016. The country's debt increased greatly over the past eight years to reach 180% of GDP in 2018. As a result of the country's economic crisis, many young and unemployed people to seek economic alternatives in the countryside surrounding the large urban areas, particularly in the field of subsistence agriculture and fuelwood exploitation, exacerbating the pressure on forests of southern Congo.
34. The increasing population is leading to an increase demand for the main crops produced in southern Congo, all produced through slash and burn agriculture. These are: **cassava, ground nut, cocoa, plantain, maize, fuelwood.**
35. The demand of these products is exponentially increasing, leading smallholder farmers to access more and more forested land in order to expand agriculture areas and collect fuelwood.

The low yield of case of cocoa, cassava, and other crops major socio-economic interests

36. Yields cultivated by smallholder farmers in southern Congo are lower compared to other countries of sub-Saharan Africa with approximately 4 t/ha, while they are approximately 15 t/ha in Cameroon and as high as 50 t/ha/year in other parts of the world.<sup>19</sup>
37. Low yields is mainly due to:
  - i) poor seed quality
  - ii) non-use of fertilizers
  - iii) limited access to improved technologies, such as mechanization
  - iv) increasingly decreased soil fertility for exploited area linked to shortening of the fallow period which prevents the natural regeneration of fallow and leads to soil impoverishment, the drop in soil organic matter and the non-replacement of nutrients lost with crops;
  - iv) limited knowledge of improved production techniques

Low yields coupled with increasing demand is leading smallholder farmers to access more and more forested land in order to expand agriculture areas and access more fertile lands. With better yields, the producer price could go down, leaving higher profit margins for distributors, which would stimulate the value chain, create increased demand and result in better nutrition for the population.

The customary land system which facilitates access and clearing of forests

38. The current land tenure system in Congo does not encourage a sustainable forest management at the

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<sup>19</sup> PDCE, 2017 <https://pdce-congo.com/presentation-du-projet/>



local level. Outside of forest concessions for commercial purposes, forests are considered "open access" areas state owned and not subject to property rights. In addition, the land legislation of most of the Congo Basin countries directly conditions the recognition of land ownership on the development of forests and thus encourage the conversion of woodland to agricultural land.

39. Securing land tenure rights is essential to encourage landowners and tenants to invest in sustainable natural resource management in order to maximize long-term returns on investment. The institutional framework in respect to land tenure has evolved significantly over the last decade.
40. In respect to land policy, it is worth mentioning the **National Land Tenure Policy 2016-2025**, which helped identify gaps and needs to improve land tenure rights to promote investment and respect the traditional rights of the populations, in order to promote sustainable economic diversification and the contribution of the sector to the GDP. The National Land Tenure Policy is structured around three main intervention areas:
  - (i) promotion and access to land and securing land rights;
  - (ii) reconstruction and protection of the domain of the State and of local communities; and
  - (iii) modernization of the management land tenure and State domain.
41. To support the implementation of the National Land Tenure Policy, the Government of Congo elaborated a 4-year Action Program for the Implementation of the National Land Policy (*Plan d'Action pour Mise en oeuvre de la politique Foncière Nationale - PAMPNF*) for the period 2017-2020 divided into 3 components and 9 sub-components divided into actions and measures.<sup>20</sup>
42. There are three methods of acquiring land ownership in Congo. The first mode is either by inheritance, gift, obligation, accession, or prescription. This model of acquisition is governed by Articles 711 and 712 of Book III of the French Civil Code of 1808. The second model is the acquisition by recognition of customary land rights as governed by a battery of legal texts related to land tenure, including Framework Law no. 10-2004 of March 26, 2004 laying down the general principles applicable to domanial and land tenure regimes. Indeed, it stipulates in its Article 31 that "in addition to the rights falling under modern legislation, the land tenure system guarantees the recognition of pre-existing customary land rights not contrary or incompatible with titles duly issued and registered". Consequently, individuals or communities who have a customary right to land can, by the registration procedure as defined by Law No. 17-2000 of 30 November 2000, have them recognized and obtain a land title. Decree No. 2006-255 of June 20, 2006 creating and defining responsibility, composition and operationalization of an ad hoc body for the recognition of customary land rights makes it possible to support communities free of charge in registering their customary lands, duly recognized by the cadaster, agriculture and forest economy departments. In addition, Law 21-2018 of June 13, 2018, which sets the rules for land acquisition and use, allows local communities to register land that they are holding under customary rights and to develop this land based on a land-use plan. Besides these two modes of acquisition, there is a possibility of obtaining an occupancy permit issued by the Municipality Council under the terms of Law No. 17-2000 of 30 December 2000 related to land ownership, giving an individual the right to occupy land. Unlike the property right, this right can be revoked in the event of the land not being developed after three years.
43. However, the promotion of land tenure rights in Congo is confronted by the limited access to information concerning land tenure rights certainly due to the lack of dissemination of the rules and

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<sup>20</sup> PAMPNF, 2015



procedures that frame this process with local community and indigenous people.

Effective systems of land use, access rights and rights of property are essential for better management of forests. Improving these systems is a priority to provide farmers, in particularly for women, the necessary incentives for long-term investment in agricultural processing. Likewise, there is hard evidence that community-based forest management approaches can successfully expand the supply of firewood while avoiding unsustainable harvesting in forests natural, when communities have land tenure issues / foresters sufficient visibility to decide to invest in long-term viability term of forests, woodlands and agroforestry systems.

#### Climate change impacts on yields

44. Congo is already experiencing climate change variability and extremes. Studies reveal that average **temperature increased** in the whole country by 0.6°C during the period 1950-1980,<sup>21</sup> while rainfall decreased by 10-20% during the decade 1980-1990.<sup>22</sup>
45. Climate projections suggest that this trend may continue unabated over the next few decades. For example, GCM projections (reference period 1961-1990) suggest an increase of temperatures of 0.6-1.1°C by 2050 and 2-3°C by 2100.<sup>23</sup> Climate projections from RCP4.5 emission scenario reveal an increase in temperatures of about 2.5°C during the period 1960-2090 (Figure 4) with important regional variations (Figure 5). Precipitation is projected to remain relatively stable with a downward trend between 1980 and 2080 (Figure 6). **Decrease in precipitation will be more pronounced in the south**, where the project will be located, and estimated to at least 30 mm by 2030-2050 (Figure 7).

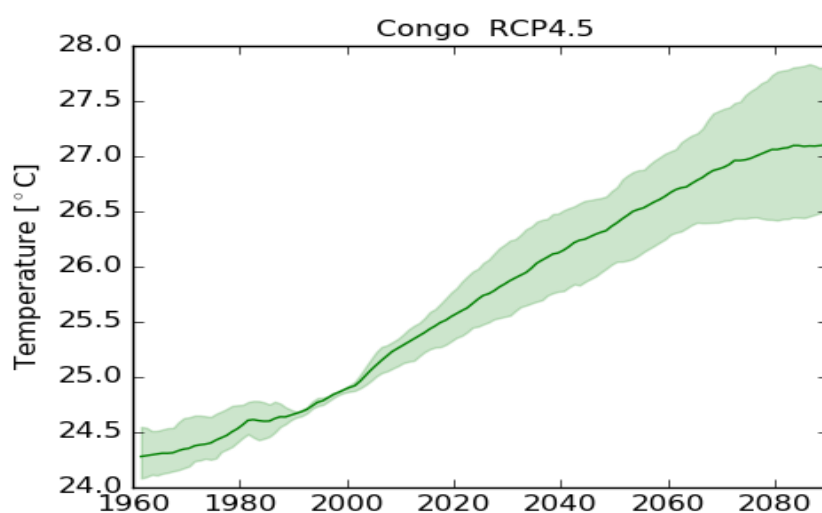


Figure 3: Regional climate model projections for temperature displayed as 20 year running mean<sup>24</sup>

<sup>21</sup> <https://climateknowledgeportal.worldbank.org/country/congo-republic/climate-data-projections>

<sup>22</sup> Samba, G. et Nganga, D. 2012. Rainfall variability in Congo-Brazzaville 1932-2007. International Journal of Climatology

<sup>23</sup> Sonwa et al.2013. Climate change and adaptation in Central Africa: Past, scenarios and options for the future.

<sup>24</sup> The line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5.

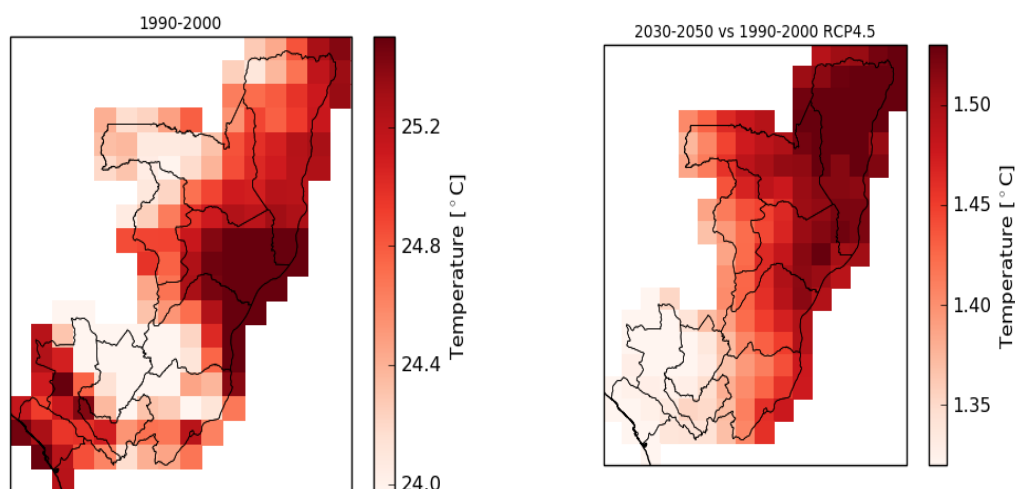


Figure 4: Map on left shows temperature average over the reference period 1990-2000;<sup>25</sup> Map on right shows projected change in temperature for 2030-2050 compared to the reference period 1990-2000.<sup>26</sup>

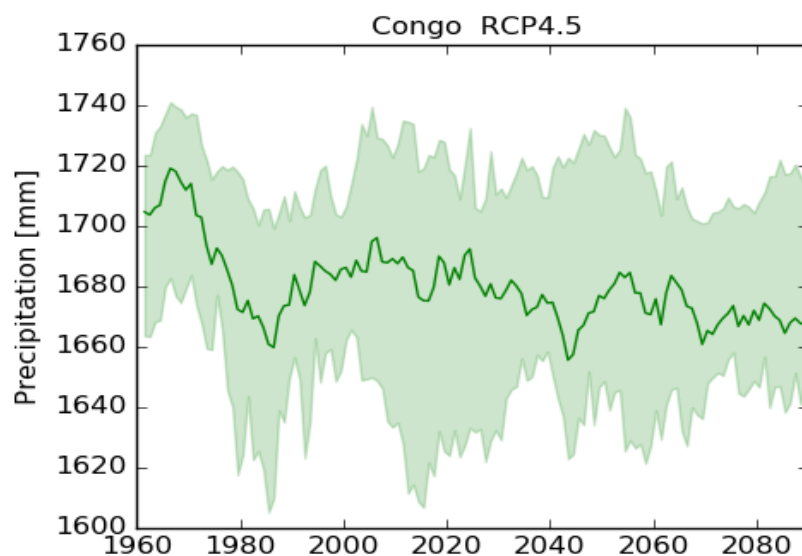


Figure 5: Regional climate model projections for precipitation displayed as 20 year running mean<sup>27</sup>

<sup>25</sup> Based on the [EWEMBI](#) dataset

<sup>26</sup> Here the ensemble mean of regional climate model projections is displayed. Grid-cells for which a model-disagreement is found are colored in gray. The projections are based on the emission scenario RCP4.5.

<sup>27</sup> The line represents the ensemble mean while the shaded area represents the model spread. The projections are based on the emission scenario RCP4.5.

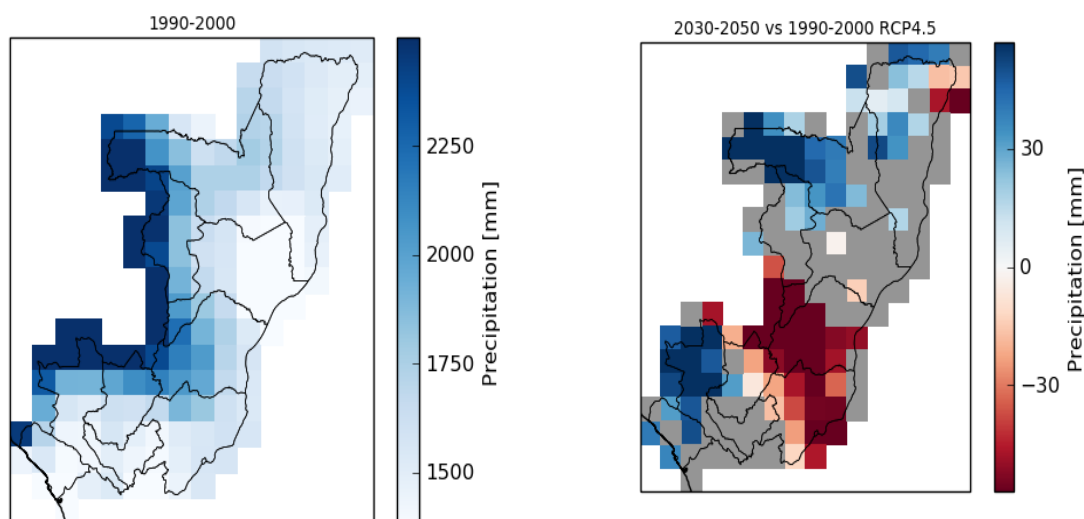


Figure 6: Map on the left shows precipitation average over the reference period 1990-2000.<sup>28</sup> Map on the right shows projected change in precipitation for 2030-2050 compared to the reference period 1990-2000.<sup>29</sup>

46. Climate change is causing, in rural Congo, **instability of rain-agricultural seasons** (October-December and March-May), characterized by **shortening, a delay or the absence of one of the two seasons**. The delay is often in the form of a late start to the rainy season. The instability of the period between the wet seasons (well-known by farmers) changes the cyclical variations of soil water and implicitly causes differences in inter-cyclical yields. Serious events such as frequent small water shortages have a chronic effect on agricultural yields. For example, small-scale rural farmers in the project areas indicate that they are already facing early sowing and shorter crop cycles. The decrease in rainfall, which is increasingly irregular, and extreme weather phenomena (e.g. torrential rains) are **causing leaching and erosion of the soil, making certain crops unsuitable** (e.g. **groundnuts** due to their poor root system) and increasing the risk of flooding, which has a considerable impact on agricultural systems. The combined effect of all these factors increases the country's food insecurity risk, and it is already 75% dependent on food imports to meet the needs of its population.<sup>30</sup>
47. Smallholder farmers of southern rural Congo in general and the project area in particular agree that among the roots and tubers, **cassava (the basis of the diets of most populations) is the hardest hit**, and its yields and disease resistance have been most affected by climate change. High yielding cassava varieties that used to yield upwards of 35t/ha under on-farm conditions have seen their yields reduced to a bare 15t/ha. **New diseases** like the cassava root rot have developed in synergy with root insects, such as the African root and tuber scale (*Stictococcus vayssierei*). African cassava mosaic disease, endemic in the region, has developed more virulent strains, such as the Ugandan variant. The severity of maize and sorghum *Striga* has made these **crops less productive**. Plantain fungal diseases have increased in severity, because of increasingly heavy precipitation in the ecozone. Maize is considered as the most vulnerable cereal, followed by rain-fed rice. Groundnuts and

<sup>28</sup> This map is based on the [EWEMBI](#) dataset.

<sup>29</sup> Here the [ensemble mean](#) of [regional climate model](#) projections is displayed. Grid-cells for which a [model-disagreement](#) is found are colored in gray.. The projections are based on the [emission scenario RCP4.5](#).

<sup>30</sup> World Bank, 2019

common bean are the grain legumes most affected by a changing climate in the Project area. All these have resulted in substantial losses to agricultural production.<sup>31</sup>

48. Under projected climate change, the IFAD's Climate Adaptation in Rural Development – Assessment Tool (CARD)<sup>32</sup> climate models indicate significant **decrease in major crops production due to climate change over the next few years**. For example, from 2000 reference level and considering an emission scenario that leads to around 4°C global warming by 2100, **cassava production is predicted to decrease by approximately 20%, groundnuts by 16% and maize by 9.75% by 2050 at the national level** (Figure 8).

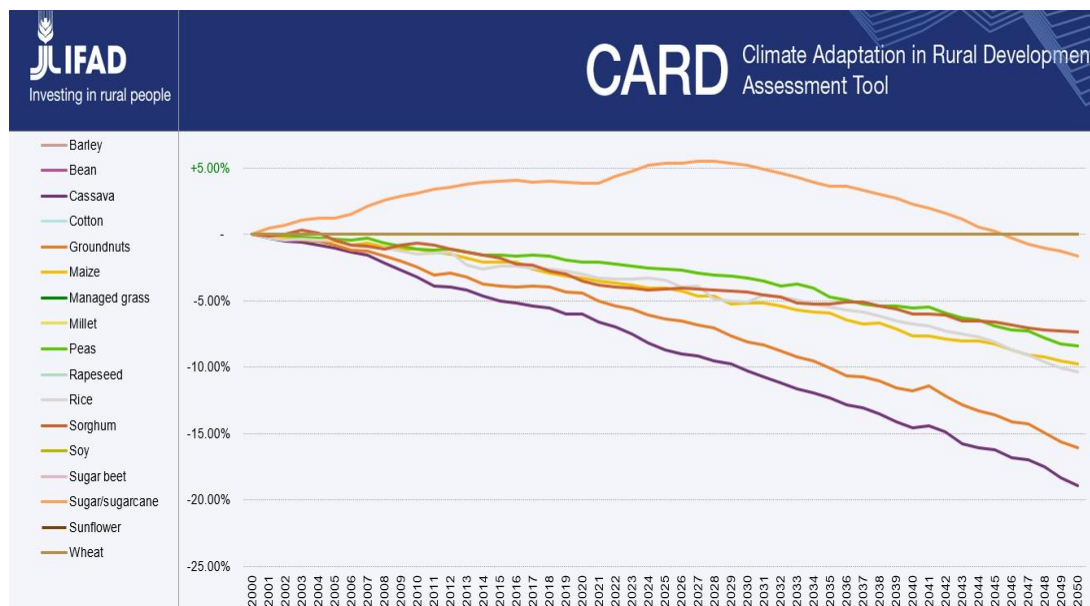


Figure 7: Projection of major crops yield in Congo under an emission scenario of 4°C global warming by 2100<sup>33</sup>

Low yields, food insecurity and high poverty in southern Congo, as well as a lack of capacity, and economic and financial opportunities to support small-scale, climate-resilient low carbon agriculture, drive the local communities towards unsustainable practices, which underpin a vicious cycle represented: as yields decline because of changing climate patterns, communities turn to over extraction of wood for charcoal production and clearing of new lands for agriculture.

#### Vulnerability of smallholder farmers

49. The ND-Gain Index<sup>34</sup> shows that Congo is the 44th most vulnerable country and the 12th least ready country. This index has been deteriorating over year (Figure 9) meaning that Congo's vulnerability to climate change is declining, along with its adaptive capacity. This suggests a great need for

<sup>31</sup> Ngeve et al. Research and Policies for Climate Change Adaptation in Central Africa Agriculture

<sup>32</sup> Platform that helps explore the effects of climate change on the yield of major crops. It is intended to support the quantitative integration of climate-related risks in agricultural and rural development investments and strategies, including economic and financial analyses (EFA). Various climate models are included in the tool for 17 major crops in nearly all African countries.

<sup>33</sup> For details about the underlying models, see <https://www.isimip.org/impactmodels/>

<sup>34</sup> The ND-GAIN Country Index summarizes a country's vulnerability to climate change and other global challenges in combination with its readiness to improve resilience.

investment and innovations to improve readiness and a great urgency for action.

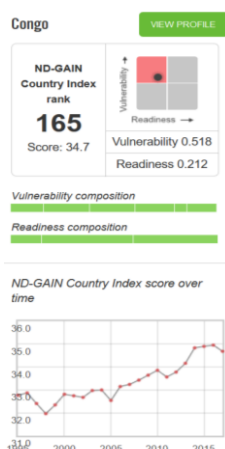


Figure 8: Congo's change in ND-Gain index over time<sup>35</sup>

50. Congo's agricultural sector is one of the most vulnerable. The agricultural sector is very under-developed and employs approximately 0.5 million people.<sup>36</sup> Its GDP contribution is stagnant at approximately 4%. In Southern Congo agriculture is essentially **rain-fed**, given the absence of irrigation systems in Congo, therefore highly dependent on the climate. Agriculture, including in the project area, is based **on very small farms of approximately 1 to 2 ha** that are **not mechanized** and that produce **90% of food crops**. Subsistence farming represents 80% of cultivated land estimated at 200.000 million ha out of 10 million ha of fertile land. Livestock farming is not developed so there is no income diversification for households who then **depend solely on crops**. **Cassava** is one of the main subsistence crops and is also extremely impacted by climate change, as indicated above. The impacts of climate change increases the country's food insecurity risk, and it is already **75% dependent on food imports to meet the needs of its population**.<sup>37</sup>
51. The 2019 UNDP human development index ranks Congo 138th with a score of 0.608 compared to 136th in 2018.<sup>38</sup> At the national level, although the share of the population living below the poverty fell from 51% to 41% between 2005 and 2011, the extreme poverty rate seems to have increased from 2016, **especially in rural areas** due to the drop in oil prices. In fact, the poverty rate rose to 40% in 2017 according to estimates, oscillating between its high level (51%) in 2005 and the lowest in 2016 (35%).<sup>39</sup> **Poverty affects more rural populations**, where seven out of ten people are poor, compared to urban ones. Despite the reduction in poverty in urban areas in relative terms, the absolute numbers of urban poor are high. The country is therefore still far from achieving SDGs 1 and 2. Brazzaville, for example, continues to house 20% of all the poor in the country according to a report by the World Bank (2017). Overall, **77% of the poor in Congo are in rural areas** and Brazzaville.
52. The world hunger index ranks Congo **106<sup>th</sup> out of 117 countries in 2019**. According to national surveys, the food and nutritional situation of the country remains worrying despite its natural assets. **The growing population and agricultural production often limited to subsistence, requires the Congo to resort to massive food imports** - about 600 billion FCFA in 2018 according to the MPISR - to meet urban demand for animal products (meat, milk, poultry, eggs, fish), and in basic products

<sup>35</sup> See: <https://gain.nd.edu/our-work/country-index/>

<sup>36</sup> World Bank, 2017

<sup>37</sup> World Bank, 2019

<sup>38</sup> <http://hdr.undp.org/sites/default/files/hdr2019.pdf>

<sup>39</sup> Banque Africaine de Développement- BAD. 2018. République du Congo : Document de Stratégie Pays 2018-2022.

Département Économie Pays- ECCE, Direction Générale Afrique Centrale, RDGC. Novembre 2018.

such as rice and onion.

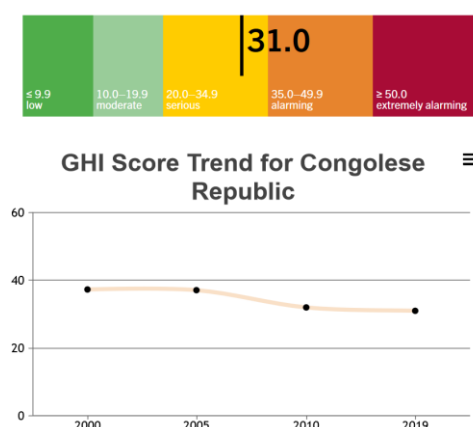


Figure 9: Global Hunger Index variation in Congo between 2000 -2019<sup>40</sup>

53. According to the results of a survey carried out by the government in partnership with the World Food Program (WFP) in 2013, food insecurity affects 14.2% of households at the national level, and is **greater in rural areas**. Of a total of 618.456 people food insecure, 545.634 people were moderately food insecure and the remaining 72.822 critically food insecure.<sup>41</sup> The malnutrition rate is high, with a total of 1.4 million people considered to be malnourished and 31% starving children.
54. Congo is ranked among the most unequal societies. According to World Bank's data on global development indicators related to inequality in 105 countries, Congo is ranked 90th in respect to the Gini coefficient. As for consumption by adult equivalent, the population with the highest income (upper quintile) was responsible for 45.9% of consumption, compared with only 5.6% for the population with the lowest income (quintile inferior). The same is true for gender inequalities for which Congo is not ranked well. The **scale of inequality and poverty further marginalizes certain groups, such as women, indigenous people and people with disabilities**. The marginalization of these groups cannot be easily mitigated if we consider that 65% of the poorest Congolese are in the six regions of the south of the country and that less than 4.9% of them benefit from a program of social protection.
55. The indigenous minorities, notably the Baaka or Mbendjele located mostly in the North, the Twa in the Center and the Babongo in the South, represent the most marginalized group in the country. According to the last census,<sup>42</sup> these populations are estimated at 43,378 individuals and they make up nearly 1.2% of the country population. They are mainly concentrated in three departments, which contain almost 76% of their workforce: Likouala, Lékoumou and Sangha with respectively 13,476, 11,456 and 7,885 native workers.
56. It has emerged from various sources that indigenous people are the most affected by the phenomenon of poverty, in addition to being marginalized in terms of access to the labor market and basic social services in health and education. Nearly 9 out of 10 indigenous people are poor and their rate of monetary poverty is more than twice that of the rest of the population; they work on their own account (77%) or are employed by a household (21%). According to the same source, the indigenous populations are paid less since they earn an average of 10,000 FCFA per month; while the other groups receive nearly 50,000 FCFA per month. This pay gap could be explained by the low level

<sup>40</sup> <https://www.globalhungerindex.org/congo.html>

<sup>41</sup> Résumé du document de la revue stratégique nationale, Programme Alimentaire Mondiale, 2018.

<sup>42</sup> RGPH, 2007

of education. Based on survey data from the 2011 demographic survey, the net primary enrollment rate and the secondary school enrollment rate are 46% and 2.6% for indigenous people, compared to 89% and 59% respectively for the Bantu.

The high vulnerability of smallholder farmers in Southern Congo make them extremely dependent on agriculture and forestry products with little to none livelihoods alternatives. Because of their precarious situation, smallholder farms are not in a position to start investing in low carbon, climate resilient activities without initial support.

#### E. Profile of the main agriculture and forest products value chains in southern Congo: productivity, demand, access to market

57. The main crops produced in southern Congo and in the project area are: cassava, cocoa, groundnut, banana/plantains. In addition to that, fuelwood is the main product from forests.
58. **Cassava:** Approximately 1.2 million tonnes of cassava are produced every year, representing 75 to 80% of food crop production, which is approximately 1.5 million tonnes per year.<sup>43</sup> The national agricultural development program (PNDA 2018-2022) aims at increasing the production of cassava from 4,629,222 tonnes in 2016 to 7,236,618 tonnes in 2022.
59. Cassava is a real economic subsector in Congo and is the leading agricultural sector. The value chains from cassava (chikwangue, fufu, etc.) are the main source of income in the countryside, as 90% of the Congolese population eats cassava or products derived from cassava. Although the urban population consumes less cassava (175 kg/year) than the rural population (425 kg/year), urban demand is an important and growing market. This domestic market is evaluated at USD 174 million.<sup>44</sup>
60. Production: At farm level. Cassava yields in Congo are very low. While as of 2020 they are of the order of 7 t / ha / year, they would have a potential of 25 to 30 t / ha / year. The margins for progress are therefore enormous. However, the average size of the farms (0.6 ha) and their location in dense forest in mountainous areas make it difficult to move to very advanced mechanization. The low agricultural yields are also explained by a lack of renewal of plant material and bad practices which favor the spread of cassava diseases and finally the lack of use of fertilizers. This is largely due to the lack of an effective extension service
61. Most cassava production takes place on the outskirts of large towns in the departments of Pool (27% of production) and Plateaux (11%) near Brazzaville and the departments of Bouenza (18%) and Lékoumou (10%), situated between Pointe-Noire and Brazzaville, and the departments of Kouilou (8%) and Niari (13%) near Pointe-Noire. The department of Cuvette (9%) also supplies Brazzaville. In other departments, cassava production is low and essentially for subsistence purposes.<sup>45</sup>
62. Cassava value chain in the project area: In the project area three large producers, ten medium producers as well as thirty small producers have been identified. Despite a more advanced mechanization compared to production operations, the post-harvest recovery process (cassava processing) is largely dominated by very heterogeneous artisanal processing practices. Large processing units remain rare.
63. Nevertheless, two large projects will be implemented in 2021 by a Chinese company and the

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<sup>43</sup> ADF, 2018

<sup>44</sup> World Bank, 2017

<sup>45</sup> SOFRECO, 2012



Continental Society for the Development of Economic Initiatives in Loudima in the department of Bouenza. These structures will constitute two major buyers of cassava tubers.

64. Four wholesalers were identified in the project area. Nevertheless, the function of marketing cassava roots and derived products is performed by a variety of direct and indirect actors (wholesale traders, retail traders, handlers, processors, transporters, etc.). It follows various channels depending on the type of product and the type of markets. The towns are supplied by road, rail and waterway.
65. The marketing of cassava and by-products takes place at several levels: (i) at the edge of the fields for fresh roots and cosettes, (ii) at the level of rural and urban markets, stations, landing zones, etc. for all types of products including cosettes, Chikwangue and retted dough.

**Table 5 : direct actors in the cassava value chain in the project area**

Entity Type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number	3	10	30	1	2	5	4
TOTAL	43			8			4

**Table 6 : indirect actors in the cassava value chain in the project area**

Entity Type	Service Providers				
	Inputs/Cuttings	Transport	Stock	Materiel	Other services
Number	3	2	1		2
TOTAL	3	2	1		2

66. It should be noted that there is no specialized transport for cassava products. Fresh roots and products derived from cassava are transported with all available means, alone or in combination with other products, whether food / agricultural or not.
67. There are no storage stores suitable for storing cassava tubers for several days. A non-refrigerated storage store for agricultural products has been identified in Loudima in the department of Bouenza.
68. **Cocoa:** Recently, the Congolese Government decided to revive cocoa cultivation and developed a National Development Plan for the Production of Cocoa (NDP, 2014-2018), aiming at regeneration and creation of 22,000 ha, with a yield of 1 ton per ha in year 7. To achieve this, the Government partnered up with private enterprises such as the Congolese company like Diamon Cocoa,<sup>46</sup> CIB-Olam established in Sangha and Likouala regions, and COFCOA established in Pointe-Noire, which is currently carrying out activities to revive cocoa cultivation in Sangha and Kouilou. Olam was a service provider to the government between 2012 and 2016 recruited to create nurseries and distribute cocoa plants and inputs to small-size farmers. Diamon Cocoa, also provides inputs and markets a portion of the harvested cocoa beans and provides financial and logistical support in packing the beans. This company has been operational since 2011. In order to help small-size farmers maintain their former plantations, this company provides credit of approximately 20% based on previous yields. It also provides agricultural tools.
69. However, the revival of cocoa operations seems limited by the government's financial constraints. In 2010, the producer price was five times higher in Cameroon (1.20 USD/kg) than in the Congo (0.40 USD /kg) because of cost level in the country and the size of the production (less than in Cameroon).<sup>47</sup> The producer price for cocoa remains also low, because of a lack of connection between producers

<sup>46</sup> Congo-MAE OLAM, 2014

<sup>47</sup> FAO Stat.



and buyers, as well as poor quality of the products.

70. The purchase price paid to producers is negotiated depending on international commodity prices with assistance from the Departmental Directorate of Agriculture. Transport between production sites and the Pointe-Noire maritime port, which is the export site, is either by boat or vehicle. The price per transported ton is approximately 2,050 USD.
71. **Production:** Cocoa producers are peasants, they produced around 2,300 tonnes of cocoa beans in 2012. These are family farms that together owned around 4,700 ha of cocoa trees on a median area of 2 ha each. However the average yield was very low (300 kg / ha) and the production of poor quality. The lack of support from the State to the farmers has resulted in the degradation of the quality of maintenance, a lack of access to inputs, the non-rejuvenation of the plantations, the non-respect of fermentation, drying and storage.
72. **Cocoa value chain in the project area:** there are one large buyer and one medium buyer respectively Wholesaler (CAFCOA) and Processor (OUAK Company) in the city of Pointe-Noire.
73. The two potential buyers are currently sourcing from Sangha producers located 800km from Brazzaville. However, the producers of Kouilou are located less than 200 km from Pointe-Noire. This is an opportunity for producers and future cocoa producers in Pointe-Noire.

**Table 7: Direct actors in the cocoa value chain in the project area**

Entity Type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number	0	0	1	0	2	0	2
TOTAL	0			2			2

**Table 8: Indirect actors in the cocoa value chain in the project area**

Entity Type	Service providers				
	Inputs	Transport	Stock	Materiel	Other services
Number	1	2	0		2
TOTAL	1	2	0		2

74. **Groundnut:** In Congo, there are two separate types of groundnut cultivation: subsistence farming to feed human and animals, generally managed by women, and industrial agriculture to produce oil or other industrial products, such as spreads. Subsistence farming is carried out in all small farms where groundnut cultivation is often combined with another crop. Industrial agriculture has decreased greatly with structural adjustments, for instance with the closure of the Nkayi oil-mill, which was producing 25,000 tonnes, and more generally with the successive crises. This factory is being rehabilitated by Eco-Oil in the department of Bouenza. Non-industrial groundnut are produced, processed and sold, essentially by women.
75. Groundnuts are cultivated most of the time in the savannah, in particular groundnuts in industrial cultivation; it is also cultivated by smallholder farmers on forest fallows less than 4 years old, which makes it possible to have better yields for small farms that do not use fertilizers (ADF, 2008).
76. Non-industrial groundnuts are produced, processed and marketed mainly by women. Overall, 70% of the agricultural labor force in small family farms are women in Congo. The average farm is 1.4 ha and there are 115,000 small farms managed by 145,000 workers who occupy an area of about 0.4 million hectares, which is not much given the size of the country (source PIASAN). For the moment, the central player in industrial value chain is the Eco-Oil company. However, the company is currently

working in partnership with smallholders who practice traditional agriculture.

77. Production: Groundnut production in Congo is in the order of 20,000 to 30,000 t per year, for comparison, that of Cameroon is in the order of 750,000 t and world production in the order of 40 million tons. Production of unshelled groundnuts in tonnes (source <http://www.fao.org/faostat/en/#compare>). (2017).
78. Groundnut production poorly covers the country's food needs. Consumption is estimated at 7.9 kg / person / year (PDCE, 2017) of shelled groundnuts, ie at the national level a consumption of around 60,000 t / year of unshelled groundnuts; the Congo producing 25,000 t / year of unshelled groundnuts, it covers only 41% of its needs.
79. The production of shelled groundnuts in the department of Bouenza in 2008 was 536 tonnes and 496 tonnes in 2009. The production of shelled groundnuts from Bouenza in 2008 was 163 tonnes and 153 tonnes in 2009 (Source DDA Bouenza). In Kouilou, the department produced 3000 tonnes of groundnuts in 2011 (Source: DDA Kouilou, 2011). In Niari, groundnut production was 3220 tonnes in 2011 (Source: DDA Niari, 2011). When in the Pool department, groundnut production was 223,567 tonnes on an area of 245,877 ha in 2009. (Source: DDA-Pool). It was the country's largest production in 2009.
80. Congo's population estimated at 5,125 million, i.e. a national consumption of 40,487 t/year shelled or if 3 kg of shelled groundnut produce 2 kg of shelled groundnuts, the national demand is 60,000 t/year of unshelled groundnut. Curiously, the Piasan report (Republic of Congo, 2018) indicates that the Congo covers 145% of the country's internal consumption needs in groundnuts.
81. Groundnut value chain in the project areas: The department of Bouenza is the largest groundnut production basin, followed by the departments of Pool and Niari. In the project area, 49 direct actors in the groundnut value chain were identified. Two medium-sized groundnut producers have been identified in Loudima: *Groupe Terre Doumboula* with 34 hectares of groundnuts and UST with 15 hectares. For most small producers the areas vary between 1 and 5 hectares.
82. The largest processor and buyer of this product would be the Eco Oil company located in the district of Kayes, department of Bouenza. The transformation activities for this structure will be effective during the first quarter of 2021.
83. The companies AGRIDECK in the department of Niari and EMBOTO in the department of Pointe Noire are currently two medium-sized groundnut-paste processing structures. They are mid-sized groundnut buyers. There are also small processors in each of the localities visited.
84. The *Groupe Terre Doumboula* and the *Groupe la Semence* are groundnut wholesalers at the local level and in Pointe-Noire.

**Table 9 : direct actors in the groundnut value chain in the project area**

Entity Type	Producers			Transformers			Wholesaler
	Large	Medium	Small	Large	Medium	Small	
Number	1	2	35	1	2	6	2
TOTAL	38			9			2

**Table 10: Indirect actors in the groundnut value chain in the project area**

Entity Type	Service Providers				
	Inputs	Transport	Stock	Materiel	Other services
Number	2	2	1	2	2
TOTAL	2	2	1	2	2

85. Eco Oil remains the leading groundnut seed distribution structure in the department of Bouenza. The leaders of this structure are working with IRA with to produce improved groundnut seeds in the early 2021 which will subsequently be made available to producers.
86. There is a warehouse for agricultural products in Loudima. This is a state asset, the management of which has been entrusted to the company OMEGA Agro Export. The latter's activities are still timid.
87. Groundnut transport service providers are not professional. The services are not of high quality and producers often complain about the losses recorded during the various transports of their goods.
88. Several structures for providing equipment services in the various operations from plowing to harvest exist, however the supply remains very low compared to demand.
89. As of today, Eco-Oil or large farms run by foreign entrepreneurs are, for the moment, the only ones capable of developing this industrial groundnut agriculture in Congo. Eco-Oil's goal is to have 160,000 tonnes of unshelled groundnuts from 80,000 ha to supply its plant. Groundnut yields with the use of inputs could potentially reach 2.5 t / ha, Eco-Oil is targeting just 2 t / ha. Production, for its part, peaked in the mid-1990s at 30,000 t, then fell, to around 26,000 t in 2015.
90. **Banana plantain:** Bananas are one of the key crops in family agriculture. Bananas are grown all over Congo, but some regions are more specialized in the production of bananas: Niari, Kouilou, Sangha, Likouala and Pool for the regions targeted by the Project. This activity employs almost 0.5 million farmers, including 70% women, and generates 90% of the country's agricultural production on very small farms of 1-2 ha.<sup>48</sup> After cassava, the value chain for banana is one of the main sources of income in the countryside. Again, after cassava, banana is one of the preferred foods in Congo. 30 kg is consumed per person per year. It is therefore both a subsistence crop and a cash crop.<sup>49</sup>
91. Banana plantain is mostly for self-consumption, the rest is being sold. The sale depends on the arrival of collectors whose costs are partly linked to the state of the road infrastructure, itself dependent on public investments and the means and choices of the State. In the departments of Pool and Plateaux, closer to the urban market of Brazzaville, farmers benefit from more agricultural services, they have access to mechanized agricultural services that save on labor and also obtain more elaborate ground preparations (much deeper plowing, for example).
92. Producer prices vary greatly depending on the time of year, in times of shortage and in the event of political crises. Mobile telephony and remote payment systems are recent innovations, which make it possible to directly link producers to sellers in the markets. This reduces the role of collectors and may allow producers to capture more of the added value. It is certainly the most important innovation along the value chain in recent years.
93. Transport is also a problem for producers. When their production is ripe, with no transport available right away, they can lose partially it. The uncertainty on the selling price is also mainly related to transport, the costs varying seasonally depending on the state of the network and the quality of the production.
94. Production: Approximately 80,000 tonnes of bananas are produced in Congo every year, which is 5% of the total food crop production of 1.5 million tonnes per year. The country only covers a fraction of

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<sup>48</sup> World Bank, 2017

<sup>49</sup> PDCE (*Projet de Développement des Compétences pour l'Employabilité* [Education and Skills for Productive Jobs Education and Skills for Productive Jobs]), 2017

its food needs, approximately 40 to 60% for plantains (PDCE, 2017).<sup>50</sup> Congo also imports plantains from the DRC and, to a lesser extent from Cameroon (PDCE, 2017). Producers are generally small family farmers sometimes groups of farmers who cultivate plantains in association with other crops. The production takes the form of home gardens or agroforestry systems. These farms are less than 1 ha and are often run by elderly people who have few inputs. There are producers, much rarer, who have several dozen hectares and the means to invest in their production.

95. Banana plantain value chain: The Bouenza department is also the largest plantain production basin, followed by the Niari departments and the plateau. In the project area, 21 direct players in the banana value chain were identified. Two medium-sized plantain producers have been identified in Loudima: *Groupe Terre Doumboula* with 7 hectares of bananas and *Groupe Bâtir* with 5 hectares. For most small producers the areas vary between ½ hectare and 5 hectares. There is an absence of a formal banana processor. Most of the production is sold without being processed.
96. The buyers of bananas are wholesalers, mostly from the cities of Pointe-Noire and Brazzaville. The two groups mentioned above are also two wholesalers of bananas which are marketed in Pointe-Noire.

**Table 11: Direct actors in the banana plantain value chain in the project area**

Entity Type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number		2	17	0	0	0	2
TOTAL	19						2

**Table 12: Indirect actors in the banana plantain value chain in the project area**

Entity Type	Service Providers				
	Inputs	Transport	Stock	Materiel	Other services
Number	2	2	1		2
TOTAL	2	2	1		2

97. **Maize**: Maize is the main raw material in the manufacture of livestock feed, of which 60% consists of corn. The maize sector is very little developed in Congo despite the major role it plays in animal production, in particular poultry. Maize cultivation is traditionally associated with other productions (cassava, vegetables), it is rarely a monoculture.
98. Production: The objective of the PNDA 2018-2022 is to increase maize production from 20,700 tonnes in 2016 to 45,000 tonnes in 2022. The majority of producers cultivate small areas rarely exceeding 2 ha per farm. However, there are more and more large commercial corn farms in the country in order to meet the growing demand for the animal industry. Maize is the main raw material in the manufacture of animal feed (60%). In Congo, agroecological and meteorological conditions are favorable for growing maize in most regions of the country. Maize cultivation is mainly practiced in forest areas with slash-and-burn techniques.
99. The demand for corn for animal feed is expected to increase dramatically in the future, with the development of improved and more intensive production systems for milk, poultry and eggs, which require foods of good nutritional quality than only manufacturers can provide. Indeed, maize

<sup>50</sup> PCDE, 2017

processing is an attractive agro-industrial activity financially. A comparison of the price of industrial flour (400 to 600 FCFA / kg) with the producer price of maize (145 FCFA / kg on average at the start of the season) shows that processing is a profitable activity, even taking into account a 30 to 40 percent weight loss in the process.

100. The supply of livestock feed (mainly maize, vitamin and trace element supplements) remains difficult in the country: it is irregular, expensive, of low quantity or of poor quality. In addition, farmers do not always have the appropriate equipment for processing raw materials (crusher, mixer) and storage is often unsuitable (absence of silos, storage in bags, presence of weevils). The cost of feed in Congo is double the prices charged in the sub-region, which leads poultry entrepreneurs to source from neighboring countries like Cameroon. The kilo of corn is sold between 200F and 300F in Congo, which weighs heavily on production costs and influences the competitiveness of products. This option of sourcing from the sub-region is not economically accessible to modest entrepreneurs. In particular, maize, which is one of the most important ingredients in animal feed, is very expensive because it is imported from other countries in Africa or even from Europe. This situation hinders and limits entrepreneurial initiatives in the poultry sector because the products here from this breeding are not competitive vis-à-vis products imported on a massive scale.
101. Maize value chains: Regarding commercial farms, we can cite the company CODDIPA (Congolaise for the Development and Distribution of Agro-Food Products) which planned the production of 13,000 tonnes of corn, 4,000 tonnes of soybeans, 20 million eggs and 1,500,000 day-old chicks in order to take advantage of existing market opportunities in the country in the food industry. For the specific case of corn, the company has already sown in the course of this year 2019, 200 ha of corn with an estimated yield of 3 tonnes per hectare.
102. There is also the company SARIS which supports small producers engaged in the corn sector in Congo and could be interested in purchasing maize.

**Table 13: Direct actors in the maize value chain in the project area**

Entity type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number	2	5	33	2	4	6	7
TOTAL	40			12			7

103. **Avocado**: Demand for avocado is supported by the health benefits attributed to this fruit, due to its very high nutritional value. At the level of the department of Bouenza, avocado production was 2 tonnes in 2008. In the Plateaux, avocado production was: Djambala-Lekana: 134 tonnes in 2010. (Source: Departmental Directorate of Agriculture, 2010. For the department of Pointe-Noire, avocado production was 15.00 tonnes in 2010. Source: Annual activity report for the agricultural sectors of Tié-Tié and Loandjili (2010). The Department of Pool planted 10,670 avocado trees in 2009. (Source: DDA-Pool).

**Table 14: Direct actors in the avocado value chain in the project area**

Entity type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	

Number	0	3	15	0	0	0	5
TOTAL	18			0			5

104. **Orange:** Citrus fruit production in the Bouenza department was 280 tonnes in 2008 and 259 tonnes in 2009. In the Niari department, citrus production was 52 tonnes in 2011 (Source: DDAN, 2011). In the department of Pool, the number of citrus plants was 3278 in 2009. (Source: DDA-Pool).

**Table 15: Direct actors in the orange value chain in the project area**

Entity type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number	0	0	19	0	0	0	5
TOTAL	19			0			5

105. **Safou:** The safoutier (*Dacryodes edulis* (G.Don) H.J. Lam; Burseraceae) is a fruit tree long been exploited by the populations of Central Africa, mainly for its edible fruits, and also for its leaves and bark used in traditional pharmacopoeia. The fruits of the safoutier (safou), locally called atanga, are very popular and are used both for home consumption and for marketing.

**Table 16: Direct actors in the orange value chain in the project area**

Entity type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number	0	2	11	0	0	0	2
TOTAL	13			0			2

#### Aubergine:

**Table 17: Direct actors in the aubergine value chain in the project area**

Entity type	Producers			Transformers			Wholesalers
	Large	Medium	Small	Large	Medium	Small	
Number	0	1	20	0	0	0	5
TOTAL	21						5

106. **Fuelwood collection:** Fuelwood (firewood and charcoal) accounts for 53% of national energy consumption and is the main source of energy for 90% of households. According to the FREL, the exploitation of fuelwood was responsible for 0.3 MtCO<sub>2</sub>/year of estimated emissions over the historical 2000–2012 period.<sup>51</sup> Most of the fuelwood from natural formations supplying the towns of Brazzaville and Pointe Noire comes from the **slash-and-burn system**.<sup>52</sup> Wood is the main source of energy currently used in households, particularly for cooking. Throughout the country this is the only easily accessible domestic energy source. With the demographic pressure in the large urban centers (961.5 inhabitants/km<sup>2</sup> in Pointe-Noire and approximately 1,100 inhabitants/km<sup>2</sup> in Brazzaville in 2007) intensified by the rural exodus, supplies of wood and charcoal are real problems to forest conservation.<sup>53</sup> According to the Second national communication (2009), energy consumption is expected to increase at a 3.4% annual rate – higher than the population growth rate of 2.8% – up to 2030, mostly driven by fuelwood consumption.

<sup>51</sup> The energy sector in Congo is the second largest source of GHG emissions, after the land-use change and forestry (LUCF) sector with about 5.23Mt (10.5%) of total CO<sub>2</sub>eq emitted in 2016.

<sup>52</sup> Nkoua & Gazull, 2010

<sup>53</sup> Country Programming Framework 2013-2016. FAO

**Table 18: Proportion of energy use by source in the main two cities of Congo**

Type of energy	% Used by the population	
	Brazzaville	Pointe-Noire
Fuelwood	67.10	48.50
Gas	21.30	40.20
Petroleum	9.90	8.50
Others	1.70	2.80

107. The overall fuelwood consumption level by households in the Republic of Congo of 1,486,280 tonnes. This data relates to 257,999.97 tonnes of firewood and 1,229,279.94 tonnes of wood processed into 153,659.99 tonnes of charcoal. The proportion of charcoal consumed in Pointe-Noire represents 86% of total fuelwood consumption and that of Brazzaville, 87%. The yield rate for traditional charcoal making is 12%. **In 2024, fuelwood supply needs will exceed 1 million tonnes and 460,000 tonnes of firewood equivalent for Brazzaville and Pointe Noire respectively.**
108. According to the Second national communication (2009), energy consumption is expected to increase at a 3.4% annual rate – higher than the population growth rate of 2.8% – up to 2030, mostly driven by fuelwood consumption.
109. Given the advanced degradation of the forest areas closest and most accessible to the main cities of the country, forest plantations could constitute one of the main sources or an essential complement to guarantee a sustainable supply of fuelwood in the medium and long term to these populated areas. Considering the fuelwood consumption and demand, an equivalent of **257 000 ha of wood energy plantation would be needed by the country**, if no fuelwood comes from other sources (Republic of Congo, 2014<sup>54</sup>). For the supply of Brazzaville and Nkayi only, 47,500 ha of plantations would be needed. As far as these needs would not be met, the smallholders and farmers are going to continue to collect fuelwood from forested area, which is going to pursue deforestation and forest degradation.
110. Fuelwood supply for Pointe-Noire: The supply basin for the town of Pointe-Noire is located in the department of Kouilou. This department is characterized by **eucalyptus forests** with a current area of 36,000 ha, which is **regressing due to land pressure** related to expansion of the town of Pointe-Noire and unregulated logging by the local people for **charcoal production**. Savanna and bare soils represent an area of 324,615 ha. The forest environment is heterogeneous and consists of the natural formations in Mayombe, and fairly old.<sup>55</sup> In Pointe-Noire, the supply basin extends over more than 100 km and transport represents 15 to 20% of the value of a bag of charcoal. In 2010, more than 50% of fuelwood supplying the town of Pointe-Noire came from the eucalyptus plantation on the outskirts of the town. Fuelwood supplies from natural formations mainly came from the Mayombe forests. The four main fuelwood supply routes for Pointe-Noire are: (1) National Road no. 1 or the Brazzaville Road, which covers the sub-basin of Hinda-Makola; (2) National Road no. 4 or the Cabinda road which covers the sub-basin of Tchiamba-Nzassi; (3) National Road no. 5 or the Gabon road, which covers the sub-basin of Kouilou-Madingo Kayes; and (4) The Kissoko forest track, which covers the sub-basin of

<sup>54</sup> See

<https://www.forestcarbonpartnership.org/sites/fcp/files/2016/Aug/BRLI%20%282014%29%20Spatial%20analysis%20of%20drivers.%20final%20report.pdf>

<sup>55</sup> SOFRECO, 2012



Tchissoko. Fuelwood mainly comes from trees felled for agricultural development.

111. Fuelwood supply for Brazzaville: the main fuelwood supply basin for Brazzaville is located in the department of Pool. This department is characterized by savanna and bare soils, representing an area of 3,028,662 ha. The heterogeneous forest environment is made up of gallery forests (405,764 ha) and degraded gallery forests (20,971 ha).<sup>56</sup> In this degraded forest complex, there is also old fallow land. Fuelwood that supplies the town of Brazzaville comes from **forest formations** in the area south of Brazzaville (south Pool) and **gallery forests** situated on the Batéké plateau (north Pool). The main supply routes for the town of Brazzaville are the following: (1) The Mayama route and its feeder roads; (2) The Kinkala route and its feeder roads; (3) The Nganga Lingolo – Mbanza Ndounga route; (3) The Imvumba route and its feeder roads; and (4) The river route and Mbamou Island.<sup>57</sup> Fuelwood mainly comes from trees felled for agricultural development. Charcoal is produced using the traditional technique and all wood is used to produce charcoal. The produced fuelwood is then sent to Brazzaville to be sold through wholesalers and retailers.
112. Given the advanced degradation of the forest areas closest and most accessible to the main cities of the country, forest plantations could constitute one of the main sources or an essential complement to guarantee a sustainable supply of fuelwood in the medium and long term to these populated areas. Considering the fuelwood consumption and demand, an equivalent of 257 000 ha of wood energy plantation would be needed by the country, if no fuelwood comes from other sources (Republic of Congo, 2014).
113. Access to fuelwood: There are three ways of accessing wood for fuelwood. The first concerns the individual owners of an area who can do the logging themselves or, more often, delegate based on an agreement with producers for remuneration or a share in the production profits. The second concerns non-native populations who lease a section of land for access to timber from the land chiefs, called “land owners” in villages situated in the supply basins. The third concerns native populations (belonging to the family line or clan), who have free access to wood resources through kinship.

#### Crops demand and feasibility for PREFOREST

114. During the formulation phase, PREFOREST has initiated concrete discussion with key partners such as IFAD, WFP and private sector representatives to ensure sustainability of the production of PREFOREST.
115. In light of the above mentioned opportunities and barriers identified in the section above, the following will be put in place by PREFOREST.
116. Ensure efficient transport, transformation and storage to ensure high quality products: PREFOREST will coordinate and partner with IFAD PAJE project to ensure the high quality of the PREFOREST crops as well as their access to market, identified as:
- i) Poor organization of transportation of crops leading to loss of quality, which includes weak organization in terms of transportation planning and weak organization in terms of truck storage. In fact, often smallholder farmers wait for hours / days for transport/trucks to arrive, leaving crops on the street under the sun. Also, crops are stored in the truck in an inefficient way, which damages the crops and reduces their quality
  - ii) Weak transformation as basic drying process (for example for maize targeting the beer

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<sup>56</sup> Boudnzanga, 2004

<sup>57</sup> SOFRECO, 2012



companies) and storage skills, leading to decreasing quality of the product as well as crop losses

- Under activity 3.4.2. co-financed by IFAD, PREFOREST will support capacity building for improved transport organization and improved capacity for transformation and storage aiming at ensuring high quality of the PREFOREST products. In fact, IFAD PAJE will target PREFOREST crops for its support. In addition, the business plans to be submitted to MFIs for funding may also include the financing of transport and storage facilities. Furthermore, IFAD is currently negotiating with the international bank BADEA (*Banque arabe pour le développement économique en Afrique*) for potential future leverage funds aiming the purchase of additional truck to transport crops under PREFOREST, and equipment for potential storage and transformation of the products. This will depend of the needs of the beneficiaries and the content of the business plans to be developed.

117. Securing buyers for PREFOREST crops: In order to ensure sustainability of the high quality products produced under the project, FAO has contacted the main buyers in the project area and has already received 9 letters of intentions from various private sector entities to purchase the crops produced under PREFOREST (see table 43 under activity 3.4.1)
118. **Cassava**: A letter of intent from *Société Continentale de Développement des Initiatives Economiques (SCDIE)* has been received to purchase 30,000 tons per year. As the PREFOREST aims at producing around 22,000 tonnes of cassava per year, the purchase from SCDIE could cover easily the entire production per year. The project could even produce more cassava as other letters of intent for cassava purchase have been also received from AGRIDECK (for an estimate of 450 tonnes per year), a weekly delivery of cassava to Zando Market and 6,300 tonnes demand from Hani Transformation company.
119. Additionally, at implementation stage FAO will liaise with the two large projects that will be implemented in 2021 by a Chinese company and the Continental Society for the Development of Economic Initiatives in Loudima in the department of Bouenza to establish purchase agreements.
120. **Cocoa**: FAO already obtained a letter of interest from COFCAO and EPPAVPA (*Entreprise de Production, Protection, d'Achat et Vente de Produits Agricoles*) to purchase the cocoa produced by PREFOREST. EPPAVPA alone aims at purchase 150 tonnes of cocoa per year from the 8<sup>th</sup> year of the project. As the PREFOREST aims at producing 152 tonnes of cocoa per year, the purchase from EPPAVPA and COFCAO would cover all the project production. COFCAO is even interested to invest more for additional production. For this purpose, the project is confident for the purchase of the entire cocoa production supported by the project.
121. **Groundnut**: There is a need to partner with Eco-Oil as a direct buyer of the groundnut produced under PREFOREST. In this regards, a letter of intent from EcoOIL to purchase groundnut from the PREFOREST beneficiaries has been received. EcoOIL aims at purchasing the equivalent of the 50,000 ha of groundnut production per year. As the PREFOREST aims at producing up to 3,000 tonnes maximum per year, this would cover 1 month's Eco-Oil groundnut needs.
122. FAO has also received a letter of intent from *Société Continentale de Développement des Initiatives Economiques (SCDIE)* for aiming the purchase of 10 tonnes of groundnuts for local consumption.
123. PREFOREST will also benefit from the improved seeds produced with IRA following FAO's quality standards.
124. **Banana plantain**: FAO has received letters of intent from *Société Continentale de Développement des Initiatives Economiques (SCDIE)* for aiming the purchase of 1,500 tonnes of plantains / banana, a

letter of intent from Zando Markets for 1 tonne per year and another one from Tolona company for 300 tonnes per year.

125. **Maize:** FAO has already started negotiations with CODDIPA for the purchase of maize. It has been estimates that CODDIPA needs are 13,000 tonnes per year, currently not covered.

126. **Fuelwood:** as mentioned in the section above, demand for fuelwood is rapidly increasing in the project area. PREFOREST interventions will include the establishment of tree systems to be planted in already degraded areas that can also be used for fuelwood to avoid additional deforestation of natural forests.

127. At implementation stage, FAO will continue liaising with additional potential buyers to and link them with the PREFOREST beneficiaries. At formulation stage, potential buyers in the project areas have already been identified as follows:

**i) Food companies**

128. Food businesses are made up of catering companies, supermarkets and local restaurants.

There are 3 medium size catering companies in the project area:

**Table 19: List of catering companies in the project area**

CATERING COMPANY	Could be Interested in buying the following crops	LOCATION	DEPARTEMENT
PELLEGRINI	orange, safou, avocado, cassava, banana	Pointe-Noire	Pointe-Noire
SODEXO	orange, safou, avocado, cassava banana	Pointe-Noire	Pointe-Noire
ROYAL COST SERVICES	orange, safou, avocado, cassava, banana ...	Pointe-Noire	Pointe-Noire

There is one large company for distribution of agriculture products in the project area

**Table 20: List of large company for distribution in the project area**

CATERING COMPANY	Could be interested in buying the following crops	LOCATION	DEPARTEMENT
SADI SA	orange, safou, avocado, cassava, banana	Brazzaville, Pointe-Noire	Brazzaville, Pointe-Noire

There are four supermarkets in the project area

**Table 21: List of supermarkets in the project area**

SUPERMARKETS	Could be interested in buying the following crops	LOCATION	DEPARTEMENT
GROUPE SCORE CONGO Magasins Casino	orange, safou, avocado, cassava, banana	Brazzaville, Pointe-Noire	Brazzaville, Pointe-Noire
PARK N' SHOP CONGO	orange, safou, avocado, cassava, banana	Brazzaville, Dolisie, Pointe-Noire	Brazzaville, Niari, Pointe-Noire
SKD MARKET	orange, safou, avocado, cassava, banana	Pointe-Noire	Pointe-Noire
ZANDO MARKET	orange, safou, avocado, cassava, banana	Brazzaville, Pointe-Noire	Brazzaville, Pointe-Noire

There are two detail shops selling made in Congo products in the project area:

**Table 22: List of detail shops in the project area**

Detail shop	Could be interested in buying the following crops	LOCALITE	DEPARTEMENT
<b>IFOATSI PREFINA (Coopérative LIBOTA)</b>	orange, safou, avocado, cassava, banana	Pointe-Noire	Pointe-Noire
<b>SHOP UNION</b>	orange, safou, avocado, cassava, banana	Pointe-Noire	Pointe-Noire

## ii) Institutional buyers

129. Institutional buyers are the most important buyers of agricultural products from beneficiaries. About 35% of farmers' production will be purchased by institutional buyers.

There are ten transformation companies in the project area:

**Table 23: List of transformation companies in the project area**

COMPANY	Could be interested in buying the following crops	LOCATION	DEPARTEMENT
<b>SGMP SOMDIA</b>	maize	Nkayi et Pointe-Noire	Bouenza et Pointe-Noire
<b>ECO OIL ENERGY</b>	groundnut	Kayes	Bouenza
<b>LAITERI BAYO</b>	oranges	Brazzaville	Brazzaville
<b>TOLONA SA</b>	maize	Loudima	Bouenza
<b>SCDIE</b>	orange, safou, avocado, cassava, banane	Brazzaville, Kinkala, Loudima	Brazzaville, Pool et Bouenza
<b>SAMIO</b>	oranges	Brazzaville	Brazzaville
<b>AGRIDECK</b>	cassava, groundnut	Louvakou	Niari
<b>ENOCE BIO</b>	oranges	Pointe-Noire	Pointe-Noire
<b>COPRAC SARL</b>	oranges	Pointe-Noire	Pointe-Noire
<b>HANI TRANSFORMATION</b>	cassava	Dolisie	Niari

There are 8 cooperatives for transformation in the project area:

**Table 24: List of cooperatives in the project area**

NAME	Could be interested in buying the following crops	LOCATION	DEPARTEMENT
<b>GROUPEMENT ABBON</b>	orange	Madingou	Bouenza
<b>GROUPEMENT TOLERANCE AGRO</b>	maize, cassava	Madingou	Bouenza
<b>LAURIZ BIO</b>	groundnut	Dolisie	Niari
<b>SOURCE D'EAU VIE</b>	oranges	Pointe-Noire	Pointe-Noire
<b>COOPERATIVE ESPACE VERT</b>	maize	Pointe-Noire	Pointe-Noire
<b>SISI SERVICES</b>	oranges	Pointe-Noire	Pointe-Noire
<b>OUAK</b>	cacao	Pointe-Noire	Pointe-Noire

There are 5 clusters presents collecting and selling the products in the project area

**Table 25: List of clusters in the project area**

CLUSTER	SPECULATIONS	LOCALITE	DEPARTEMENT
<b>SALA NGOLO</b>	fruits (ananas, mangue, orange, ...)	Brazzaville	Brazzaville
<b>CONSOMMONS LOCAL</b>	fruits (ananas, mangue, grenadille, gingembre...), moringa, ...	Brazzaville	Brazzaville
<b>UNION POUR UNE AGRICULTURE COMPETITIVE</b>	fruits(ananas, mangue, orange, safou, avocat...), PFNL, manioc, banane	Brazzaville	Brazzaville
<b>TO SALA</b>	fruits (ananas, mangue, orange, grenadille...)	Brazzaville	Brazzaville
<b>PONTON AGRO</b>	fruits (ananas, mangue, orange, grenadille, gingembre, ...)	Pointe-Noire	Pointe-Noire

### iii) Local markets

130. There are several local farmers' markets in each of the different project districts. Some markets are open seasonally, while others are open on weekends or daily. Farmers sell crops and staple foods in these markets in order to quickly obtain cash to meet urgent household needs.

**Table 26: List of loca markets in the project area**

LOCAL MARKETS	Could be interested in buying the following crops	LOCATION	DEPARTEMENT
<b>MARCHE LOCAL DE MADINGOU</b>	oranges, safou, avocado, cassava, banana	MADINGOU	BOUENZA
<b>MARCHE LOCAL DE KAYES</b>	oranges, safou, avocado, cassava, banana	KAYES	BOUENZA
<b>MARCHE LOCAL DE NKAYI</b>	oranges, safou, avocado, cassava, banana	NKAYI	BOUENZA
<b>MARCHE LOCAL DE LOUDIMA</b>	oranges, safou, avocado, cassava, banana	LOUDIMA	BOUENZA
<b>MARCHE LOCAL DE LOUVAKOU</b>	oranges, safou, avocado, cassava, banana	LOUVAKOU	NIARI
<b>MARCHE LOCAL DE DOLISIE</b>	oranges, safou, avocado, cassava, banana	DOLISIE	NIARI
<b>MARCHE LOCAL DE NGO</b>	oranges, safou, avocado, cassava, banana	NGO	PLEATEAUX
<b>MARCHE LOCAL DE MPOUYA</b>	oranges, safou, avocado, cassava, banana	MPOUYA	PLEATEAUX
<b>MARCHE LOCAL DE KINKALA</b>	oranges, safou, avocado, cassava, banana	KINKALA	POOL
<b>MARCHE LOCAL DE NGABE</b>	oranges, safou, avocado, cassava, banana	NGABE	POOL
<b>MARCHE LOCAL DE IGNE</b>	oranges, safou, avocado, cassava, banana	IGNE	POOL

### iv) Urban wholesalers and retailers

131. These are weekends and / or daily markets located in large cities (eg Brazzaville, Pointe Noire, etc.). Rural intermediaries provide intermediation services between producers and these urban market

buyers. The project identified and initiated discussions with around ten rural intermediaries during the formulation phase in each of the five departments.

**Table 27: List of wholesalers and retailers in the project area**

Wholesalers and retailers	Could be interested in buying the following crops	LOCALITE	DEPARTEMENT
MARCHEDE TOTAL	oranges, safou, avocado, cassava, banana	BACONGO	BRAZZAVILLE
MARCHE DE POTO-POTO	oranges, safou, avocado, cassava, banana	POTO-POTO	BRAZZAVILLE
MARCHE LOCAL DE TALANGAI	oranges, safou, avocado, cassava, banana	TALANGAI	BRAZZAVILLE
MARCHE LOCAL DE MOUNGALI	oranges, safou, avocado, cassava, banana	MOUNGALI	BRAZZAVILLE
MARCHE LOCAL DE OUENZE	oranges, safou, avocado, cassava, banana	OUENZE	BRAZZAVILLE
MARCHE LOCAL DE NFILOU	oranges, safou, avocado, cassava, banana	NFILOU	BRAZZAVILLE
GRAND MARCHE	oranges, safou, avocado, cassava, banana	POINTE-NOIRE	POINTE-NOIRE
MARCHE LOCAL DE NKOUIKOU	oranges, safou, avocado, cassava, banana	POINTE-NOIRE	POINTE-NOIRE
MARCHE LOCAL DE FOND TIE-TIE	oranges, safou, avocado, cassava, banana	POINTE-NOIRE	POINTE-NOIRE
MARCHE LOCAL DE LOANDJILI	oranges, safou, avocado, cassava, banana	POINTE-NOIRE	POINTE-NOIRE
MARCHE LOCAL DE SIAFOUMOU	oranges, safou, avocado, cassava, banana	POINTE-NOIRE	POINTE-NOIRE
MARCHE LOCAL DE VINDOULOU	oranges, safou, avocado, cassava, banana	POINTE-NOIRE	POINTE-NOIRE

132. A demand in the following crops exists also at local and regional level, considering the content of the letter of intent received from several companies and entities (SCDIE, Agrideck, Tolona, Cluster Union pour une agriculture compétitive, etc.): mangos, litchis, papaya, and pineapples amongst others. This information will be considered during the development of the business plans by the project beneficiaries and during the identification of the crops to be integrated within the demand-driven groforestry systems.

### *Microfinance in the agriculture sector*

(please refer to FS Annex 5 and 6 for full assessment of MFIs)

133. **Institutional framework related MFI sector:** As of December 2015, Congo has eleven type financial institutions, including 85 microfinance institutions (MFIs). These MFI include:

- (i) 34 Congolese Savings and Credit Union (*Mutuelles Congolaises d'Epargne et de Crédit - MUCODEC*) which dominates the sector, representing 40% of MFIs and more than 90% of outstanding amounts in the sector;
- (ii) 51 independent MFIs; and
- (iii) 30 Savings and Credit Unions (*Caisses Mutuelles d'Epargne et de Crédit – CMEC*) which are rural funds created by the various projects of the Ministry of Agriculture. The rural sector is still hardly affected by microfinance, as more than 60% of MFIs are located in the two large

urban centers (Brazzaville and Pointe-Noire). Financing institutions concentrated in urban areas have little interest in agriculture outside of CMECs.

134. **Financing mechanism in the agriculture sector:** There are four important financing mechanisms in the agriculture sector: (i) Financing through public institutions; (ii) Equity and quasi-equity financing; (iii) Financing through bank credit or MFI; and (iv) Financing through revolving funds or 'Tontine'.
135. Public financing has various funding mechanisms created by the government and its partners. This is the case of Agriculture Support Fund (*Fonds de Soutien à l'Agriculture* - FSA), the Support Program for the Development of Agricultural Sectors (*Programme d'Appui au Développement des Filières Agricoles* – PADEF), the Commercial Agriculture Development Support Project (*Projet d'Appui au Développement de l'Agriculture Commerciale* – PDAC).
136. Equity financing is an internal financing method, for producers, agro-industrialists or the agricultural enterprise, carried out using cash or through contributions from cooperative members or associates. Producers and groups of Congolese agricultural producers have a very low level of equity. Equity financing is the most widespread mode of financing agriculture in the Congo, since producers have difficult access to bank credit to finance investments and their working capital. Quasi equity is halfway between equity and debt and consist of subsidies coming from the State, a project, local communities, and associates' current accounts, which are advances made by associates to the company. Unlike share capital, they can be withdrawn at any time. They are similar to equity, if they are considered stable that is to say intended to remain in the business for the long term.
137. **The majority of agricultural producers in Congo have difficult access to financing from bank or MFI.** Banks or MFI could make available to a producer, group of agricultural producers or an agricultural enterprise, a capital that it undertakes to reimburse according to the predefined conditions. There are two types of bank or MFI: medium and long-term finance to finance the investment cycle and short-term finance to finance the operating cycle. Throughout its life cycle, an agricultural business is required to apply for investment loans for: (i) the initial investment (agricultural equipment, right to lease, etc.); (ii) the maintenance or modernization of its production apparatus; (iii) development (acquisition of new agricultural equipment or land, agricultural companion, product diversification). The bank or microfinance institution intervenes in the financing of the operating cycle when the suppliers' deadlines and working capital are insufficient to finance the needs arising from the working capital requirement (receivables, inventories). It depends on the activity of the company: long for production or manufacturing companies and short for trade. Short-term credits take the form of credit lines made available to the company against payment of interest.
138. Revolving funds or 'Tontine' (Likélémba, Kitémo) is a popular savings and credit system, which consists in the association of people who know each other and want to pool capital and lend money to each other for a period of time. In general, the most common practices consider two main types of tontines: (i) Tontines which are based on a principle of circular reciprocity as a resource allocation mechanism. The participants agree to pay a predetermined amount at a given frequency and, at each payment round, one of the participants is designated to be the recipient of the funds of the other participants. When everyone has received as much as they have paid, the group is defeated, unless the participants decide to start again. For the first recipient, the tontine is like a credit. For the last participant, the tontine is like savings; (ii) Tontines in which participants agree to pay a minimum amount at a given frequency. Contributors can borrow an amount up to the available capital according to rules and procedures defined by the group, generally including interest. The group defeats at a given deadline, each participant recovers his stake and the interest received is distributed

in proportion to the contributions. This last method of financing is rarely used by agricultural producers and agro-industrial MSMEs.

**Table 28: Existing channels for agriculture sector financing in the Project area**

Main financing channels	Probability of financing the agricultural sector
Public financing institutions	High to medium (e.g. PADEF, PDAC)
Bank	Low (e.g. BCH, BGFI, LCB, UBA, etc.)
MFI	Medium to low (e.g. MUCODEC, CAPPED, CFCM, etc.)
CMEC (part of MFIs)	High to medium (e.g. CMEC Bouansa, CMEC Sibiti, CMEC Djambala, etc.)
Revolving fund/Tontine	High to medium

139. **Credit supply by MFI:** The average change in the volume of credit from independent MFIs was 145% between 2011 and 2015 before experiencing a drop of 66% between 2015 and 2016. However, the average change in the volume of credit from the MUCODEC Network increased by 20% between 2011 and 2015. Despite the crisis, the volume of loan increased by 73% between 2015 and 2016. The regularity of salary payments for civil servants with the network is behind the increase in the portfolio.

**Table 29 Evolution of credit supply from MFI (thousands FCFA)**

Type of MFI	2011	2012	2013	2014	2015	2016
Independent MFI	5,388,943	7,420,618	8,824,350	12,394,726	13,222,953	4,482,715
MUCODEC Network	43,426,000	46,256,000	49,720,000	76,030,000	52,370,000	90,769,693
Total	48,814,943	53,676,618	50,544,350	88,424,726	65,592,953	95,252,408
Ratio		9.96%	-5.84%	74.94%	-25.82%	45.22%

140. The average growth in the volume of loans between 2011 and 2015 was 100% despite a drop of -13.30% in 2015.

**Table 30: Volume of credit supply from rural Savings and Credit Unions in south Congo (thousands of francs CFA)**

Type of MFI	2011	2012	2013	2014	2015
Savings and Credit Unions	265,532	354,878	423,599	615,213	533,414
Ratio		33.65%	19.36%	45.23%	-13.30%

141. **Distribution of MFI credit access by socio-professional categories:** Civil servants constitute the dominant clientele at the bank and MFI level. The microfinance sector in Congo is dominated by the MUCODEC network. The clientele of MFI consists to a large extent of civil servants (due to the weight of the MUCODEC and the concentration in urban areas). Merchants are the second category of targeted customers. The third targeted category consists of employees in the private sector. Craftsmen and farmers are a poorly served category.<sup>58</sup>

142. Artisans, farmers, producer groups and agro-industrial MSMEs are a category poorly served by the MFI. For the rest of the MFIs, they have a more or less diverse clientele.

**Table 31: Distribution by MFI credit access in Congo by socio-professional category<sup>59</sup>**

<sup>58</sup> UNDP survey on supply and demand analysis of MFIs (2007)

<sup>59</sup> Source enquête PNUD sur l'analyse de l'offre et la demande des EMF (2007)

Socio-professional category	Count	Percentage (%)
Civil servant workers	136	25
Private sector workers	15	2.7
Business entrepreneurs	1	0.2
Merchants	120	22
Employees	61	11
Handicrafts	22	4
Farmers	19	3.5
Others	172	31.3
<b>TOTAL</b>	<b>549</b>	<b>100</b>

143. **Relevant experience of credit supply by local MFI:** There good experiences from local MFI in agriculture sector financing that can inspire the implementation of PREFOREST.
144. Women Credit and Savings Union (*Caisse Féminine d'Epargne et de Crédit Mutuel* - CFCM) has financed agricultural and livestock projects. It is a successful experience in financing producers and processors of agricultural products. Indeed, most producers are organized in Common Economic Interest Groups (*Groupement Intérêts Economiques Communs* - GIEC) and in Union of groups with an Integrated Agricultural Value Chain approach around potential markets or niche markets. This is the case of the fruit juice value chain with the company BAYO being the structure for processing agricultural products. Between 2013 and 2014, the CFCM granted credits in the amount of 168,397,655 FCFA (around 330,000 USD) in the Louingui district, Pool Department with an allocation of 75% in the agricultural sector (market gardening, arboriculture), 17% in the livestock sector (poultry, pigsty, fish farming) and 8%, only in the commercial sector. Some farmers and agro-industrial companies have also benefited from the credits with the guarantee of the Socioeconomic Reintegration Fund of disadvantaged groups.
145. Fund for Participation in the Promotion of Enterprises and their Development (*Caisse de Participation à la Promotion des Entreprises et à leur Développement* – CAPPED) is the financial instrument of the Congo Young Business Forum (*Forum des Jeunes Entreprises du Congo* - FJEC), an NGO that supports socio-economic initiatives. CAPPED helps finance the creation or development MSME projects of its members. No consumer credit is provided. CAPPED provides credits to group and individual. Its clientele is dominated by people carrying out income-generating activities, particularly very small enterprise, small and medium enterprise and beneficiaries of the solidarity credit granted to a group of at least 5 candidates. CAPPED credits are mainly directed to promoters of Income Generating Activities, micro and small enterprises. Women also have access to the microcredit or solidarity credit program.
146. Crédit MUPROCOM is a microfinance institution associated with oil companies, which offers loan products aimed at SMEs in the Pointe-Noire region as well as their employees. The institution offers loan products intended for the vast majority for consumption. Loans can exceptionally reach 16,000,000 FCFA (around 30,000 USD) and their monthly interest rates vary between 1%, if they are covered by savings, and 3% for a period of up to 24 months (exceptionally 36 months). The agents of the oil companies and their subcontracting companies essentially constitute the clientele of Crédit MUPROCOM.
147. **Non-financial services:** In general, banking institutions do not provide non-financial services to customers, in particular, training or support before, during and after the financing of a project. MFIs in Congo do not also offer non-financial services for the benefit of their beneficiaries. However, as



part of the Support Project for the Socioeconomic Reintegration of Disadvantaged Groups (PARSEG) which partnered with 18 MFI, clients or disadvantaged people benefited from entrepreneurship training, assistance the preparation of their financial documents, as well as the support in accounting management.

#### MFI credit demand and feasibility for PREFOREST

148. The following table shows the categorization of the potential beneficiaries which can access MFI support according to the conditions for obtaining credits. It has been used for the pre-selection of the potential beneficiaries. For those who cannot access MFIs (red), grants are likely to be provided through the intervention of the project (but depending after of the selection criteria for the identification of project beneficiaries).

**Table 32: Credit supply/demand relationship for PREFOREST's agriculture-related interventions<sup>60</sup>**

Department	Investment project	Potential private actor	
Pool and Plateaux	Small and medium agroforestry & forestry – sustainable fuelwood projects (new and existing plantations)	Communities without land	Red
		Landowners	Yellow
	Large private plantations – fuelwood – (new and existing plantations)	Foresters and other big actors	Yellow
	Small and medium agroforestry savannah demonstration projects combining crops and perennial commodities (cocoa in shade, palm tree oil, banana)	Communities without land	Red
		Landowners	Yellow
Kouilou & Niari	Small and medium climate-resilient/sustainable agriculture projects	Small subsistence agriculture farmers	Yellow
		Small agriculture farmers or commercial groups	Green
		Neo-rurals	Green
	Small and medium agroforestry projects combining crop and perennial (cocoa under shade, banana)	Communities without land	Red
		Landowners	Yellow
	Small and medium income generating projects: livestock, artisanal fishing	Communities without land	Yellow
		Landowners	Green
	Small and medium agroforestry & forestry – sustainable fuelwood projects (new and existing plantations)	Communities without land	Red
		Landowners	Red
	Large private plantations – fuelwood – (new and existing plantations)	Foresters and other big actors	Yellow

149. Identification of the potential MFI by PMU and in collaboration with stakeholders will be done

<sup>60</sup> **Red:** Characteristics of the demand for credit too far from the requirements of the offer to remedy them during the duration of the project. Funding recommendation for such initiatives is grants. **Orange:** Gap between the requirements of the offer and the characteristics of the demand for credit requires the mobilization of subsidies and a strong capacity building so that access to credit is possible. **Green:** Gap between the requirements of the offer and the characteristics of the credit request can be bridged by a good technical support of the offer and the demand without subsidies.

through the following criteria:

- Presence of the MFI in the targeted area
- Credits allocated to cooperative (not only individuals)
- Credits allocated for agriculture, forestry, fishery activities
- Reasonable credit rate (the level of the “reasonable rate” will be defined before applying the criteria)
- Simplified process (with low or without financial guarantee).

150. **Potential PREFOREST’s MFI partners:** Three financial institutions with complementary positioning have been approached to invest in the PREFOREST. Selection will be based on criteria defined during a deeper characterization of MFI, which will be undertaken at the early stage of the Project inception. For the selection process, score will be attributed to each criteria and MFI with higher score, and willing to work with the Project will be selected. As none are well-equipped to serve the agroforestry and forestry markets, the necessary support will have to be designed in the long term and in stages, with a very strong component of technical assistance or even, for some, of rehabilitation grants. The identified main MFIs partners are as follows:

151. **MUCODEC:** A heavyweight in microfinance, the MUCODECs are clearly the essential partner of any intervention in rural areas even if it does not finance the informal sector and agriculture. Due to the economic crisis, the network is facing difficulties, with a decline in the quality of its portfolio. A recovery in the risks portfolio level is a priority before the network is ready to go to a poorly understood sector of which it does not control the risk. MUCODEC wants to understand more the market potential, the profitability of the activities and the solidity of the players and is willing to develop more adapted and focused credit lines, which included the financial needs along the whole value chain. MUCODEC would finance progressively the sector and only in the presence of bankable and sustainable business plans.

152. **COFINA:** COFINA is in the process of establishing itself on the Congolese market and is interested in developing its activity towards all promising and under-served economic sectors and plans in this context to finance agriculture and the forestry sector. COFINA could mobilize its African network for this purpose, on top of the technical support provided by the project.

153. **HOPE Congo:** An institution with a positioning complementary to that of MUCODEC and COFINA established in Brazzaville and Pointe Noire, serving smaller players, displays a strategy affirmed to move towards rural and agricultural credit, in particular for the financing of food crops, which is consistent with the technical agroforestry systems proposed by the PREFOREST. The MFI expressed an interest in receiving technical assistance to develop her activity towards these new clienteles in the agroforestry sub sector. Subject to a detailed economic analysis of future Project location areas, it would be ready to consider settlements in synergy with the Project, including possibly with lean agencies in these areas based on revolving funds. For this, the MFI wants to study more precisely, with the technical support of the project, especially in terms of profitability and location, the opportunity for the MFI to develop an offer intended for the clienteles targeted by the GCF entering its target clientele, in order to clarify its strategy in relation to these clienteles and to Project partnership.

154. The above financial institutions identified have all confirmed an interest in a partnership with the Project subject to confirmation of the profitability of the projects to be financed and the security mechanisms. Potential need for support includes:

- (i) Subsidy support (development of tools to apprehend target customers: informal customers,

agricultural and agroforestry customers; communication with customers; development of an adapted offer and internal training; installation of rural agencies). The necessary subsidy support is important;

- (ii) Silent warranty; and
- (iii) concessional medium-term credit lines (MUCODEC wishes to start the partnership with the Project on the basis of equity to first validate the interest of going into debt).

155. An in-depth assessment will be undertaken during the project implementation on top of the first undertaken assessment on their absorption capacity (see table 7, considering the context and the needs of potential beneficiaries). Other MFIs could be added in the list, depending of many criteria such as their presence in the field.

**Table 33: Absorption capacity of financial institutions**

Financial institutions	Potential and preferred credits beneficiaries	Credit portfolio (M FCFA)	Absorption capacity / PREFOREST collaboration (M FCFA)	Absorption capacity / PREFOREST collaboration (M USD)
MUCODEC	Neo-rurals, Association, SME	86,000	1,300	2.6
COFINA	Neo-rurals, Association, SME	5,500	2,000	4
HOPE	Individual or group of farmers	2,400	1,200	2.4

Source: Horus, 2018

156. **Barriers for private sector engagement:** Banks and MFIs are reluctant to finance agricultural projects. The main mode of financing agriculture in rural and urban areas in the Congo is self-financing. Eighty-five percent of producers finance their agricultural activities with their own funds. Some financial products and services (savings and credit) offered by banks and MFI are generally not very varied and are not suitable for financing agriculture.

157. MFI are more concentrated in urban areas and mainly in Brazzaville and Pointe-Noire. Rural areas are not well covered, although it can be seen that there is at least one microfinance institution in each department. The MUCODEC network, CMECs and MFIs (whose activity is limited to the transfer of money) are the only institution with a large spatial coverage. The economic situation in rural areas explains this imbalance and highlights the orientation of MFIs, which are institutions that prioritize the commercial mission rather than the social one.

158. Agricultural producers have very low equity (insufficient equity to access credit) and have poorly diversified agricultural crops. Weak equity, poor diversification of agricultural products and the low internal rate of return (IRR) for certain agricultural or livestock speculations, reduce the chances of producers to easily access credit in financial institutions.

159. Many agro-industrial producer groups and MSMEs do not master their economic model. Controlling production costs from production, processing to distribution of agricultural products is not also mastered by many producers. In the context of plant production, market gardening is the most profitable speculation. Hence the need to reinforce the technical capacities on business management of the beneficiaries before the financing of their initiatives.

160. Many of the production basins in the forest and savannah areas (departments Likouala, Sangha,

Cuvette, Kouilou and Lékoumou) are landlocked. Transport constraints, in particular transaction costs are high for these agricultural producers and traders, and mobility becomes low. The cost of transporting agricultural products from Pokola to Ouessou (38 km), for example, is more expensive than that from Ouessou to Brazzaville (840 km).

161. Access and security rights to land is a constraint for access to finance and the development of agricultural activities. **MFI cannot finance an agricultural producer whose land is not guaranteed.** In the district of Djambala for example, landowners do not like to make large areas available to producers for farming.

162. MFIs offer classic savings, credit, domestic funds transfer and mobile money products that are **not adapted to the specific needs of agricultural producers**, to enable them to modernize and develop their agricultural activities in order to be competitive on the national and international market.

163. The other constraints which prevent agricultural producers from accessing credit in banks or microfinance institutions are the followings: (i) Absence or inadequacy of guarantees from applicants for agricultural credits; (ii) Agricultural sector involves too many risks; (iii) Banks are not used to working with this category of customers and the amounts requested are often small; (iv) Short term nature savings available to MFI for investments; (v) Weak management capacity of Banks and MFI and lack of technical skills for these types of so-called agricultural loans; (vi) Farmers 'Organizations lack the technical skills to play an effective and lasting role in financial intermediation for their members' access to credit.

**Table 34: Characterization of MFI in the project area**

Name	Sector of intervention	Regions of interventions in relation to PREFOREST	Credits amounts	Loan terms/Requirements	Interest rate	Profile
<b>CAPPED</b>	Commercial Agriculture	Present in 3 departments	Between 300.000 et 10.000.000 FCFA (600 and 20.000 USD)	Owner of savings account for at least 3 months old; Warranties: 20% of the loan amount; Present material warranty	3% per month	Created in 2003. Launch in February 2020 of an agricultural loan
<b>CODEC</b>	Savings, Loans, Agriculture Trade Craftsmanship , Payroll domiciliation Entrepreneurship	Brazzaville, Pool, Pointe Noire Oyo	Up to 2, 5 M FCFA for agriculture Up to 10 M FCFA for companies	Active membership, Owner of an used account (for the last 3 months); Have 1/3 of the requested loan in the account	Negotiable (from 1,5 % per month)	Created on 8 février 2019 in Brazzaville Several agencies Already collaborating with the PDAC Project of the World Bank where beneficiaries have opened accounts.
<b>MUCODEC</b>	Agriculture Trade, Construction,	Present in all departments (country-wide)	Up to à 100 M FCFA ; Equipment up to 25 M FCFA	Oner of a checking account; Active membership Have sufficient savings (variable amount	Depend on the total amount and the	Created in 1984 in Madingou, department of Bouenza.

	Craftsmanship, business creation, Equipment, Payroll domiciliation		Building up to 50 M FCFA Agriculture up to 50 M FCFA Trade up to 5 MFCFA	depending on the type of loan), Justify the means of reimbursement. Provide guarantees (guarantees, mortgage, etc.).	duration of the loan Average 1,67% per month	Important local network; Experience: permanent presence in the MFI sector for over 36 years; The MUCODEC encourage the banking of populations and more particularly populations excluded from the traditional banking system. Has: 53 Local Banks (CLM) and Points of Sale (PV) Has a radio channel (100.3 FM).
<b>HOPE CONGO</b>	Trade, Building, Transport; Agriculture	HQ in Brazzaville Agencies in Pointe Noire	Community Bank Loans  For solidarity groups (20– 30 members) Loan btw 55.000– 599.000 FCFA with 5% interest rate per member  For smaller Solidarity groups (5– 20 members) with long term partnership Loan btw 600.000– 2.000.000 FCFA with 4.5% to 5 interest rate per member	Requirements: 18 to 65 years old; Be a Congolese citizen or legal resident; Provide a valid identification document; Owner of a commercial activity; Participation in 3 training sessions on business before joining a group; Deposit 10% of the initial loan balance (compulsory savings).	4,5% to 5% per month depending on the amount	HOPE Congo is a Christian microfinance institution that officially launched its activities in 2010. HOPE Congo is part of HOPE International, a microfinance network that works in sixteen (16) countries around the world.
<b>COFINA (present in 6 African countries)</b>	Trade, Construction, Agriculture, Transport	Present in 1 department targeted by PREFOREST)	Between 100.000 and 150.000.000 FCFA (200	Owner of an account, Proof of the ability to reimburse; Present 15% of the requested amount.	Between 1,5 and 2% monthly	Installed in Congo in 2017. No specific product dedicated to agriculture.

			and 325.000 USD)			
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**Table 35: Demand/appetite for climate finance from different actors<sup>61</sup>**

Potential actors	Demand/appetite for climate finance (credit)	Level
Community Development Series	Average appetite for all projects (already difficult to subsidize), except for cocoa; beekeeping & fish farming also seem to have potential	Medium
Landless community: Forestry and agroforestry projects	Familiarity with subsidy and low familiarity with credit	Medium
	Mixed appetite for fuelwood due to land rights and marketing issues	Medium
	Appetite to be confirmed for savanna agroforestry small and medium projects; perennial & orchard small and medium projects	Medium
	High appetite for small and medium AGR projects: Non timber forest products, livestock farming, artisanal fishing	High
Small subsistence farmers	Familiarity with subsidy; limited familiarity with credit; appetite difficult to evaluate	TBD
Small farmers or commercial groups	Familiarity with subsidy, but high appetite for climate-smart finance for agriculture	High
Neorural	Familiarity with subsidy, but high appetite for climate-smart finance for agriculture	High
Landowners	Familiarity with subsidy, but high appetite for climate-smart finance for agriculture/agroforestry	High
	Fuelwood: possible with partial subsidy	Medium
Congolese logging actors	Possible appetite, while mixed with subsidy	TDB
Major international players	Fuelwood: low appetite a priori	Low

## **F. Identified needs and barriers for adoption of sustainable low emissions and resilient agricultural practices**

164. In order to reduce carbon emissions and improve the livelihoods of the smallholders farmers in Southern Congo, the PREFOREST project will introduce innovative and integrated solutions aimed at increasing carbon sequestration and reduce carbon emissions by addressing the following identified needs:

- (vi) **Regenerate degraded areas from slash and burn agriculture and increase soil fertility and crop productivity** for low emission, sustainable and intensive crop production by introducing innovative **agro-forestry practices** and **natural regeneration**;

<sup>61</sup> Feasibility study: Finance component. HORUS Development, 2018

- (vii) **Reduce pressure on existing natural forests** by planting trees for sustainable fuelwood production in already degraded areas from slash and burn agriculture;
- (viii) Strengthening land access and land security to allow for plot delimitation and plot investment in order to **reduce the need to access additional forested land**;
- (ix) **Strengthening connection between smallholder farmers and markets**, as well as strengthening business capacities of smallholder farmers in order to increase their income and invest in high quality and low emission crop production from agro-forestry
- (x) **Strengthening access to adapted micro-credit** in order to increase investment and scaling up of high quality and low emission crop production from agro-forestry

The following barriers for adoption to achieve low emission and sustainable agricultural and forestry practices in southern Congo have been identified:

Social/Governance barriers:

165. **Limited access and insecure land tenure rights:** Land access and tenure rights are based on random and insecure practices. The current practice of “temporary leases” private landowners (formal land ownership or customary land ownership) and small producers, on private land, which are limited to one subsistence crop cycle only favours short-cycle agricultural practices and limits the impact of sustainable and long-term investments required to stabilize slash-and-burn agriculture, increase main crops yields, and consolidate the sustainability of the fuelwood sector.

Technical/knowledge barriers:

166. **Weak technological basis and capacities:** The knowledge basis on low-carbon climate-resilient agroforestry and forestry practices in the project area is weak. Women farmers interviewed during project formulation claimed that they had never practiced or been trained in agroforestry, though they were ready to improve their knowledge. Small tools are the basic equipment of 71.2% of male-headed agricultural households, compared with 28% of female-headed households. These small tools essentially consist of hoes, axes, machetes, saws, chainsaws, etc. As a result, a lack of modern technologies not only increases the drudgery of agricultural work, but also significantly limits productivity, often resulting in agricultural extension at the expense of forests.

167. **Limited access to a sustainable source of fuelwood** which would reduce pressure on natural forest.

168. **Limited access to markets:** Farmers and producers experience enormous deficits in terms of information on market opportunities, technological advances, as well as quality requirements, which considerably limit their economic and commercial opportunities. In addition, transport, storage and transformation are often not efficient, compromising the quality of the product and as such attractive less buyers.

169. **Limited access by the rural poor to financial services:** The finance sector in Congo is still evolving with the agriculture sector representing only 6% of the total portfolio in April 2018. It is structured into mesofinance (e.g. Congolese Savings and Credit Mutuals (*Mutuelles Congolaises d'Epargne et de Crédit* - MUCODEC) and African Financial Company (*Compagnie financière Africaine* - COFINA), microfinance (e.g. Hope Congo and Savings and Credit Union (CMEC)), and bank institutions (e.g.

Société Générale).<sup>62</sup> The MUCODEC network is centralized and represents ¾ of the customers, 80% of credits and 93% of deposits of the entire finance sector.<sup>63</sup> It marginally meets rural needs and is characterized by:

- (i) Under-representation of women and farmers among its members; over-representation of wage-earners and public officials in loans given;<sup>64</sup>
- (ii) Marginal funding for agriculture, the small business sector and commerce;<sup>65</sup>
- (iii) A high level of guarantees needed to access credit; and
- (iv) A very low overall rate of transformation of savings into credit (20%), reflecting the network's very cautious credit policy.<sup>66</sup>

170. The majority of agricultural producers in Congo have difficult access to financing from bank or Micro Financial Institutions (MFIs). On the demand side, the majority of credit applications by the farmers do not respect the minimum requirements for solvency and profitability required by local financial institutions due among others to low equity, poor diversification of agricultural products and the low internal rate of return for certain agricultural or livestock speculations. Low technical capacities on business management (e.g. production cost, processing to distribution), limited land access and unsecure tenure rights (MFIs don't finance farmers, whose land access and security rights is not guaranteed), and the informal and embryonic nature of the value chains for the agricultural and fuelwood sectors (e.g. agricultural production is over 90% controlled by small producers and some local SMEs) are major barriers to access finance by farmers.

171. On the supply side the inadequacy of the products offered (i.e. high interest rate of about 4-5% per month and short-term maturity) and lack of technical skills for these types of so-called agricultural loans by MFI are major barriers that limit credit supply to farmers by MFIs. Small holder farmers mainly resort to traditional savings and credit practices, which are widespread in all departments, notably tontines or rotating savings and credit associations (ROSCA)<sup>67</sup> organized by men and women, loans in the form of seed, animal loans (share farms) to start up small-scale livestock production, loans from family and friends, and money collection services on local markets (mobikissi). This situation makes it difficult to invest in sustainable practices and severely compromises rural entrepreneurship.

**Table 36: Distribution by MFI credit access in Congo by socio-professional category<sup>68</sup>**

Socio-professional category	Count	Percentage (%)
Civil servant workers	136	25
Private sector workers	15	2.7
Business entrepreneurs	1	0.2

<sup>62</sup> Mesofinance and microfinance institutions are all referred to as microfinance institutions in this proposal. For more details, see the report of the project's financial feasibility study, page 20.

<sup>63</sup> Feasibility study: Finance component. HORUS Development, 2018.

<sup>64</sup> They receive more than 90% of credit given in numbers and 80% in amounts.

<sup>65</sup> Approximately 1% of loans.

<sup>66</sup> Its current approach consists of consolidating existing funds rather than creating new ones, limiting products and client diversification, and creating a financial institution that can service the current networks in Congo.

<sup>67</sup> A popular savings and credit system based on a principle of circular reciprocity as a resource allocation mechanism. The participants agree to pay a predetermined amount at a given frequency and, at each payment round, one of the participants is designated to be the recipient of the funds of the other participants. When everyone has received as much as they have paid, the group is defeated, unless the participants decide to start again. For the first recipient, the tontine is like a credit. For the last participant, the tontine is like savings

<sup>68</sup> Source enquête PNUD sur l'analyse de l'offre et la demande des EMF (2007)



Merchants	120	22
Employees	61	11
Handicrafts	22	4
Farmers	19	3.5
Others	172	31.3
<b>TOTAL</b>	<b>549</b>	<b>100</b>

## G. Importance of forests and agroforestry for adaptation and mitigation potential in Congo

172. As underscored in the Paris Climate Agreement in 2015, forests play an important role in the fight against climate change, because of the high carbon densities stored in their vegetation and soil but also because of their potential to absorb CO<sub>2</sub> from the atmosphere. Acting as carbon sinks, they absorb the equivalent of roughly 2 billion tonnes of carbon dioxide each year. Forests also present important adaptation co-benefits by promoting favorable microclimates, decrease soil erosion, increase the soil's ability to absorb and retain water, produce nutrients for plants, maintain high levels of organic matter in the soil, and moderate soil temperatures.<sup>69</sup> Additionally, some level of deforestation will also cause decrease in evapotranspiration, which is a key phenomenon in the maintenance of a key hydrological cycle.<sup>70</sup>
173. In particular, agroforestry has been widely recognized over time to contribute to climate change adaptation by improving soil quality and fertility and therefore increasing resilience to soil erosion and degradation caused by increasing climatic events. Agroforestry has also an important mitigation potential by sequestering and storing atmospheric CO<sub>2</sub> over long periods.<sup>71</sup> Agroforestry systems in Africa in fact constitute the third largest carbon sink after primary forests and long-term fallows and are one of the most conspicuous land use systems across landscapes and agroecological zones.
174. Agroforestry and the incorporation of small forest forestry systems in rural areas is also a solution to stabilize slash-and-burn agriculture and increase the sustainability of fuelwood production. The benefits of agroforestry are numerous, and the value of agroforestry practices in restoring soil fertility, reducing degradation and stabilizing its structure, and increasing biodiversity in agricultural areas has been demonstrated on numerous occasions.
175. According to the FAO, agroforestry is a generic term that designates land-use systems and practices in which woody perennials are deliberately integrated into agricultural cultivation and/or livestock production for a variety of benefits and services.
176. Agroforestry is the deliberate combination on a single plot of agricultural crops with perennial woody species (trees), with or without animals, in line with a sustainable approach. The objective is to benefit from goods and services resulting from positive interactions established between the different components (crops, trees, animals, soil).<sup>72</sup> In forest landscapes that are more or less subject to anthropic pressure, like certain departments in Congo, agroforestry systems may be an effective

<sup>69</sup> FAO Agroforestry for landscape restoration <http://www.fao.org/3/b-i7374e.pdf>

<sup>70</sup> Forests in the Congo Basin-Forests and Climate Change: <https://agritrop.cirad.fr/578904/1/Forets%20of%20the%20congo%20basin.pdf>

<sup>71</sup> Albrecht and Kandji, 2003; Lorenz and al., 2014; Zoomer and al., 2016; Bentrup and al. 2018.

<sup>72</sup> [https://www.ecofog.gf/giec/doc\\_num.php?explnum\\_id=1729](https://www.ecofog.gf/giec/doc_num.php?explnum_id=1729)

way to meet the subsistence needs of the local people, while conserving forest cover and biodiversity. Agroforestry systems have great potential for the diversification of food resources and income sources. They could improve productivity of the land, stop and reverse land degradation through their ability to provide a favorable microclimate and permanent cover, improve organic carbon content and the structure of the soil, increase infiltration and improve the fertility and biological activity of the soil.

177. Agroforestry ranges from very simple and sparse systems to highly complex and dense systems. It covers a large range of practices: corridor cultivation, agriculture with trees in level curves, or perimeters closed with trees, multi-tiered cultivation, intercropping, polyculture, tree and shrub fallows, parks systems, market gardening, etc. Many of them are traditional land-use systems. Agroforestry is therefore not a single technology, but covers a general concept of trees in cultivation and livestock production systems, allowing multifunctionality to be achieved.<sup>73</sup>
178. An important characteristic of agroforestry systems in Congo basin consists of the selection of valuable fruit trees with a high yield potential. Much of this selection is through a process known as participatory domestication, in which researchers work with communities to select varieties and adapt them for local use. Trees are often cultivated by vegetative propagation, using techniques such as air layering (marcotting), cuttings and grafts, which enables a greater selection of desirable traits than simply planting seeds. Desirable traits for agroforestry species include not just size and taste, but also fast growth and fruiting, as well as and uniform fruit size.
179. Numerous species are used in agroforestry systems. Fruit trees include the African mango (*Irvingia gabonensis*), safou (*Dacryodes edulis*), kola nut (*Cola spp*), bitter kola (*Garcina kola*), Njangsa (*Ricinodendron heudelotti*), tamarind (*Tamarindus indica*), shea nut (*Vitellaria paradoxa*) and ber fruit (*Ziziphus indica*). Medicinal species include *Annickia chlorantha*, *Khaya senegalensis*, *Pausinystalia johimbe* and bark of the African cherry (*Prunus africana*). Some cash crop species include cocoa (*Theobroma cacao* L.) and coffee (*Coffea arabica* and *Coffea canephora*). Experts believe that hundreds more species in the region have great potential for domestication and use in agroforestry systems. Finally, African oil palm (*Elaeis guineensis*), although a significant driver of tropical deforestation throughout the world, is native to central and western Africa, and if managed well can form part of a sustainable agroforestry system.
180. **Some forests and agroforestry experiences documented in Congo.** The objective of the Intens&fix project implemented by CIRAD and CRDPI (*Centre de Recherche sur la Durabilité et la Productivité des Plantations Industrielles* [Research Center on Industrial Plantation Sustainability and Productivity]) between 2011 and 2014 was the ecological intensification of forest plantation ecosystems based on inter-species interaction processes. It also consisted of studying the performance of combinations with nitrogen fixing species. The National Programme for the Development of Cocoa Production (*Programme National de Développement de la Production de Cacao* - PND-Cacao) implemented in North Congo (departments of Sangha and Likouala) by the Congolaise Industrielle du Bois, a subsidiary of the Olam group (CIB-Olam) should also be noted, with its innovative objective of developing a “Congo Origin” cocoa with positive impact on producers and the environment.
181. **Lessons learnt and best practices:** The Democratic Republic of Congo is a leading country in agroforestry in Central Africa. Today, several large-scale agroforestry projects have been implemented, particularly the Mampu and NOVACEL projects. Initially designed in 1984 to be used

<sup>73</sup> <http://www.fao.org/3/i1861f/i1861f08.pdf>

as a pilot for industrial afforestation of 100,000 ha, the Mampu afforestation, which started in 1987 on the Batéké plateaux (75 km from Kinshasa), was progressively converted into an agroforestry system from 1995 onwards despite the armed conflict, and approximately 8,000 ha of *Acacia auriculiformis* plantations were created between 1987 and 1993. From 1998, the Mampu plantation was divided into 25 ha lots, which were allocated to 320 farming families. Cultivation followed an improved fallow agroforestry model inspired by the traditional slash-and-burn agriculture model. Total charcoal production from this massif forest varies from 8,000 to 12,000 tonnes annually, +10,000 tonnes of cassava, 1,200 tonnes of maize and six tonnes of honey. Charcoal alone corresponds to a gross annual income of USD 2.6 million for the country. The Mampu agroforestry system was estimated to contribute to agriculture sedentarisation and help avoid the annual destruction of 500 ha of savanna and gallery forests, while contributing to the sequestration of 113,000 tonnes of CO<sub>2</sub> per year over an area of 7,500 ha, as well as the production of fuelwood that preserves natural forest areas.<sup>74</sup> These sustainable agroforestry activities relieve anthropic pressure on soils and gallery forests. Every year, the Mampu agroforestry system prevents irreversible destruction of 5,000 ha of savanna and gallery forests.<sup>75</sup>

182. A study on carbon sequestration was carried out as part of the evaluation of the Mampu agroforestry project and estimates indicate that this agroforestry system sequesters 113,000 tonnes of CO<sub>2</sub> annually over an area of 7,500 hectares. Beyond sequestration, this system allows the production of wood energy which promotes the preservation of natural wooded areas/forest areas. It has been shown that the introduction of nitrogen-fixing trees, and in particular acacias, makes it possible to increase the carbon stock of the soils compared to previous uses (pastures, savannah, sugar cane, etc.). Regarding agroforestry practice, it has been shown in the Democratic Republic of Congo (Mampu massif, based on *Acacia auriculiformis*, cassava and maize) an increase in carbon and nitrogen contents in the soils after one, two and three rotations (Dubiez et al., 2018) including when the technical itineraries included a burning of the residues at the end of the rotation. Soils under all acacia stands for the *Acacia auriculiformis* woodlots growing in rotation with cassava and maize had higher C, N and NO<sub>3</sub> contents, but were more acidic, and had lower contents of exchangeable Ca, Mg, K and Na than the control savannah soils (Dubiez and al., 2019). This increase is on average 16% under plantations compared to the surrounding savannas.
183. The NOVACEL Sud Kwamouth (NSK) agroforestry project is one of the first REDD+ pilot projects in DRC. It was implemented between 2011 and 2016 and funded by the Congo Basin Forest Fund (*Fonds pour les Forêts du Bassin du Congo* - FFBC). The project planned to plant 4,220 ha of forests on the Batéké Plateaux (3,570 ha of acacia, eucalyptus and pines, 420 ha of local species and 230 ha of natural regeneration), specifically to produce firewood to supply the town of Kinshasa. Using agroforestry techniques, lines of trees were intercropped with cassava plantations. The project's sequestration potential was estimated at approximately 700,000 tonnes of CO<sub>2</sub> in 2017 and 2.5 million tonnes after 30 years. In summary, 1,500 ha of agroforestry plantations were established, 750 ha as pure forest and 750 ha as mixed crop-agroforestry.
184. With regards to energy, the biofuel sector is under development in the Republic of Congo. To date, several initiatives have been implemented by Congo's development partners, such as the Makala project, implemented during 2009-2011 and funded by the European Union with the objective of ensuring sustainable fuelwood supplies for the towns of Kinshasa and Brazzaville, while limiting

<sup>74</sup> BISIAUX F., PELTIER R., MULIELE J-P., 2009. Industrial and agroforestry plantations at the service of the populations of the Batéké plateaux in the Democratic Republic of Congo. *Tropical Woods and Forests*, 2009, 301 (3): 21-31

<sup>75</sup> Proce and al., 2017.

environmental impact. The activities of the Makala project, coordinated by the French Agricultural Research Center for International Development (*Centre International en Recherche Agronomique pour le Développement* - CIRAD) were organized around seven modules that specifically consisted of: (i) Analyzing the legislative, socioeconomic and financing framework of the fuelwood sector and making proposals to facilitate implementation and appropriation by the parties; (ii) Conducting a situational analysis of the available resources and practices in the sector; (iii) Compiling the procedures for the sustainable management of natural forests for village communities and implementing them over six areas; and finally (vi) Promoting sustainable fuelwood production in community plantations located in six areas in the Kinshasa and Kisangani supply basins.

### Potential location of reforestation/afforestation activities in the targeted Departments

185. The country has identified location of potential reforestation/afforestation activities. The following maps are indicating these locations

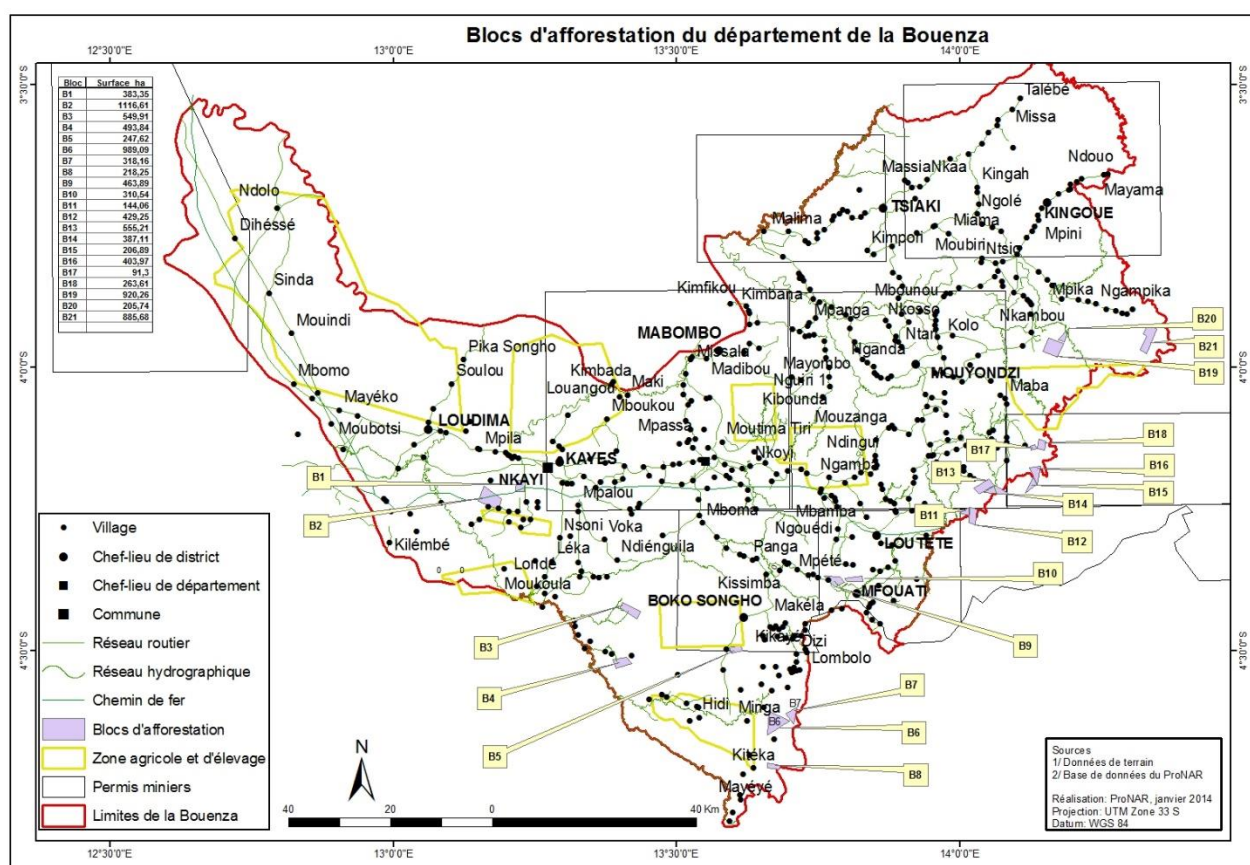
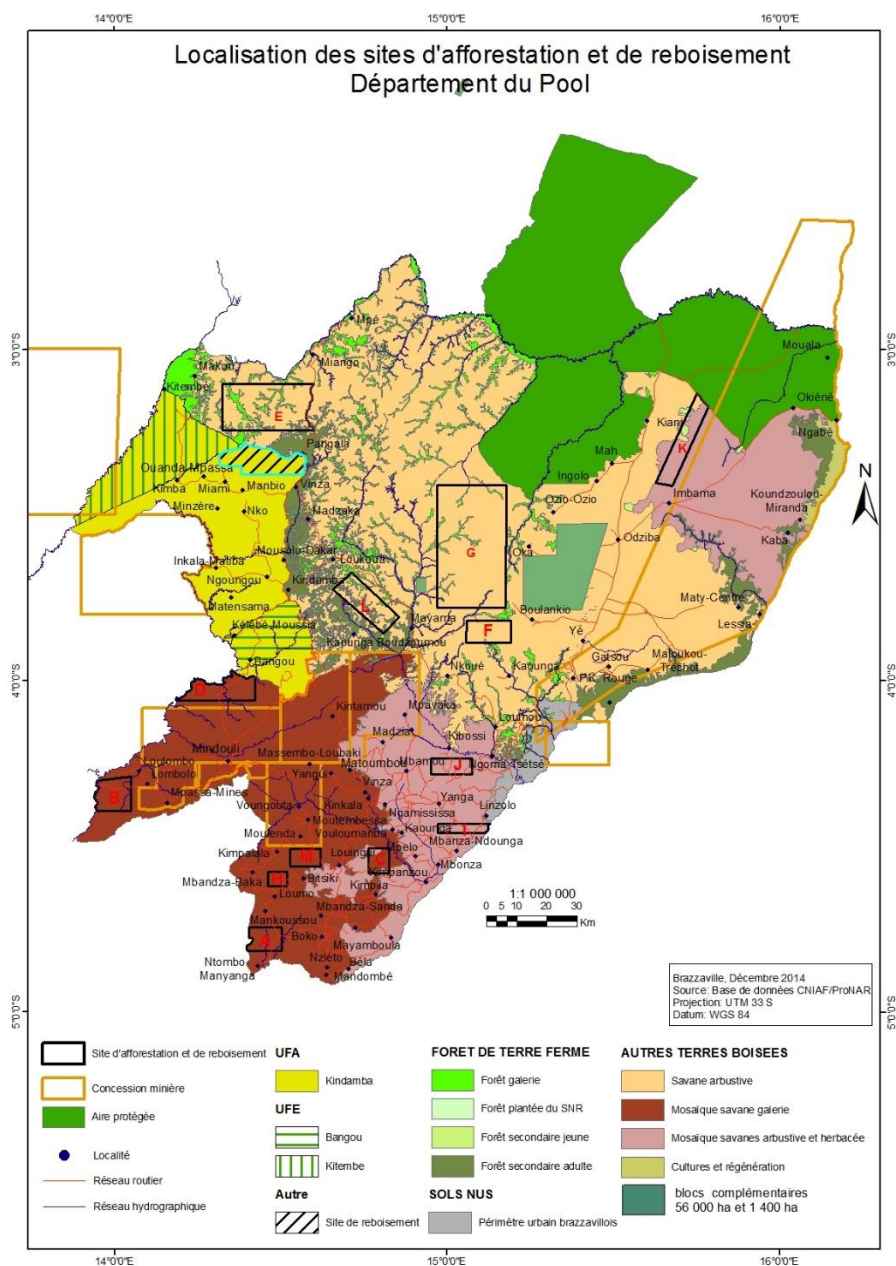
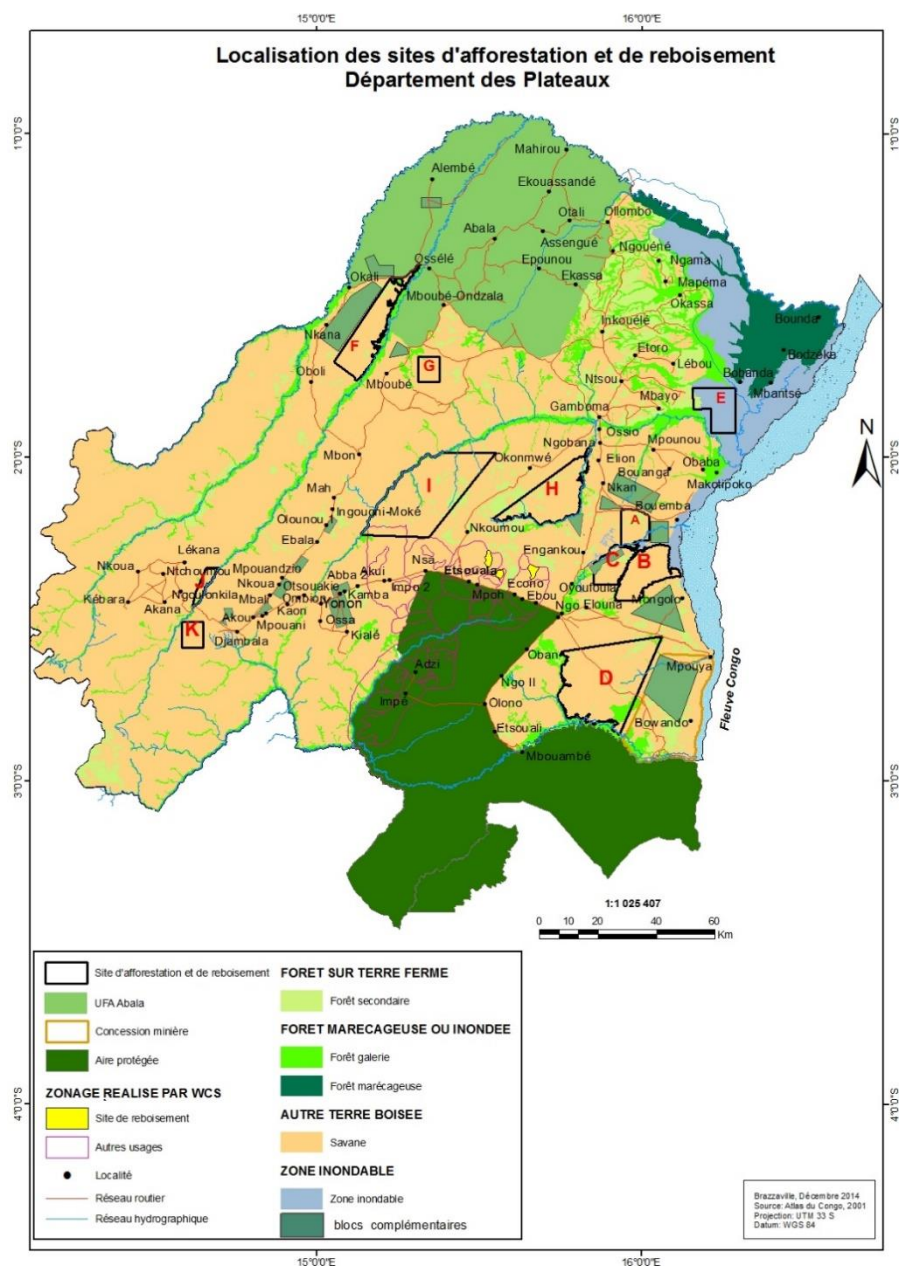


Figure 10: Location of reforestation area for Bouenza Department



**Figure 11: Location of reforestation area for Pool Department**





**Figure 12: Location of reforestation area for Plateaux Department**

### Blocs d'afforestation du département de la Lékoumou

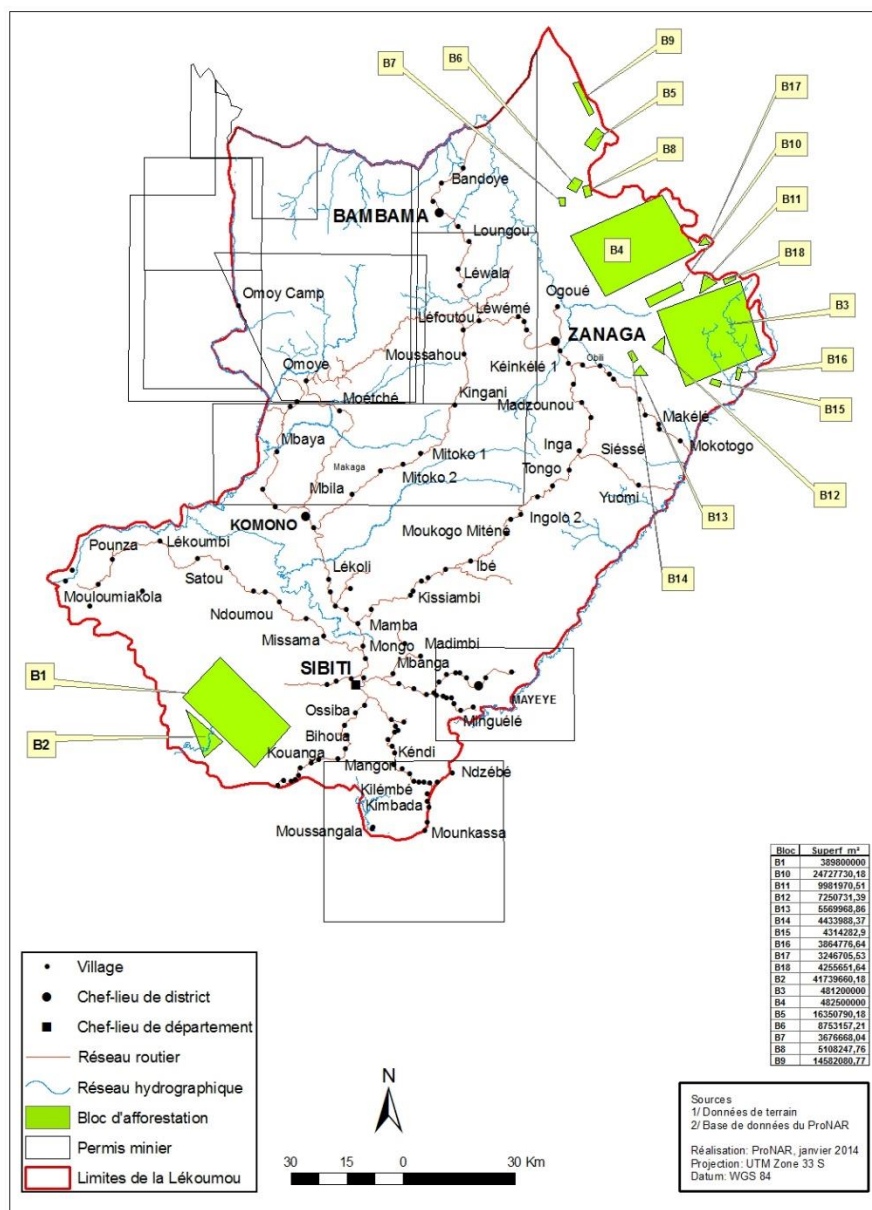
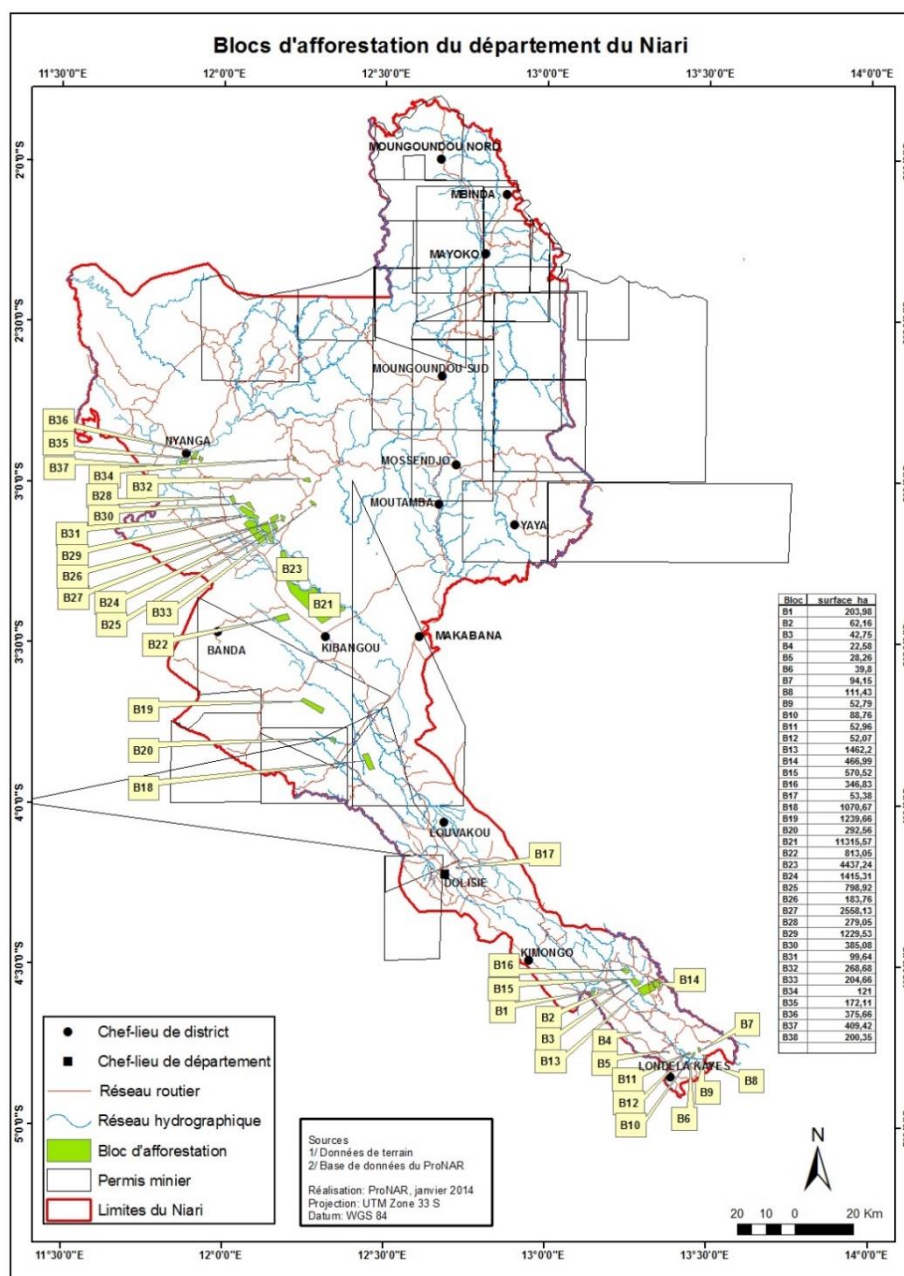


Figure 13: Location of reforestation area for Lékoumou Department



**Figure 14: Location of reforestation area for Niari Department**

### *FAO experience in the LULUCF sector*

186. The FAO has more than 40 years of experience in the effective implementation of development projects/programmes in Congo. The FAO's assistance to Congo is defined by the Country Programming Framework (CPF), which is aligned with the Congolese National Development Plan (NDP) and revolves around the following three priority axes: (i) Modernization of small-scale farming, livestock production and aquaculture; (ii) Support to sustainable development and the fight against the effects of climate change; and (iii) Strengthening the capacities of civil society organizations and agricultural producers. In recent years, the FAO has demonstrated an unparalleled level of expertise and experience in implementing similar climate change interventions in Congo. For example, cooperation around the CPF has enabled institutionalization of the farmer field school concept in 12



sub-prefectures and strengthening of the technical capacities of 282 producers leading to increase in yields. Owing to FAO support, Congo was the first Francophone country to submit its GHG reference emission level to the United Nations Framework Convention on Climate Change in 2016. Through the UN-REDD programme, the FAO has given Congo access to two strategic REDD+ tools, particularly its National Forest Monitoring System: Monitoring and Measurement, Reporting and Verification (NFMS - M & MRV) and the Forest Reference Emission Level (FREL). Furthermore, at the government's request, the FAO has federated the efforts of Congolese institutions and technical and financial partners in order to create an agricultural sector agency by developing south-south cooperation between Congo, Côte d'Ivoire and Senegal. The FAO is also actively involved in various important and related initiatives, particularly: The Central African Forest Initiative (CAFI); The Forest Investment Programme (FIP); The national land-use planning strategy revision process; Awareness raising on Voluntary Guidelines on the Responsible Governance of Land (VGGT) and; The FLEGT programme, some of which serve as a springboard and provide co-funding for this Project. The FAO will team up with several international and local partners with proven experience in implementing activities similar to the Project. These are specifically local partners, such as *Initiative Développement* and its partners (e.g. *Femme Energie*, etc.) who have been involved with biomass and energy issues in Congo over the last 14 years.

187. FAO has extensive experience on Agroforestry, from the technical improvement of the system to the implementation of agroforestry actions in the field through projects and programmes. Many publications (technical guidance, scientific articles) have been written and developed by FAO. Below the list of some of the publications and the agroforestry project all over the world:

#### Latest FAO publications on agroforestry

- FAO and ICRAF. 2019. Agroforestry and tenure. Forestry Working Paper no. 8. Rome. 40 pp. Licence: CC BY-NC-SA 3.0 IGO; <http://www.fao.org/3/CA4662en/CA4662en.pdf>
- FAO. 2018. Caracterización de los sistemas agroforestales Kuxur Rum y Qesungual en el Corredor Seco de Guatemala y Honduras. Ciudad de Panamá, 49 pp.; <http://www.fao.org/3/i9076es/i9076ES.pdf>
- FAO. 2017. Agroforestry for landscape restoration: Exploring the potential of agroforestry to enhance the sustainability and resilience of degraded landscapes. Rome. <https://doi.org/10.4060/i7374e>
- Wangpakapattanawong, P., Finlayson, R., Öborn, I., Roshetko, J.M., Sinclair, F., Shono, K., Borelli, S., Hillbrand, A. & Conigliaro, M., eds. 2017. Agroforestry in rice-production landscapes in Southeast Asia: a practical manual. Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific, Bangkok, Thailand & World Agroforestry Centre (ICRAF) Southeast Asia Regional Program, Bogor, Indonesia. <http://www.fao.org/3/a-i7137e.pdf>
- FAO. 2013. Advancing Agroforestry on the Policy Agenda: A guide for decision-makers, by G. Buttoud, in collaboration with O. Ajayi, G. Detlefsen, F. Place & E. Torquebiau. Agroforestry Working Paper no. 1. Food and Agriculture Organization of the United Nations. FAO, Rome. 37 pp.; <http://www.fao.org/3/i3182e/i3182e00.pdf>

#### List of multipurpose agroforestry projects implemented by FAO in various location

- Strengthening Cameroon's capacities for increased resilience and mitigation through agroforestry, 2020-2022

- Enhancing rural livelihoods and agriculture productivity through agroforestry development in Mauritius, 2019-2021
- Sustainable agroforestry production in drylands for food security and climate change resilience (Regional project, Africa), 2018-2020
- Recovery of environment and livelihoods of smallholder farmers affected by illegal mining and improvement of climate resilience and food security through sustainable cocoa production with successional and diversified agroforestry in Ghana, 2019-2020

And in the following link could be found the list of past project of agroforestry in different parts of the world: <http://www.fao.org/forestry/agroforestry/90030/en/>

FAO's overall experience and database dedicated to agroforestry could be read in the following link: <http://www.fao.org/forestry/agroforestry/80338/en/>

## H. Policy framework and baseline investments

### *Policy Framework*

188. **International climate change regulatory framework:** Congo is a major actor in respect to the international regulatory framework to combat climate change. Congo ratified the Paris Climate Agreement on April 21st, 2017, having previously submitted its Nationally Determined Contribution (NDC) on September 21st, 2015. Prior to the Paris Agreement, Congo ratified the United Nations Framework Convention on Climate and the Kyoto Protocol in October 14, 1996 and February 12, 2007 respectively.
189. **National regulatory and policy framework:** The national regulatory framework in respect to climate change has evolved significantly over time. Though Congo is yet to develop a climate change-specific policy, there are various sectoral regulatory policies that contribute to strengthen the climate change-related institutional landscape. Nonetheless, the Project will contribute significantly to the implementation of important national or sectoral policy instruments. Chief among them is the National Development Plan 2018-2022. The document relating to the development of the **National Adaptation Plan** was prepared with the technical support of the Central African Forest Commission (COMIFAC) and will be submitted shortly to the GCF and other international donors for funding.
190. **Forest code 2000:** Worthy of note is the Law No. 16-2000 of November 20, 2000 on the Forest Code. This text aims primarily to establish an appropriate legal framework to ensure the conservation and sustainable management of forests, on the basis of rational planning and participatory resources management. This fundamental law is reinforced by a series of subsequent texts, in particular Decree 2002-437 of December 31, 2002 which sets the conditions for the management and use of forests and the ministerial orders related to national directives for the sustainable management of forest concessions, the creation of forest management or exploitation units, the methods of classification and decommissioning of forests, forest taxation, etc. An important innovation under this new law is the provision on community forestry (Article 15), which provides local communities with the opportunity to create and sustainably manage their forests.
191. **National Development Plan 2018-2022:** Adopted on August 13, 2018 by the Congolese Parliament as a programmatic framework for government action, the National Development Plan 2018-2022 (PND 2018-2022) seeks to translate into concrete and tangible results the development vision of the President of Congo. The PND seeks three main objectives, namely: (i) Strengthening governance in all its dimensions; (ii) Enhancement of human capital (education and training); and (iii) Diversification

of the economy through agriculture, tourism and processing industries, with the predominant role of the private sector.

192. In respect to economic diversification, agriculture and more specifically agroforestry is presented as one of the two strategic priorities. The plan is to:

- (i) Increase agricultural production capacities for performances favorable to the dynamics of diversification of the economy;
- (ii) Ensure food and nutritional security and
- (iii) Participate in the fight against poverty.

193. **The PND further emphasizes the important role of private sector actors in leading the transformational change of the economy.** To achieve these objectives, the PND includes among other activities the development of context-specific local credit mechanisms geared towards innovative systems of financing actors involved in the agricultural sector, and more specifically low-income rural farmers. However, the PND intends to couple this strategy with a policy of preservation and enhancement of the country's natural assets, in particular, its vast expanses of savannah and forest. In this perspective, the PND under 'sub-axis 1.1. Increasing capacity for agriculture production' emphasizes continuous Government support to strengthen PRONAR, in particular through the following projects:

- (i) Land-use planning and land tenure rights;
- (ii) Community agroforestry and fuelwood energy projects in the Pool and Plateaux; and
- (iii) Implementation of Congo Nationally Determined Contribution in the sectors of land-use and forestry.

194. On Chapter 8, Section B: Promotion of private sector and business environment, Axis 1 indicated the **improvement of credit access** for small producers and small-size enterprises through continuous efforts to create an enabling environment for microfinance and mobile banking. Axis 4 on support to micro and small enterprises mentions **financial and technical assistance for example on the development of business plans**, training on management and development. In respect to tenure rights, the PND highlights the implementation of the land tenure reform (Law n°25-2008 of September 22, 2008 related to agricultural land tenure rights system and Law n°24-2008 of September 22, 2008 on land tenure in rural areas) to **strengthen the tenure rights**. In respect to Forest Economy in Chapter 9, the PND indicates in Axis 2 the reduction of GHG emissions through (i) Sustainable forest management; (ii) Improvement of agriculture systems; and (iii) Rationalization of the fuelwood sector.

### *Baseline Investments*

195. Given its strong participation in the REDD+ process and its commitments towards sustainable management, Congo is the beneficiary of a variety of relevant international supports that contribute to fulfill its international commitment in respect to climate change. As such, the country benefited from the facilities of the UN-REDD Programme and the Forest Carbon Partnership Facility (FCPF), which provided support to its REDD+ preparatory phase in the amount of USD 8.6 million between 2012 and 2016, and the UN-REDD programme in the amount of USD 4 million.

196. **Forest Carbon Partnership Facility:** Congo is also a stakeholder in the Forest Carbon Partnership Facility (FCPF) and its Emission Reduction Programme (ER-PD) for the area covering the departments of Sangha and Likouala (in north Congo) and was recently validated by FCPF member countries. This

validation makes the country eligible for results-based payments for the selected project based on an Emission Reductions Payment Agreement (ERPA), which is still to be negotiated. However, such an agreement does not make provisions for implicit funding for the implementation of REDD+ investments that would allow the country to reduce its emissions.<sup>76</sup>

197. **Central African Forest Initiative:** Congo is also a member of the Central African Forest Initiative (CAFI),<sup>77</sup> a funding initiative created by several donor countries to support REDD+ investments in the subregion. Congo and CAFI signed a Letter of Intent (LoI) on September 3<sup>rd</sup>, 2019 to establish a long term partnership for the implementation of the investment plan of the REDD+ national strategy. The agreement with CAFI supports the country in its path to addressing complex challenge: working for a sustainable economic development making commitments on key growth sectors such as agriculture, mining and hydrocarbons and minimizing climate change impacts.

198. The LoI includes ambitious commitments underlining Congo's willingness to protect forest and combat climate change through:

- (i) Non-conversion of High Carbon Stock (HSC) and High Conservation Value (HVC) forests;
- (ii) Setting of a conversion ceiling for non-HSC / HVC forests (provisional ceiling fixed at 20,000 ha per year);
- (iii) Protection and sustainable management of peatlands so that they are neither drained nor drained; and
- (iv) Orientation of agricultural activities in savannah areas.

199. This LoI was elaborated in the framework of the Central African Forests Initiatives (CAFI) to support Congo in its path to addressing this complex challenge: working for a sustainable economic development by making commitments on key growth sectors such as agriculture, mining and hydrocarbons and minimizing climate change impacts. The agreement will support land use plans for a sustainable management and the protection of peatlands by prohibiting any drainage and drying. Discovered in 2017 in the Congo Basin, these peatlands are vitally important in the fight against climate change, as they contain nearly three years of global greenhouse gas emissions.

200. In the LoI, the Republic of Congo also commits to avoid conversion of more than 20,000 hectares of forest per year, and this only outside of forests that boast high carbon stocks and high conservation value. Thus, the country is willing to mitigate future risks, including related to agro-industrial exploitation, as it has shown in a recent inter-ministerial decree (2018) that directs these activities to savannah areas. Norway, France and the European Union contribute USD 45 million to reach the LoI objectives, plus 20 million from the French Development Agency (AFD), the UK Department for International Development (DFID) and the German Federal Ministry of the Environment (BMU).

201. As set up in the LoI, this amount is not sufficient and there is a need to mobilize public and private funding to support the Republic of Congo in achieving its ambitious goals and to support the country in accessing innovative financing, particularly payments for environmental services. Although the current allocation from the LoI is large, it only represents a small proportion of the amount necessary to implement the various REDD+ investments in the country, which are evaluated at USD 261 million.

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<sup>76</sup> <https://www.forestcarbonpartnership.org/country/congo-republic>

<sup>77</sup> <http://www.cafi.org/content/cafi/en/home/partner-countries/republic-of-congo.html>

202. Congo received support from CAFI to develop its REDD+ Investment Plan,<sup>78</sup> which highlights the government's priority in implementing its REDD+ National Strategy and aligns available and potential financial resources in order to meet the needs identified by the government in its REDD+ National Strategy for the period 2018-2025. Furthermore, CAFI supported the preparation of the PREFOREST Project, particularly because it directly aligns with the REDD+ IP, and because it will support its deployment in the southern part of the country, which currently receives no funding for the deployment of REDD+ investments. A Call for Proposal was launched by CAFI in January for projects to support the implementation of the LoI.
203. CAFI has been deeply engaged in the development of PREFOREST funding proposal by providing financial support for the formulation of the funding proposal. Considering the complementarity between PREFOREST and CAFI Results Frameworks, CAFI Executive Board expressed its willingness to support the Government of Congo to mobilize GCF funding for the implementation of its REDD+ IP, and encourages CAFI Secretariat to work with FAO to identify how CAFI funding can support the implementation of PREFOREST and to propose an amount of CAFI resources to be used by FAO as co-financing.<sup>79</sup> Co-financing of USD 7 M for PREFOREST has been agreed between CAFI Secretariat and FAO to support PREFOREST interventions under component 2 for wider impacts.
204. **International Fund for Agricultural Development (IFAD):** In line with its previous investments in Congo,<sup>80</sup> IFAD plans to implement the 'Agriculture, Youth and Entrepreneurship Project (PAJE)', the first project to be prepared under its new Country Strategic Opportunities Programme (COSOP) 2019-2024. The Development Objective of PAJE is to reduce poverty and optimize economic benefits of agri-food value chains with high potential by facilitating access to tailored (appropriate/adapted and targeted) financial services for the first time to more than 5,000 beneficiaries. Two principal outcomes are sought under PAJE's Component 1, namely "Agri-food MSMEs created and launched" (6,240 by the end of the project) and "Access of small-scale producers and their organizations to markets improved through long-term, equitable contract farming arrangements with agro-industries" (4,000 producers by the end of the project).
205. To achieve these two outcomes, the project will finance:
- (i) Quality business development and technical advice for the MSMEs;
  - (ii) Establishment and operationalization of contract farming arrangements between small-scale producers and agro-industries; and
  - (iii) Construction and rehabilitation of wholesale and intermediary markets.
206. Under Component 2, namely "Improve the access to financial and related services", the main outcome is "Access of agricultural value chain actors to financial services improved" (5,752 persons or MSMEs will have access to financial services for the first time). This outcome will be achieved by the:
- (i) Elaboration and adoption by financial institutions of inclusive financial tools and mechanisms suitable for agricultural value chain activities;
  - (ii) Reinforcement of technical capacities of financial institutions to develop appropriate

<sup>78</sup> <https://www.undp.org/content/dam/cafi/docs/RoC%20documents/PI%20REDD%20RoC%20%20version%207%20finale.pdf>

<sup>79</sup> See CAFI Executive Board Decision from June 2020 meeting here <https://www.cafi.org/content/cafi/en/home/events/cafi-executive-board-meetings-.html>

<sup>80</sup> IFAD has previously implemented 4 projects in Congo, namely the 'Projet de Développement Rural (PRODER 1, 2 and 3) and Projet d'Appui au Développement des Filières (PADEF).

financial services for the agricultural sector; and (iii) Professionalization of Mutual Savings and Credit Schemes (CMEC) established by previous IFAD projects in Congo. PAJE activities will increase PREFOREST impact under its Component 3 by strengthening and scaling up access to finance and market by smallholder farmers through an estimated co-financing of 1.5 million USD.

**Table 37: Linkage between relevant climate and forest financial mechanisms in the project targeted area**

Initiatives / projects / programmes	Amount	Intervention areas	Potential complementarity with PREFOREST
PREFOREST (2021–2028)	USD 29 M (for which cofinancing should be added: USD 9 M from Government, USD 1.5 M from IFAD and USD 7 M from CAFI (channeled through FAO))	Land-use planning; Deployment of climate-resilient agroforestry and forestry systems; Fuelwood sustainable supply; Strengthening national agricultural financing structures, business capacities and value chains	
CAFI (2021–2025)	USD 45 M (+20 M from bilateral channels)	Land-use planning; Development of agroecology and agroforestry; Sustainable management of forest; Development and implementation of energy strategy; Improvement of the safeguard monitoring system; Capacity strengthening of non-government actors on the monitoring of the implementation of the Letter of Intent	Strengthening sustainable access and use of energy through: (i) the development of forestry and agroforestry plantations for energy production; and (ii) the promotion of the production and utilization of improved cookstoves
IFAD PAJE (2021–2025)	USD 23 M	Strengthening of entrepreneurship on agriculture sector	Strengthening MSME access to finance and markets through: (i) financial and technical support and the establishment of commercial partnerships and other stable procurement mechanisms; (ii) the development of a national financial inclusion strategy with emphasis on rural agriculture financing; and (iii) the formalization of CMECs
Forest Investment Programme (FIP)	USD 24 M	Considered as a component of the “Agricultural Value Chain Development Programme”	Development of agroforestry plantations (for subsistence and commercial agriculture), and fuelwood plantations in degraded and non-forest areas, in the Northern Congo.

Gov led interventions (PRONAR, Makala)	USD 10M (+ national budget)	Plantation for energy purpose	Strengthening of the access to fuelwood, for Brazzaville supply
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207. **French Development Agency (AFD):** AFD supports Congo through the implementation of two relevant projects, namely “North Congo Forest Landscapes” (*Projet Paysage Forestier Nord Congo - PPFNC*) and “Revival of the Agricultural Sector” (*Relance du Secteur Agricole*). The main objectives of these projects are to improve management of land, fauna and forest ecosystems in a series of community developments in Sangha and Likouala (populated areas situated in forest concessions), as well as to support agricultural development in savanna areas (particularly cocoa cultivation), especially in departments adjacent to the departments of Sangha and Likouala. However, these projects have not yet started.
208. **Global Environment Facility (GEF):** Congo is currently receiving support<sup>81</sup> essentially to manage fauna and biodiversity in the protected areas of north Congo on the border with Gabon, as well as for marine ecosystems, which are very important thematic issues for Congo, but not considered for financing under its REDD+ IP.
209. Although the country received approval for its REDD+ IP from the Forest Investment Programme (FIP) in December 2017,<sup>82</sup> this funding is conditional on financial availability of funds. The FIP will support the implementation of two projects, namely: (i) The North Congo agroforestry project worth USD 16 million, with the World Bank as the executing agency and (ii) The Pool/Plateaux community agroforestry and fuelwood project (PACBE) worth USD 8 million, with the African Development Bank (AfDB) as the executing agency. Funding for the implementation of the PACBE was finally approved on January 27, 2020,<sup>83</sup> and the project yet to start will be implemented as a component of the “Agricultural Value Chain Development Programme”.<sup>84</sup>
210. In terms of adaptation, Congo has received little funding to date. The country is currently receiving funding of approximately Euro 1 million from the AFD’s “Adapt’action” programme, enabling it to conduct studies to increase understanding of the impact of climate change on the population and ecosystems and to improve its NDC. Furthermore, the Adaptation Fund has recently approved the Congolese Concept Note for a project of almost USD 10 million, which aims to improve climate information, alert systems, as well as the adaptation capacities of the communities most vulnerable to climate change, essentially those in north Congo and Bouenza. Although this project’s main objective is to develop a better climate information system for the country, some community resilience building activities planned in the department of Bouenza are similar to certain activities planned by this Project. As a result, a coordination platform between the two projects is already planned.
211. Overall, most of the funding that the country receives in the environmental sector is related to the conservation of protected areas and sustainable forest management in forest concession zones, two related issues but whose primary objective is not to reduce GHG emissions from deforestation and forest degradation, or even to increase the country’s resilience to climate change. Furthermore, this funding is mainly directed at areas in northern Congo where the large rain forests are situated, and

<sup>81</sup> [https://www.thegef.org/projects-faceted?f\[\]=field\\_country:45](https://www.thegef.org/projects-faceted?f[]=field_country:45)

<sup>82</sup> [https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/meeting-documents/investment\\_plan\\_congo\\_republic\\_approved\\_decision.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/meeting-documents/investment_plan_congo_republic_approved_decision.pdf)

<sup>83</sup> <https://www.climateinvestmentfunds.org/projects/community-agroforestry-and-wood-energy-project-pacbe>

<sup>84</sup> [https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/meeting-documents/investment\\_plan\\_congo\\_republic\\_approved\\_decision.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/meeting-documents/investment_plan_congo_republic_approved_decision.pdf)



where logging is still the dominant economic activity. In its REDD+ IP, the country makes provision for the following main funding sources for implementation of REDD+: the FIP, the FCPF Carbon Fund, CAFI and GCF.

212. In general, Congo has identified several REDD+ projects, but available and committed funding is insufficient to fund all the necessary investments to reduce GHG emissions from deforestation and degradation, as well as to increase the resilience of the local people who practice slash-and-burn agriculture and consume fuelwood in the areas of influence of the country's large urban centers. CAFI will provide financial support of USD 65 million out of which 45 million will come from the legal fund<sup>85</sup> and USD 20 million from aligned funding. This contribution represents approximately 25% of requirements to implement the Investment Plan. CAFI could provide a supplementary contribution if the Congolese Government respects its commitments stated in the Letter of Intent although this is not part of the investment priorities of CAFI and the FCPF Carbon Fund. The FCPF will concentrate its funding in the Northern Congo (the departments of Sangha and Likouala) which are outside the scope of this Project, while CAFI has integrated crosscutting projects such as the development of the National Land-Use Plan (*Plan National d'Aménagement du Territoire* - PNAT) and its National Land-Use Scheme (*Schéma National d'Aménagement du Territoire*- SNAT), as well as strengthening of land rights. There is also support to the sustainable management of high-carbon ecosystems (such as peatlands), strengthening of forestry governance, better management of the mining and hydrocarbons sector, as well as the development of savanna agriculture.
213. Congo believes that the funding to be provided by the GCF for this Project will not only be complementary to the abovementioned funding initiatives, but also that it will provide crucial funding to overcome the barriers faced by populations in south Congo in implementing climate-resilient agroforestry and forestry practices and adopting fuelwood consumption reduction measures that will contribute to the country's GHG reduction efforts.

**Table 38 : Funding Plan for the REDD+ Investment Plan (required GCF funding in gray)**

<b>EFFECT 1: Forests and peatlands are managed sustainably, biodiversity is conserved and planted areas are increased</b>		<b>Amount: USD 220 + million</b>
Product 1.1	The Forest code and its implementing legislation are revised, published and disseminated	Requirements: USD 0.1 million Sources: GCF, government
Product 1.2	FMU/FEU and protected areas are classified	Requirements: To be determined Sources: private sector, government, NGOs
Product 1.3	All concessions are developed (current CAT ( <i>Convention d'aménagement et de transformation</i> [Agreement on Land-Use Planning and Transformation]) and CTI ( <i>Convention de transformation industrielle</i> [Industrial Processing Agreement]))	Requirements: USD 43 million Sources: EU, AFD (PPFNC), private sector
Product 1.4	Certified sustainable management forest concession areas are increased	Requirements: USD 38.5 million Sources: Private sector, KfW (PPECF), PACICOF (ADB) CV4C (EU), GCF, Government
Product 1.5	The EFIR guide is adopted and disseminated	Requirements: USD 0.1 million Sources: FCPF, GCF
Product 1.6	The FLEGT mechanism is operational and supervision capacities are strengthened	Requirements: USD 21 million Sources: EU, PACIGOF (ADB), GCF, DFID

<sup>85</sup> Part of this amount is considered as PREFOREST co-financing.



Product 1.7	A strategy to supervise the artisanal sector is developed	Requirements: USD 0.56 million Sources: government
Product 1.8	Timber plantations and restoration of degraded areas are developed	Requirements: USD 4 (+) million Sources: GCF:
Product 1.9	Implementing legislation on the law on fauna and protected areas is developed, published and disseminated	Requirements: USD 0.6 million Sources: Government
Product 1.10	The protected areas network is strengthened and developed	Requirements: USD 112.6 million Sources: PPFNC (AFD), PFDE II and TRIDOM II (GEF), WB, ECOFAC 6(EU), CARPE (USAID), GCF, EU, NGOs, government
Product 1.11	Income-generating activities are developed	Requirements: To be determined Sources: N/A
Product 1.12	Knowledge of peatlands is improved and sustainable management strategies are developed for these areas	Requirements: To be determined Sources: IKI, CARPE (USAID), Fonds Bleu [Blue Fund], GEF/GCF, government, NGOs
<b>EFFECT 2: Sustainable agricultural practices are implemented, productivity is improved and savanna areas are developed</b>		<b>Amount: USD 106 + million</b>
Product 2.1	The agricultural policy, law and implementing legislation are developed, published and disseminated	Requirements: USD 8 million Sources: PDAC (WB), GCF
Product 2.2	Sustainable agricultural practices are developed and productivity is intensified for cassava, banana and cocoa	Requirements: USD 94 million Sources: PDAC (WB), Pg Cacao & PPFNC (AFD), FIP, IFAD/OFID, EU, ECAAT, GCF, CARPE (USAID/NICFI), government, private sector
Product 2.3	Agro-industry is developed in savanna areas	Requirements: USD 4 million Sources: PDAC (WB), CAFI, EU, GCF, government, private sector
Product 2.4	The capacities of the administration and other relevant institutions are strengthened	Requirements: To be determined Sources: PDAC (WB), ECAAT, GCF, government
<b>EFFECT 3: Non-sustainable extraction of fuelwood is reduced</b>		<b>Amount: USD 1,068 million</b>
Product 3.1	Fuelwood plantations are developed	Requirements: USD 50 million Sources: GCF, FIP, EU, ADB, AFD
Product 3.2	Techniques to process and use firewood and charcoal are improved	Requirements: USD 7.4 million Sources: GCF, FIP, ADB, AFD
Product 3.3	Master plans for domestic energy are developed for the towns of Brazzaville and Pointe-Noire	Requirements: To be determined Sources: Government
Product 3.4	Renewable energies are developed in rural areas	Requirements: USD 10.5 million Sources: GEF, EU, GCF, Government
<b>EFFECT 4: The mining sector is developed with reduced impact on forest ecosystems</b>		<b>Amount: USD 7.5 million</b>
Product 4.1	The Mining Code and its implementing legislation are revised, published and disseminated	Requirements: USD 0.6 million Sources: Government
Product 4.2	Reduced-impact standards for the development of the mining sector are compiled and implemented	Requirements: USD 1.9 million Sources: Government
Product 4.3	The artisanal mining sector is supported	Requirements: USD 5 million Sources: Government
<b>EFFECT 5: Intersectoral governance and participation by all stakeholders in development is improved</b>		<b>Amount: USD 185 million</b>
Product 5.1	The PNAT and SNAT are developed, adopted and implemented	Requirements: USD 24 million Sources: CAFI, GCF
Product 5.2	Land management is improved	Requirements: USD 158 million

		Sources: WB, GCF
Product 5.3	The ESIE development, validation and monitoring process is improved	Requirements: USD 2 million Sources: Government
Product 5.4	The law on the environment and its implementing legislation is revised, published and disseminated	Requirements: USD 0.6 million Sources: Government
Product 5.5	Incorporation of local communities and indigenous populations in development projects is improved and the implementing legislation on indigenous populations is developed, published and disseminated	Requirements: USD 0.5 million Sources: Government
<b>EFFECT 6: REDD+ and REDD+-aligned funding are mobilized and innovative funding tools are developed</b>		<b>Amount: USD 40 + million</b>
Product 6.1	Revenue mobilization and management of state public resources in order to support integrated and sustainable development are improved	Requirements: USD 43 million Sources: PRISP (WB), EU, government
Product 6.2	National private investment in sustainable mitigation activities in the LULUCF sector is increased	Requirements: To be determined Sources: PDAC & PADE (WB), PACIGOF (ADB), FINFORTROP (AFD), GCF, EU
Product 6.3	Mobilization of international public funding for the development of REDD+ activities is consolidated	Requirements: To be determined Sources: Government, multilateral funds
Product 6.4	Innovative funding mechanisms to minimize the risk of rebound effects from economic development support projects (agriculture, plantations, artisanal mines, etc.) in forest areas are developed and promoted	Requirements: To be determined Sources: FCPF, FIP, government
<b>Coordination, monitoring and evaluation of implementation of the Investment Plan is defined, established and effective</b>		Amount: To be determined Sources: PRISP, FCPF, IKI, GCF, government

### **III. Enabling environment for project formulation**

214. **National Development Plan (NDP) priorities and the government's commitment to REDD+.** The Congolese Government clearly established its priority of revitalizing the agricultural sector in its NDP. Agricultural development was accepted as one of the two "strategic priorities" of the NDP, with the implementation of productive programmes being organized around three types of production structures, specifically family agriculture and semi-industrial agriculture. Thus, the political and institutional context governing the NDP provided a solid foundation for the Project, which comes within the scope of the Congo's goal to diversify its economy. In this sense, the Project is receiving strong support from the government and its sectoral ministries, such as the MAEP and MEF, who will support implementation of the Project.
215. Furthermore, within the context of its NDP and its REDD+ National Strategy, the government clearly indicated its priorities in terms of reducing GHG emissions in the forestry and agricultural sectors, relying on the REDD+ financial mechanism to achieve it. This enthusiasm for REDD+ has led the government to develop the necessary reforms to attract and rapidly implement REDD+ investments using a multi-pronged strategy, specifically through funding from the FCPF, CAFI, the UN-REDD Programme, as well as the Green Climate Fund. The Project directly addresses these priorities by concentrating its efforts on various priorities of the REDD+ National Strategy and Investment Plan.
216. **The importance of the forest ecosystems in south Congo.** Despite the importance of the forest ecosystems of Mayombe and Chaillu, and in spite of the presence of numerous gallery forests in the

south of Pool and in Bouenza, **the forests in the south receive little support compared to those in the north of the country**. Furthermore, the southern region is by far the most populated, and the country's high rate of demographic growth is causing increasing degradation of these ecosystems, as a result of pressure exerted by slash-and-burn agriculture, fuelwood collection, infrastructure development and forest fires. This degradation is particularly notable in the Project areas. Despite this situation, most of the REDD+ efforts to date have been deployed in the north of the country, particularly within the context of support related to the FCPF's ER-Programme and the APV-FLEGT. This Project will therefore meet the demand for planning and deployment of REDD+ investments in an area of the country desperately in need.

217. The Project is inspired by numerous promising case studies, particularly in the DRC and Cameroon, two adjacent countries with similar biophysical conditions, where agroforestry initiatives have been successfully implemented to stimulate perennial agricultural production and fuelwood production. The Makala project in the DRC is a prime example as are the cocoa-plantain production experiences in Cameroon. Furthermore, various field visits during Project design demonstrated prime examples of agroforestry techniques already in place in the Congo, particularly the combination of cassia with subsistence crops, such as cassava in the district of Madingou, Loudima and Kayes.<sup>86</sup>
218. **Application of the legal framework in terms of land-use planning and land tenure rights.** The country's recent legislative reforms provide a favorable environment to support land-use planning efforts at local level, as well as to strengthen land rights. In fact, the Project supports the country's land planning efforts, particularly Framework Law no. 43-2014 of October 10, 2014 on land-use planning and development. In particular, Decree no. 2013-280 of June 25, 2019 related to the creation of Community Management and Development Committees (CMDCs) gives each village and neighborhood the opportunity to invest in community development on the basis of a community land-use plan. Furthermore, Law 21-2018 of June 13, 2018 sets the rules for land-use and occupation and is innovative in that it makes it possible for local communities to register land that they are holding customarily and to develop this land through a land-use plan. The Project therefore offers a direct response to the government's recent legislative priorities.
219. **The increasing interest of the private sector in revitalizing the agricultural and forestry sector.** In the wake of government efforts to revitalize the country's agricultural sector, the private sector is invited to become more involved. To this effect, the government is actively seeking to implement reforms and incentives to attract private sector investment in Congo. The government has made forest and arable land available (specifically via PRONAR) to stimulate productive activity and strengthen value chains. The government has also established partnerships with various private enterprises (such as EcoOil, COFAO, etc.) to revive productive activities around the Nkayi oil-mill and the Loudima fruit plantations, and to revitalize the cocoa sector in the country. The Project falls within the scope of these efforts to mobilize the private sector, particularly agro-industrial enterprises and financial institutions, in order to consolidate value chains, mobilize new capital and stimulate the emergence of small and medium-size private initiatives in Congo in the agricultural and forestry sectors.

#### **IV. Main recommendations of the feasibility studies**

220. This feasibility study consolidates several prefeasibility studies and other underlying studies

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<sup>86</sup> See Feasibility Study production system 1: Cassia + Cassava + Maize + Peanuts

conducted during the three years of preparation for this Project. The main recommendations or findings of the different feasibility and underlying studies are summarized below. Please note that all studies are available in english as annexes to the feasibility study.

### Technical and economic feasibility study

(Please refer to FS Annex 3 Part 1 and 2 for full report)

221. The objective of this feasibility study conducted by CIRAD was:

- (i) To define production systems for forestry and agroforestry plantations suited to the soil and climate conditions in the different departments targeted by the Project;
- (ii) To define and locate areas where this type of plantation could be established;
- (iii) To conduct an analysis of value chains affecting various important products (cassava, cocoa, groundnuts, plantains) included in the production systems;
- (iv) To elaborate cost-benefit studies on the basis of the value chain analyses in order to determine the economic viability of three different Projects; and
- (v) To initiate the definition of an environmental and social management framework, including the incorporation of potential risks, either direct or indirect, to the environment and the affected populations.

222. The study then analyzes the value chains (VC) for cocoa, groundnuts and plantains. In conclusion, it emphasizes that insufficient support in the form of agricultural extension services seems to be the main constraint to the development of value chains in Congo. This lack of support is translated by: (i) Difficulties to accessing bank credit;

- (iii) Insufficient technical supervision;
- (iv) Lack of improved plant material;
- (v) Lack of ability to manage crop diseases;
- (vi) Lack of small-scale mechanization suitable for cultivation, as well as processing of products;
- (vii) Waste and predators;
- (viii) Lack of manpower; and
- (ix) Transport problems.

223. In terms of the cocoa value chain, the study notes that it has not been well structured for several decades. Its reconstruction will require substantial and sustained effort over time, and it is uncertain whether the current stakeholders (government and private companies) are able to provide this effort in the long term. For the groundnut value chain, the study notes that it must evolve, but should maintain its qualities (frugal inputs, accessible to women, value added generation, inclusiveness). The main bottleneck is to improve agricultural yields and corrective measures are:

- (i) improved seed
- (ii) support to farmers,
- (iii) development of small-scale agricultural mechanization,
- (iv) Development of credit system.

224. Cocoa based agroforestry plantation is possible on relatively deep (> 2m) sandy-clay soils (proportion of sand <60) ensuring a large volume for root prospecting, especially in areas with poorly distributed rainfall throughout the year. A precise pedological characterization will be necessary given the sometimes significant variability of the soils, in particular depending on the relief (hydromorphic lowland zone, impoverished ridge zone, etc.). The plots must not have been exhausted beforehand

by several cycles of food crops (eg cassava) but installation on fallow land is possible. Installation and maintenance will be facilitated in relatively flat areas which will be preferred. Rainfall must be at least 1300 mm per year with a dry season not to exceed 3 months. In this context, the soil-climate interaction is important, a pluviometry at the limit of acceptability for cocoa can be compensated by soils having a good water retention capacity or located on a shallow water table. The shade provided by associated species (banana, trees, palms) is beneficial to cocoa plants by regulating the microclimate and avoiding direct exposure of young plants to radiation. Direct exposure to solar radiation can increase physiological stress, evapotranspiration and vulnerability to certain pests (mirids). Shading makes it possible to greatly limit grass cover. However, too much shade could have harmful effects on cocoa trees, in particular by promoting the development of conditions conducive to disease (increased incidence of pathogenic fungi and bacteria, for example brown rot). The level of shading must therefore be balanced in order to increase the favorable effects while limiting the unfavorable effects. Shading allowing 50 to 70% of the incident light to pass through is recommended. When trees associated with cocoa trees will grow, shade management will be done either by pruning and / or tree elimination on a case-by-case basis (felling, mortality caused by barking).

225. With regard to the cocoa-plantain-groundnut agroforestry plantations, the study notes that these are globally profitable, according to all envisaged scenarios. However, within contexts where costs are recorded, and within a context of family agriculture where certain labor costs are internalized, the initial plantation startup investments are only recovered much later on. As these initial investments are substantial, it is not realistic to envisage small-size farmers being able to sustain them and being left almost without income for approximately 10 years. Within the family agriculture context, a grant covering part of the upfront investment could make the plantation almost profitable from the second year onwards.
226. For the plantain value chain, the study indicates that it deserves the attention of the public authorities, because of the domestic market, which is partially covered by national production, and the numerous opportunities to improve the income of the different stakeholders at all levels of this value chain.
227. In respect to cost-analysis for acacia-cassava-maize agroforestry plantations in the regions of Pool and Niari, the study notes that they are not profitable if the production costs are taken into account. However, within the context of family agriculture, when certain labor costs are internalized, the plantation becomes profitable over the long-term, more rapidly in Pool than in Niari. In a family agriculture situation, a grant covering startup investment costs during the first rotation would make the plantation profitable almost from the first year and, according to forecasts, it should remain so over the long-term with no external financial support.
228. The interest of acacias consists mainly in their strong atmospheric nitrogen fixation capacity which has been quantified in particular in Congo in the region of Pointe-Noire (60% of the nitrogen present in the biomass of acacia mangium comes from the 'Atmosphere, Tchichelle et al., 2017a). This fixing capacity is expressed in particular in soils initially poor in nitrogen. The cumulative amounts of nitrogen mineralized in the soil (horizon 0-20 cm) under acacia stands reached 340 kilos of nitrogen per hectare 2 years after their planting (Tchichelle et al., 2017b) which is incomparably higher than in a savannah. At the age of 7, the nitrogen in the soil, mainly contained in organic matter (horizon 0-25 cm) and the nitrogen present in acacia residues (thin branches and leaves), represents a quantity of 1,74 tonnes per hectare (Tchichelle et al., 2017b). These characteristics clearly show the agronomic potential that this species can represent in the Congo. In this note, the aim is to show how to convert

this potential into services dedicated to agroforestry production (wood and agricultural products) and environmental conservation (soil fertility and carbon storage).

229. The various experiments carried out in the Congo show that poor savanna soils are perfectly suited to *acacias mangium* and *auriculiformis*. Agroforestry plantations are possible in areas of deep, sandy or clay-sandy soils. The more sandy the soil, the greater its depth to ensure maximum prospecting by acacia roots to compensate for the decrease in water reserves, especially in the dry season. The land should be relatively flat to facilitate planting, maintenance and operations. The average annual rainfall should be at least 1200 mm and the presence of a marked dry season of 3 or 4 months will not be a limit. The relative humidity of the atmosphere must be high (> 80%), a favorable criterion for the growth of acacias.
230. It has been shown that the introduction of nitrogen-fixing trees, and in particular acacias, makes it possible to increase the carbon stock of the soils compared to previous uses (pastures, savannah, sugar cane, etc.). Regarding agroforestry practice, it has been shown in the Democratic Republic of Congo (Mampu massif, based on *Acacia auriculiformis*, cassava and maize) an increase in carbon and nitrogen contents in the soils after one, two and three rotations (Dubiez et al., 2018) including when the technical itineraries included a burning of the residues at the end of the rotation. This increase is on average 16% under plantations compared to the surrounding savannas.
231. Other agroforestry and crops models have been identified by CIRAD and analyzed at formulation stage. These are the eucalyptus based system, mixed acacias-eucalyptus, teak system, which are more suitable for monoculture. These models have not been selected as per the below reason:
- Environmental risk for the use of eucalyptus is high. The project could not manage the potential risks due to the establishment of such systems (despite potential existing mitigation actions);
  - Particular attention must be paid to the choice of teak plant material which will largely determine the quality of the wood (eg natural durability, percentage of heartwood, infradensity, etc.) as well as the formation of rectilinear barrels with limited branching. Other criteria will be decisive for a quality production such as the vitality of the plants when they leave the nursery, the duration of rotation and the management of plots, teak being sensitive to competition. This is not yet fully mastered at local level by local communities. This system is also more efficient from a lumber production perspective only as this wood is not valorized directly by local communities. A dedicated market and existing demand is necessary for the sustainability of such system and this market does not currently exist;
  - Even if minimal fertilization is recommended for the systems indicated above, the competition on organic elements and water reserve are existing, especially in savanna area;
  - The of the criticisms often made is that eucalyptus system do not store carbon in a sustainable manner because of their short rotation time.
232. For the Assisted natural regeneration, it has been noted that the maintenance of the forest regrowth will allow a substantial saving of time for the regeneration of the forest cover. The growth of stems thus favored (instead of being cut back systematically) will allow young trees to quickly dominate invasive, bushy or herbaceous species. With ANR management, the gain in growth is significant. Peltier et al., (2014) show in DRC that, 31 months after the initial burning, the number of woody regrowth stems greater than 2.5 m in height is 638 per hectare in RSA compared to 202 stems per hectare on plots that have not been managed in RSA. Consequently, the faster reconstitution of the

forest cover makes it possible to reduce the colonization by herbaceous plants limiting the risk of savannah and to preserve soil fertility. In order to promote and disclose this efficient management method, the farmer must be able to re-exploit the fallow that he has helped to regenerate. Consequently, this system must be encouraged by securing access to land for farmers.

### Operational and financial feasibility study

(please refer to FS Annex 2 for full report)

233. The objective of this study conducted by CIRAD was:

- (i) To analyze potential governance structures to support the implementation of investment projects by identifying their main strengths and weaknesses in achieving their mandates, depending on the role they need to fulfill;
- (ii) To analyze the material and operational resources necessary to support effective implementation of the Project, depending on the production systems and species retained by the technical and economic feasibility study;
- (iii) To make recommendations in order to meet the observed needs, particularly by strengthening government structures;
- (iv) To propose an operational structure to support the Project, depending on the analysis and recommendations made.

234. The study is structured into five parts, specifically: (i) Government stakeholder structures; (ii) Material, and operational needs; (iii) Strengthening of partner institutions; (iv) Operational organization of the Project; and (v) Financial feasibility.

235. In respect to public sector institutions, a SWOT analysis of following government entities was carried out: Ministry of Agriculture, Livestock and Fisheries; the Ministry of Forest Economy; National Reforestation Service; National Afforestation and Reforestation Programme; Forestry Research Institute; Research Center on Sustainability and Productivity of Industrial Plantations; Agricultural Research Institute; and the Center for the Development of non-timber forest products (*Centre de valorisation des produits forestiers non ligneux* - CVPFNL).

236. As main findings, the study noted numerous common traits amongst the different structures. The strengths noted by the study include, *inter alia*, the legal framework concerning the creation and organization of each structure, the political will demonstrated in terms of the development of forestry and agricultural plantations and the existence of a bank of knowledge and quality research products. In terms of weaknesses, the study notes, *inter alia*, the lack of human resources (with a very unbalanced population pyramid and very few field technicians), the irrational use of scarce resources of qualified, available personnel, insufficient budgetary allocations, outdated and insufficient operational materials. With regard to opportunities, the study revealed, *inter alia*, the availability of undeveloped land for implementation of the Project and the existence of a potential market for the consumption of products resulting from the Project. In terms of threats, the study mentions, *inter alia*, conflicts of competence between the different parties involved in projects implementation and the loss of technical competence in the absence of human resources strategy, notably to fill in vacant positions that interferes with the achievement of their mission over time.

237. In respect to strengthening partner institutions, the study notes that all national structures involved in reforestation have an unbalanced population pyramid and a strong need to recruit young technicians and engineers, and specifically identifies the human resource and training needs for the MEF, PRONAR, SNR, IRF/CRPDI, IRA and ENSAF (*Ecole Nationale Supérieure d'Agronomie et de*

*Foresterie* [National College of Agronomy and Forestry]) of the Marien Ngouabi University. With reference to material needs, the study identifies those related to plant material, as well as the need for investments to rehabilitate/modernize nurseries and adjoining infrastructures in Ngondji (Kouilou), Dolisie (Niari), Loudima (Bouenza), Kintélé (Pool) and Enyelle (Likouala). Concerning the operational organization of the Project, the study defines the general framework for Project governance, consisting of the Project Steering Committee (SC), a Project Technical Committee (TC) and a Project Management Unit (PMU) and defines the responsibilities of each of them.

238. In 1989, the Government of Congo established departmental nurseries throughout the country with the main objective of providing forest and fruit seedlings to meet the needs of National Tree Day in each department. These nurseries were subsequently transferred to National Reforestation Agency (SNR).

**Table 39: Information on the current status of government managed nurseries.**

Department	Location	Unit	Ecosystem type	Production capacity (seedling/ye ar)	Maintenance status	Seedling species produced
KOUILOU	Youbi	Forest station	Savannah, dense forest, gallery forest	200,000	Degraded	Forest, savannah, ornamental, fruit and NTFPs
	Ngondji	Semi-industrial nursery	Savannah, forest gallery	3,000,000	Degraded	Forest, savannah, ornamental and fruit trees
	Mayombe	Forest station	Dense forest	100,000	Non degraded	Forest, ornamental, fruit and NTFPs
NIARI	Dolisie	Agency	Savannah, forest gallery	200,000	Non degraded	Forest, ornamental, fruit and NTFPs
	Malolo	Forest station	Savannah, forest gallery	100,000	Non degraded	Dense forest, savannah and ornamental
	Ngouha 2	Forest station	Dense forest, forest gallery	50,000	Degraded	Dense forest, fruit trees and NTFPs
BOUENZA	Loudima	Forest station	Savannah, forest gallery	100,000	Degraded	Savannah, fruit and ornamental
	Madingou	Nursery	Savanna	100,000	Degraded	Savannah, fruit and ornamental
	Kayes	Nursery	Savannah	20,000	Degraded	Savannah, fruit and ornamental



BRAZZAVILLE	Brazzaville	Nursery	Savannah	100,000	Non degraded	Savannah, forests, fruit and ornamental
POOL	PK-45	Forest station	Savannah, forest gallery		Degraded	
	<b>Kintélé</b>	<b>Semi-industrial nursery</b>	<b>Savannah, forest gallery</b>	<b>3,000,000</b>	<b>Degraded</b>	<b>Savannah, forest, fruit, ornamentals and NTFPs</b>
	Kinkala	Forest station	Savannah, forest gallery	100,000	Non degraded	Savannah, forest, fruit, ornamentals
	Mbouambé-Lefini	Nursery	Savannah, forest gallery	100,000	Non degraded	Savannah, forest, fruit, ornamentals
PLATEAUX	Ossio	Nursery	Savannah, forest gallery	60,000	Degraded	Savannah, forest, fruit, ornamentals
	Djambala	Nursery	Savannah, forest gallery	50,000	Degraded	Savannah, forest, fruit, ornamentals

239. The nurseries marked in "bold" in this table will be rehabilitated to provide a sustainable supply source to Project beneficiaries in four departments targeted by the Project (Kouilou, Niari, Bouenza and Pool).

240. There is a large number of private nurseries across the country in general and within the Project area in particular. For example, PRONAR facilitated the establishment of five private nurseries in the departments of Brazzaville, Pool, Bouenza with a production capacity of 100,000 seedlings per year each. These nurseries currently have reduced activity due to the small areas planted. They cover between 500 m<sup>2</sup> and 2 hectares and produce forest and fruit seedlings, as well as ornamental and market garden seedlings upon request. These nurseries produce seedlings of reforestation, but also fruit trees seedlings from vegetative propagation (grafting, layering, cuttings). Prospects are good for the development of private structures in this area if demand emerges.

241. Regarding the financial feasibility, the study provides an estimation of development costs over seven years (including R&D), as well as operational costs, including the purchase of plants/seeds, inputs, and equipment and technical support from the government structures involved in Project implementation. The produced information has been used as the basis of the PREFOREST budget development.

### Feasibility study for the fuelwood sector

(Please refer to FS Annex 1 for full report)

242. The feasibility study for the fuelwood sector conducted by CIRAD aims to define the modalities of intervention in the fuelwood sector in the supply basins for the cities of Brazzaville and Pointe-Noire. The study starts with a situational analysis of fuelwood consumption in certain towns in Central Africa, and then estimates the fuelwood consumption for Brazzaville and Pointe-Noire. To this effect, the study notes that the average consumption per town is estimated at 1.4 kg firewood eq/day for

persons using fuelwood as their main source of energy, and 0.7 kg firewood eq/day for persons using gas, oil or electricity as their main source of energy. The share of charcoal consumed in Pointe-Noire represents 86% of total fuelwood consumption and that of Brazzaville is 87%. The yield rate for traditional charcoal making is 12%.<sup>87</sup> The city of Pointe-Noire consumed approximately 384,000 tonnes of fuelwood equivalent and the city of Brazzaville approximately 832,000 tonnes of fuelwood equivalent in 2018. The study estimates that fuelwood supply needs would exceed 1 million tonnes and 460,000 tonnes of firewood equivalent for Brazzaville and Pointe-Noire respectively in 2024.

243. The study then makes detailed recommendations to improve management of the fuelwood resource and to organize the sectors in Brazzaville and Pointe-Noire. This specifically refers to: (i) Developing supply master plans for domestic energy; (ii) Dedicating part of the Pointe-Noire Eucalyptus forest for the production of charcoal; (iii) Developing acacia-based agroforestry plantations and mixed acacia-eucalyptus plantations in the fuelwood supply basins; (iv) Improving the management of natural forest formations through the developing the practice of assisted natural regeneration in agricultural complexes; (v) Improving charcoal making practices to optimize charcoal yields and limit losses; (vi) Contributing towards the distribution and appropriation of improved stoves by urban households; (vii) Studying the possibility of deploying alternative energies (domestic gas) to limit dependence on fuelwood. The study mentions that the proposed actions are inter-linked, and that the fuelwood issue should be handled as a whole, from management of wood resources to consumption by urban households and artisans. However, this study emphasizes that it is initially important to concentrate efforts on management of the resource and ensure that it is managed sustainably. It is only under these conditions that it will be possible to subsequently formalize and organize the fuelwood sectors.

244. In order to meet the demand for wood energy in the two main agglomerations of the Republic of Congo (Brazzaville and Pinte Noire) and to limit the pressures on natural forest ecosystems, the study are proposing the development of plantations dedicated to the production of wood energy. Two types of plantations are available:

- Agroforestry plantations with *Acacia auriculiformis* combining the production of wood and the production of food crops (cassava, maize, etc.)
- Mixed Acacia x Eucalyptus plantations helping to produce wood for charcoal production;

The second option, with the introduction of Eucalyptus has not been considered as more environmentally risky.

These plantations may be developed by local communities (small farmers), by private individuals or by industrialists interested in engaging in the development of plantations for the production of wood energy.

245. The appropriation of the model and the development of the plantation cannot be done only in an environment where the wood resource is scarce for small producers. Indeed, the establishment of plantations, by small producers, requires a significant investment, not only financial but also in labor (preparation of the land, production of plants, planting, maintenance, protection against fires, etc.). As long as farmers have access to a free forest resource, they will not engage in plantation development. It is therefore necessary to target areas in which access to wood resources is problematic for the development of plantations by small producers.

246. The study proposed that the project targets the savannas of Niari in the departments of Niari and

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<sup>87</sup> Boundzanga et al., 2014

Bouenza for plantation development. These plantations will make it possible to meet the demand for wood energy in the towns of Nkayi and Dolisie, to limit pressure on natural formations and to encourage farmers to produce wood in savannah environments. Indeed, agroforestry systems with *Acacia auriculiformis* could be developed on the grassy savannas of Niari in order to reduce the pressures on the eastern part of the Mayombe forest massif and to help develop savannahs by producing fuelwood and food crops. These plantations, in the medium term, will be able to help supply the towns of Dolisie and Nkayie with wood energy and in the longer term, these same plantations will be able to supply the town of Pointe-Noire when the supply basin is enlarged due to the increase in the population of the city of Pointe-Noire.

247. The Study carried out by CIRAD have shown that it is a productive system, appropriate in contexts where access to wood resources is critical and contributes to generating income in rural areas. They have also shown that they can indirectly reduce the ecological impact of slash-and-burn agriculture on natural forests. However, the productions resulting from these agroforestry systems must be accompanied by action in the marketing of products.

### Financial feasibility study

(Please refer to FS Annex 4 for full report)

248. The financial feasibility study conducted by HORUS Development Finance complements the studies carried out by CIRAD and specifically focuses on funding arrangements for private investment projects within the context of the Project. The study's objective was specifically to: (i) Evaluate the economic and financial potential of identified investment projects and propose funding arrangements for each type of project, depending on the project phases; (ii) Identify Congolese financial institutions likely to fund these projects, improve understanding of their constraints, and identify (specifically) mechanisms to remove these barriers; (iii) Formulate modalities for intervention for the GCF Project: identification of stakeholders and particularly contractors, contracting methods, conditions and procedures for mobilizing the different financial instruments.
249. The study makes detailed recommendations for the financing component of a GCF Project. Generally, the study recommends: (i) Targeting of credit beneficiaries based on the autonomy of financial institutions (FI) in the credit decision, independently of the grant award decision and respect for the classic credit eligibility criteria; and (ii) A detailed grant-credit mix for the three production systems studied by CIRAD and disbursements in kind for the subsidized investments. In terms of the proposed overall concept for the funding component, the study recommends: (i) Providing a substantial share of the grant both to build capacities and as a resource for credit; and (ii) A value chain approach to facilitate access to funding by agroforestry producers, with the objective of understanding market access and access to inputs for a climate-resilient and sustainable agriculture.
250. The study emphasizes the need to incorporate a certain number of prerequisites for credit financing of investment projects from the supply side, specifically: (i) Developing a credit supply suited to the needs of the agricultural and forestry sectors, as well as an adequate risk analysis and management methodology; (ii) Improving access to the distribution network of Congolese FIs for the most vulnerable populations, whose means of travel are limited; and (iii) Establishing and disbursing long-term lines of credit and/or guarantee. Furthermore, as the GCF Project targets innovative activities and changes in practice that go against the risk analysis modalities of financial (and particularly microfinance) institutions that are based on an analysis of past activities, the study recommends a progressive approach, at least for the smallest stakeholders, the potential clients of microfinance establishments. The study indicates that the establishment of revolving funds may constitute a useful

intermediate phase to launch investment projects, as an alternative to a 100% grant. However, the projects should be taken up again by MFEs to allow sustainability of the service.

251. An analysis of supply within the context of the study shows that, if interested, the financial sector would have the capacity to partially meet the identified demand, if it received support in the form of lines of credit (Euro 12 million) and guarantee (Euro 11 million). In order to be able to establish credit funding for most of the projects supported by the GCF Project, technical assistance is necessary to support both the credit demand and supply. Some projects may only be sustainable and therefore suitable for credit funding if the environment improves in terms of wood resource management or land security.
252. In order to implement and structure the financing component of the GCF Project, the study indicates that the project should have a full-time technical assistant for the financing component. His or her key role will be to involve FIs in the Project, ensure that partnerships develop effectively, and ensure synergy with other Project components. The Project should implement credit support activities to back up the development of healthy credit in partner FIs: client management support mechanism, financial education for project beneficiaries, and clear communication on the private nature of credit. To ensure sustainable impact in terms of funding, the Project support should not aim to develop financing only of the sub-projects identified by CIRAD but should also plan to develop a line of activity in each partner FI which includes this segment. Based on the previous study and the strategy of each FI, the procedures for Project-FI collaboration will be specified, incorporating credit lines, guarantee lines and technical assistance.
253. Regarding funding mechanisms, the study suggests that the grant be provided through costs share. The contribution by beneficiaries should be deposited in an account opened with a financial institution, preferably after the grant award decision. In cases where the grant can be paid during or at the end of the Project, it may constitute a credit guarantee. For companies in particular, a mechanism to subsidize plantation *a posteriori* based on results similar to that of the SGPS implemented by FAO in Uganda seems relevant and would promote access to credit. Investment grant award decisions could follow different channels depending on whether it applies to formal enterprises or small-size producers. For the latter, it is essential that they rely on local structures that are very familiar with the context.

### Public consultations

(Please refer to Annex 7 for full report)

254. The public consultations conducted by Initiative Développement consisted of a number of decentralized consultations in 12 districts from five departments, where the Project activities will be implemented, specifically the departments of Kouilou (districts of Madingo-Kayes, Mvouti and Hinda), Niari (district of Louvakou), Bouenza (districts of Loudima, Kayes and Madingou), Pool (districts of Ngoma TséTsé, Ignié and Ngabé), and Plateaux (districts of Ngo and Mpouya). The objective of these consultations was to present all components of the Project, to facilitate discussion, to use various meetings and site visits to measure barriers and opportunities, and to produce a report identifying recommendations for the GCF Project that are relevant and incorporate gender issues.
255. The plenary meetings brought together 415 people, including 62 women. Local administrative authorities for each district and their close associates were all very involved in the plenary meetings. Most of the agricultural sector chiefs generally mobilized producer groups, proposed field visits and took part in the discussions. Representatives of the MEF were also mobilized in plenary meetings and

field visits. Agricultural groups were routinely well represented in the discussions, and at least two representatives from women's groups attended each session. Land-owners were always well represented and effectively took part in the discussions.

The main concerns and recommendations for the Project are indicated in the table 9 below.

**Table 40: Main concerns and recommendations for the Project**

Main concerns	Recommendations
Access to land continues to be a major concern for producers: Difficulties in obtaining long-term access; Difficulty in expanding yields; Prohibition against planting trees; Conflicts between "land-owners" in terms of the validity of ownership (= insecurity for producers).	<ul style="list-style-type: none"> <li>• Dialogue needed between owners and producers to promote the development of agroforestry, involving land-owner families</li> <li>• Clarification of land ownership by supporting procedures for obtaining official land titles</li> <li>• Development of the practice of long-term access contracts (emphyteutic leases)</li> <li>• Ensure the development of women's access to agroforestry</li> </ul>
In savanna areas, despite the possibility of increasing yields, access to mechanization is random and slash-and-burn agriculture in forest areas is still preferred	<ul style="list-style-type: none"> <li>• Make producers think about their own possible role in climate change mitigation</li> <li>• Set up pilot experiments in savanna areas</li> <li>• Encourage real access to mechanization in savanna areas when conditions are met (no risk of erosion, adequate plant cover) with the corollary prohibition of slash-and-burn agriculture</li> <li>• Encourage agroforestry in savanna areas (orchards, fast-growing plantations, timber, windbreak hedges)</li> <li>• Disseminate good practices in terms of crop rotation and use of organic fertilizers</li> <li>• Rely on already existing experience and knowledge, encourage exchange of experiences</li> </ul>
Farm sizes are variable, but starting project support at a minimum of 10 ha will exclude the majority of producers in most districts, particularly where there is little or no mechanization	Review this data, and adapt it to the context of each district, with a lower bottom limit (2 ha to start with when there is no mechanization, which can be extended later on).
Most groups are not registered, particularly the majority of women's groups: the requirement to be in a formal group deprives most producers of access to the project	Presenting a project as a group may be a rule, but formalization of the group cannot be a prerequisite, rather a logical consequence of the project to be supported. Specific attention should be paid to the integration of women, who are too often forgotten in development projects, and application approval mechanisms should be adapted to real situations on the ground.
Fuelwood is a widely used resource, with use increasing with the level of need in towns: in savanna areas, this leads to felling even of fruit trees, and in forest areas, valuable of value (precious wood) are used to make charcoal and bake bricks	<ul style="list-style-type: none"> <li>• Educate land-owners, charcoal and brick makers on the use of "sustainable" fuelwood, in other words, wood from forests planted for their activities.</li> <li>• Revitalize plantations of fast-growing forest species and knowledge in terms of logging of planted forests</li> </ul>

	<ul style="list-style-type: none"> <li>Require re-planting for each felled tree, thus promoting existing tree nurseries (or their creation) and dissemination of planting and maintenance techniques</li> </ul>
Farm management, establishment of forecast budgets and operating accounts are almost non-existent practices, and even the concepts are rarely understood	<ul style="list-style-type: none"> <li>Conducting management training is a priority and a prerequisite for the project, for everyone, male AND female producers</li> <li>Provide a long-term vision of potential gains when planting forest species and fruit trees</li> <li>Provide close, long-term monitoring of project beneficiaries</li> </ul>
Even the terms “agroforestry” and “agroforestry techniques” cause concern because they are unknown	Basic training is essential but is not enough; there is a need for support in implementation as well as organization of experience sharing, which would provide reassurance about new techniques for producers living in insecurity and motivate them to also get involved. There should be a reference to the SNR in each department, whose implementation of such agroforestry techniques could be better known and disseminated
Producers complain about difficulties related to site access and transport of yields	This problem is a serious reality in ALL districts – To do with the priorities and investments planned by the government. Regarding marketing issues, there should also be discussions about yield increases, as markets and trade between wholesalers and producers are currently poorly organized
Use of and access to microcredit is very rare owing to the lack of agencies and the non-existence of a microcredit supply suited to agricultural producers. Added to this is the non-existence of operating accounts and even everyday operational management	There should be discussions at the highest level in order to create a credit supply suited to the farming world, but also at local level, with the opportunity for access by producers and their groups to a neighborhood agency, to open accounts and to take loans, pay back loans, save... All this should be created at local level
“A contribution of 20% is too high”; 10%, depending on the project area supported may be a handicap. Adaptations should be found in terms of payment	Generally, the idea of a contribution is accepted and even deemed normal. It is even considered as an element that could discourage opportunists. The level of 10% is acceptable. However, for a vast majority of women and indigenous peoples, arrangements will need to be made (advance at zero interest, and repayment on operation or harvest, for example)

### Planning framework for indigenous peoples

256. The study relating to the Planning Framework for Indigenous Peoples was initiated subsequent to the discovery of indigenous populations (IP) in the district of Ngo in the department of Plateaux during the environmental and social risk consultant’s mission. The objective of the study was: (i) To implement the GCF’s policy on IP, as well as FAO and REDD+ mechanism safeguards in terms of IP; (ii) To identify all settlements with resident IP populations, especially those likely to be affected by the Project; (iii) To collect relevant socioeconomic data; (iv) To raise IP’s awareness about Project activities; and (v) To try to discern their interest in taking part in the Project, identifying what they

see as risks, advantages, disadvantages and opportunities associated with the Project.

257. The study identifies 13 Bantu villages with IP on the tarred roads to the west, north and south of Ngo. For each village, the study identifies the number of household and describes in detail the lifestyle, daily difficulties in relationships between the IP and Bantu, hierarchy, land access, experience with groups and interest in taking part in the Project. For example, with regard to hierarchy, the study notes that in all 13 villages, the village chiefs are Bantu and there are no IP representatives on the village committees. The study reveals that the IP are very interested in taking part in the Project, but notes certain barriers concerning land access in case this will not be negotiated by the Project on their behalf with the Bantu land-owners. The study also notes much economic discrimination against the IP. For example, the latter are paid 50% less than the Bantu for the same field work.
258. The study then identifies the risks, opportunities and measures to be implemented. To this effect, the study notes that the Project has relatively few risks and many opportunities for indigenous peoples. The main risk is that the IP conditions will not improve. The Project presents opportunities to improve both the economic conditions of the IP and respect of their civil rights. In terms of risk mitigation measures, the study recommends that the Project adopt a policy stating that if Bantu land-owners do not offer the same conditions to IP non-land owners that they offer to Bantu non-land owners, the Project will not fund subprojects in the village. The Project should also support and provide finance to secondary school for up to half a dozen IP children per village in order to develop the human resources and expertise required for effective management of agroforestry and forestry producer groups. In order to seize the identified opportunities, the study recommends the following measures: (i) Establishment of partnerships with the Justice Department to support the implementation of Law 05 on indigenous peoples; (ii) Creation of an IP network to facilitate information and communication with the IP on their rights, challenges and progress in respect of their rights, to combat discrimination and exchange information on the strengths and weaknesses of their participation in the project; and (iii) Participatory management of natural resources, with specific emphasis on areas inhabited by IP when drafting fuelwood supply plans for urban centers and compiling development plans.

## **V Options rejected during the project design**

259. During the Project design, various implementation options were studied to address the barriers identified in the Project's theory of change. The main rejected options are presented below, as well as the justification for their exclusion.

**Table 41: Justification for the initially considered but rejected options**

<b>Considered but rejected options</b>	<b>Justification</b>
Sustainable management of the existing eucalyptus plantations bordering Pointe-Noire.	This option was seriously studied, but finally rejected. In fact, the plan was to organize village groups to manage certain existing State plantations, particularly the large dense forest of eucalyptus bordering Pointe-Noire. Such management would have increased the sustainability of fuelwood production in the Pointe-Noire supply basin, which already supplies 50% of the town's fuelwood consumption. However, the MEF has other plans for this dense forest than fuel production and has recently granted logging agreements to two international companies (for the production of wood, shavings, paper, etc.). With these agreements in place, it was difficult to promote community management. Although community management of State plantations is no longer under consideration, the possibility of supporting local charcoal makers who wish to produce charcoal with

	logging scraps, in partnership with the companies logging the forest has not been ruled out.
Promotion of large State or private forest plantations	The creation of large forest plantations to produce fuelwood requires substantial investment capital, only gives long-term returns, and offers a limited number of benefits to local communities. In addition, it requires access to large areas of land. Given these constraints, this option was not deemed relevant in that the Project wishes to stimulate the emergence of the small and medium-size private Congolese sector and also to improve the conditions of local populations. The implementation of these large plantation projects would require either (1) considerable private investment (which is not within the scope of many Congolese stakeholders or (2) major financial and technical investments by the State. In the case of this second option, the country is finding it difficult to promote its many existing plantations to private investors (apart from those in Pointe-Noire, as mentioned above).
Support to climate-resilient agricultural initiatives	When the Concept Note was drafted, the plan was to support climate-resilient agricultural initiatives. During the feasibility phase, the design team agreed that it was imperative for trees to be incorporated in the systems to be promoted, particularly to ensure a sustainable source of non-forest fuelwood, but also to reap the numerous environmental and social benefits of the systems to be promoted. Also, as the World Bank's PDAC programme (which operates in the area) is only supporting commercial agricultural activities, the project team wished to suggest complementary support, and avoid duplication of efforts.
Project deployment in the north of the country	When the Concept Note was drafted, consideration was given to supporting the initiatives in the north of the country in order to complement the activities planned in the ER-Programme (FCFP) and those planned by the AFD on forest landscapes. Moreover, the north Congo area has importance deforestation in the country. Given the need to downscale the Project (further to comments received from the GCF on the Concept Note), and with the objective of covering an area of the country where degradation is very serious and where the population is growing, the Project chose to concentrate its action on the south of the country.
Support to sustainable forest management and conservation	Support to sustainable forest management and conservation was also considered during the design phase. However, a review of the different sources of funding and ongoing Projects showed that Congo is already receiving a lot of support on these issues, particularly from the APV-FLEGT support programme, as well as from numerous international conservation NGOs (e.g. WCS, WWF).
Support to industrial charcoal making	Support to industrial charcoal making was considered, particularly in the feasibility study conducted by CIRAD. A large charcoal factory could have been promoted near Pointe-Noire in order to support charcoal makers who could have extracted timber from the town's eucalyptus forest. Other smaller factories could also have been considered. These options were ruled out for various reasons. First, this type of model seems more appropriate for large private operators and the GCF project does not aim to subsidize the activities of this category of beneficiaries. Furthermore, the estimated investment costs are very high and would have required a partnership agreement with solid private operators. Few partners seemed appropriate for such an investment.
Support for the promotion and distribution of improved cookstoves and capacity building for the adoption of charcoal making techniques	Initially considered, this option has been finally removed because of the insufficient data available on the willingness to adopt the new technology (Mbote cookstoves) by the households.
Development of fuelwood energy alternatives	Preliminary investigation during the project design suggests a higher opportunity cost for adoption of less common clean energy sources. For example, although natural gas is available as a cooking fuel alternative



	<p>to fuelwood, the purchase cost of bottles of natural gas on the market is very high - although this energy is less costly in terms of BTU/\$ than fuelwood - and mostly inaccessible for poor households due to an unreliable distribution chains. Unlike fuelwood, natural gas is not a renewable energy source and its consumption could cause more emissions of CH<sub>4</sub> and CO<sub>2</sub> than the country's current fuelwood consumption. Other possible alternative energy sources for cooking (hydroelectricity and solar) also come with higher opportunity cost in terms of access, purchase price, maintenance, etc. in comparison to fuelwood. Hydroelectricity would require significant investment in the country's distribution capacity in order to connect households. Accordingly, these options were not considered as realistic alternatives for PREFOREST.</p>
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## VI. PROJECT DESCRIPTION

### A. Justification of the selection of the project site

260. Deforestation and forest degradation is more pronounced in the south of the country, where the majority of the population lives (approximately 3.5 million inhabitants in 2016),<sup>88</sup> and where a large majority of the rural population practices subsistence farming as their main economic activity, and more than 80% of the Congolese population depends on fuelwood as their main source of energy for cooking.<sup>89</sup> Accordingly, the Project will concentrate its action along the National Road No.1, which supplies the three largest cities in the country (Pointe-Noire, Dolisie, Brazzaville), but also northern towns with agricultural, forestry and fuelwood products. This area of intervention covers five departments, namely Kouilou, Niari, Bouenza, Pool and Plateaux. These departments are characterized by the **highest rates of forest degradation in the country for the period 2012-2016**, as well as a **substantial deforestation rate during the period 2000-2012**. The area includes a large gallery forest area, as well as important forest ecosystems, such as Mayombe and the Léfini Reserve. At this time, 13 districts of intervention have been identified within these five departments, notably Madingo-Kayes and Hinda, Mvouti (Kouilou), Louvakou (Niari), Loudima, Kayes and Madingou (Bouenza), Kinkala, Ngoma Tsé-Tsé, Igné, Ngabé (Pool), as well as Ngo and Mpouya (Plateaux).

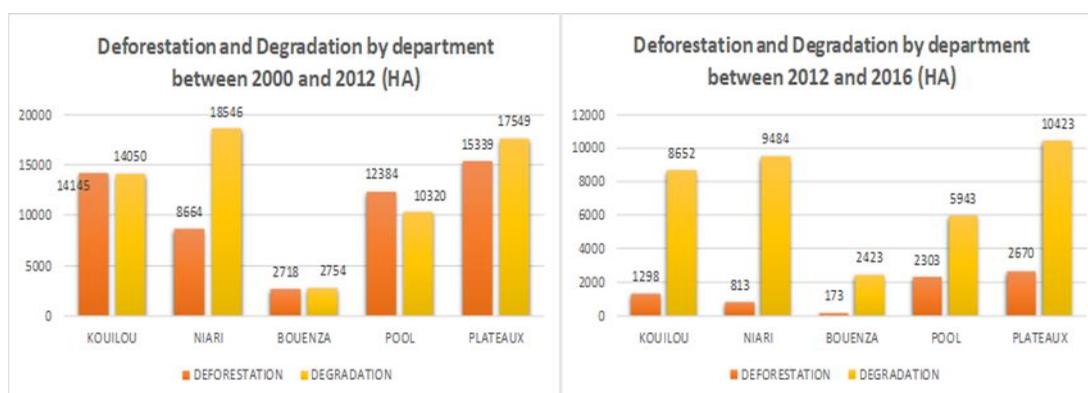
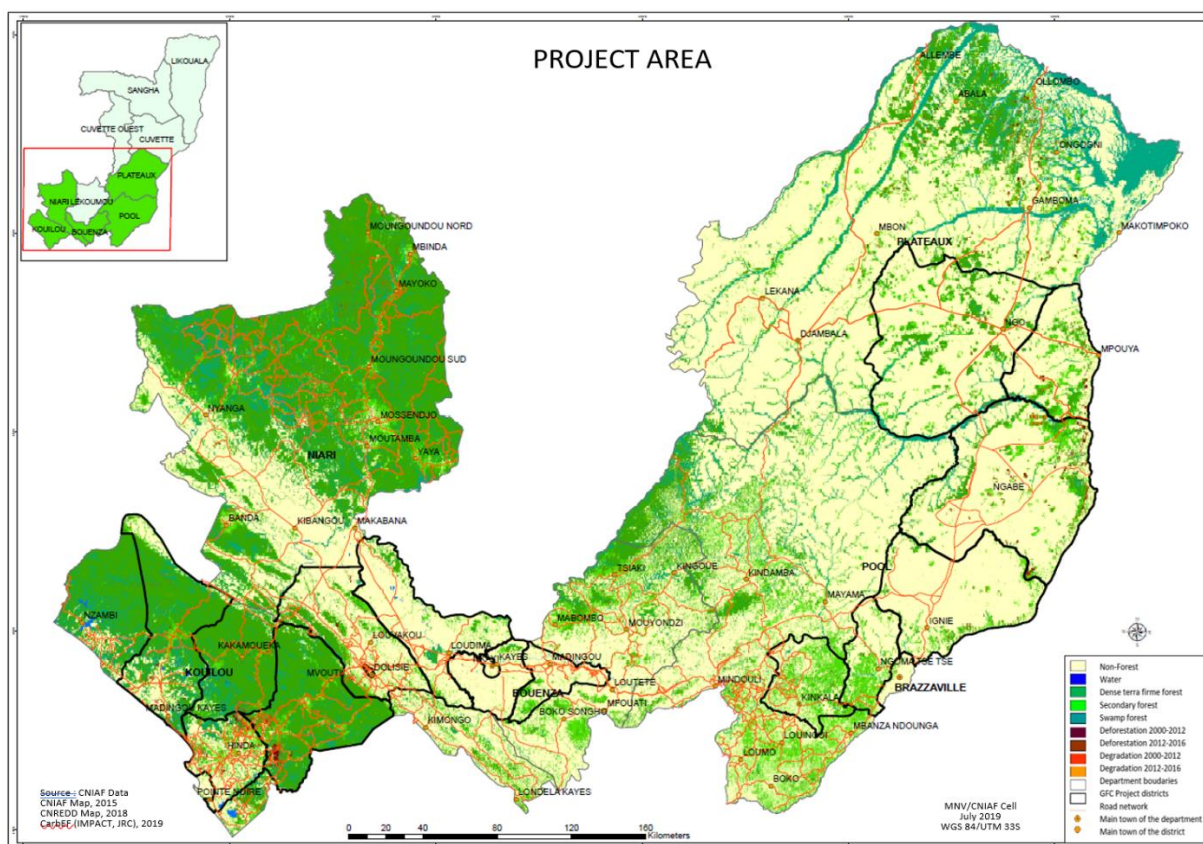


Figure 15: Comparison of deforestation and forest degradation areas (ha) in the five target departments for the periods 2000-2012 and 2012-2016<sup>90</sup>

<sup>88</sup> Idem. Page 26.

<sup>89</sup> Pongui, B.S. and Kenfack, C.E. 2012 Adaptation and mitigation in the Republic of Congo: Stakeholders and political processes. Working Document 99. CIFOR, Bogor, Indonesia

<sup>90</sup> FAO and CNIAP 2019



**Figure 16: Map of Project sites and vegetation cover loss for the period 2000-2016<sup>91</sup>**

261. **Deforestation and forest degradation in the Project area:** Deforestation and forest degradation in the Project area were analyzed for the period 2000-2012 and 2012-2016 within the context of feasibility studies to formulate this proposal. Two trends can be observed in all the targeted intervention areas: The first analysis period (2000-2012) is marked by slightly increased deforestation in the departments north of Brazzaville, where forest cover is mainly represented by gallery forests, secondary forests or shrub savanna, while the second (2012-2016) shows increased forest degradation, particularly in the forest departments in the south of the country.
262. Over the four years, the degraded areas in Niari in the second period exceeded the areas deforested between 2000 and 2012; in the departments of Plateaux, Kouilou and Bouenza, degradation during the second period also represents more than 50% of areas deforested in the first period. The departments most affected by deforestation during the period 2000-2016 are respectively: Plateaux (15,339 ha), Kouilou (14, 145 ha), and Pool (12,384 ha). In the districts north of Brazzaville, the most exposed areas in these departments are close to roads and department capitals, such as: Ngabe, Ngo, Gambona, Ngoma Tse Tse. In terms of degradation, although Pool and Kouilou have significant degraded areas, Niari (18,546 ha) and Plateaux (17,549 ha) are the most affected departments. The most exposed areas are located (1) on the main roads linking Brazzaville to Pointe-Noire, and (2) on the secondary roads connecting the three departments of Niari, Kouilou and Bouenza (particularly to the south of the latter) in the forest areas in the district of Loudima, and plantations around Pointe-Noire (Hinda).
263. **Deforestation and forest degradation in the department of Plateaux:** Two subsets of degraded and deforested areas can be distinguished. These are primarily (1) forest areas (primary and secondary)

<sup>91</sup> FAO and CNIAF 2019

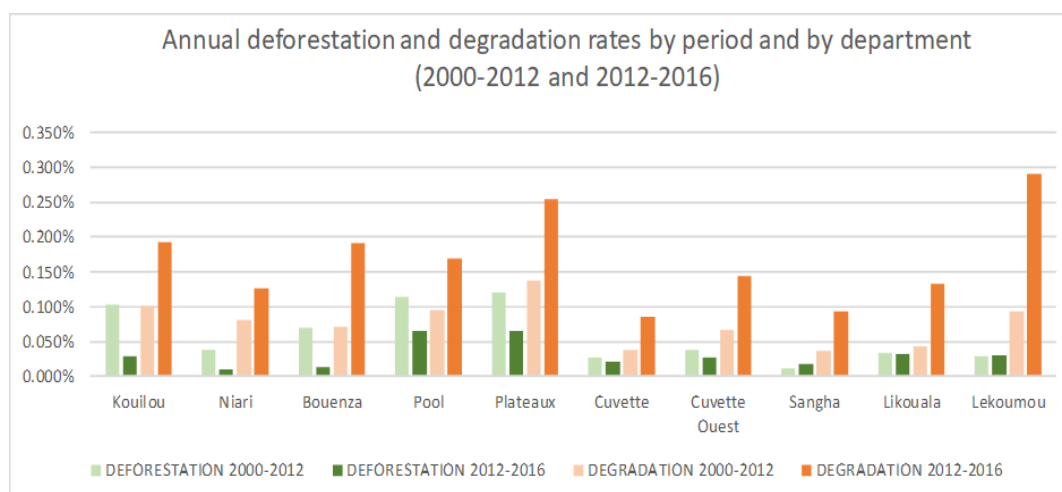
in the Léfini reserves, close to the roads that chiefly lead to the capitals of Ngo and Mpouya; as well as (2) the entire forest area, particularly secondary and marshy forests, to the north of Gambona in the direction of Oyo. Throughout the period, the district of Gambona demonstrated the largest deforested and degraded areas (just behind the district of Ngabe) of all the areas of intervention (13,926 ha). This exposure is accentuated by the intense use of the road network leading to the large towns in the north (e.g. Owando, Oyo) and by the presence of denser forest cover. It is estimated that 94% of land-use change in this department is intended to convert forest to agricultural land, particularly to supply the nearby capitals.

264. **Deforestation and forest degradation in the department of Pool:** The district of Ngabe is an extension of the trends observed in Plateaux: the annual rate of forest degradation during the second period 2012-2016 is the highest out of all districts. The areas of loss are located in a radius of approximately 40 km around the capital, as well as the forest areas bordering the Congo River to the north of the town of Ngabe in the direction of Mpouya. In the three other districts in the department: Ignié, Ngoma Tsé-Tsé and Kinkala, degradation during the period 2012-2016 was modest, inclusively between 200 and 500 ha. However, the department was characterized by significant deforestation during the first decade. Exposed areas are currently mainly secondary forest, with dry shrub vegetation. They are located in patches around the routes leading to Brazzaville. In Pool, nearly 87% of the drivers of deforestation and degradation are attributed to fuelwood, in particular to supply the capital.
265. **Deforestation and forest degradation in the department of Bouenza:** Most losses observed are on the route between Madingou, Kayes and Loudima. This area, hosting isolated patches of forest and shrub savanna, has been subject to significant agricultural development through (1) the former fruit stations of Madingou, which have now become subsistence crops, and (2) sugar production (SARIS Congo) in Nkayi. This area is also crossed by the main road, which leads either south towards Pointe-Noire or northwest in the direction of different forest units (Makabana) in the department of Niari. Forest aisles caused by skid trails can also be seen but are difficult to map by interpreting medium resolution satellite images (Landsat 30 m). In Bouenza, the areas of loss (deforestation and degradation) are still small (between 300 and 800 ha between 2000 and 2016), forest cover is less dense than in other departments, and deforestation caused by these small-size forest aisles is difficult to see.
266. **Deforestation and forest degradation in the department of Niari:** With almost 9,500 ha deforested between 2000 and 2016, Niari is the department with the third largest deforestation area behind Pool and Plateaux; it is also the most affected by degradation (28,030 ha for the period 2000-2016). Mainly forested in the entire northern part, the district of Louvakou borders the department of Kouilou, demarcated by the Mayombe forest; the annual degradation rate over the period 2012-2016 is the highest (0.305%) of the districts in the south of the country and the fourth highest of all studied districts. Isolated forest areas around Louvakou and the secondary route linking Dolisie to the north of the department are amongst the most exposed. Dolisie is the third largest town in the country and although statistics show little degradation due to the small size of the district, it has experienced major deforestation and is an important center for charcoal consumption. Its deforestation halo, estimated at 30 km, progresses gradually southwards towards the Mayombe forest, and particularly towards Mvouti, accessible by the Pointe-Noire road.
267. **Deforestation and forest degradation in the department of Kouilou:** Plantation areas (in non-forest areas) are located in the center of the two districts of Madingo-Kayes and Hinda. The department has also benefited from community agricultural support programmes, which incorporated Louango

and Hinda. The losses in Madingo-Kayes are mainly located in the interior of the district along the northbound road bordering the Conkouati reserve, but where deforestation is already pronounced, and degradation is sustained (nearly 4,000 ha between 2000 and 2016). The district of Hinda is divided by deforestation into two subunits: one in the south around the capital of Loango and one in the northeast/northwest on both sides of the main road crossing Mayombe and joining Mvouti in the district of Louvakou. It was the third most affected by deforestation out of 14 between 2000 and 2016 (almost 4,500 ha).

268. Overall, and during the first period of 2000-2012, annual degradation exceeded deforestation in the districts of Kinkala, Ngabe, NgomaTsetse, Gambona, Mpouya, Ngo and Madingo-Kayes (seven districts out of 14). During the second period of 2012-2016, annual degradation in the districts of Ignie, Kinkala, Ngabe, NgomaTsetse, Gambona, Mpouya, Ngo, Madingo-Kayes, Hinda, Kayes, Loudima, Madingou, Dolisie and Louvakou (8 out of 14) is greater than the deforestation of the first period. As a result, there was more degradation during the last six years than during the entire decade, specifically due to increased fuelwood collection. In the districts of Hinda, Kayes, Loudima and Madingou, degradation during the second period represents more than half of the deforestation of the first period. Degradation has therefore not yet exceeded deforestation, but the trend remains strong. Dolisie seems to be a separate case as it is a very small district, which does not seem to have experienced degradation during the second period. The districts most affected by deforestation are: Ngambe, Gambona, Mpouya, all in the departments north of Brazzaville. Louvakou is also at the top of the list, but this deforestation could more be attributed to logging in Mayombe. The remaining districts are located more in the south, with greater exposure to degradation, except for Ngo, where 2012-2016 degradation is serious (the third most affected district), but which belongs to the cluster of districts to the north of Brazzaville.

269. All selected districts have three points in common: They are within the scope of influence of the three largest towns in the country (Pointe-Noire, Dolisie, Brazzaville [but also the large towns in the north: Oyo, etc.]); They are on the strategic routes linking these locations; The exposed forests were largely marked by deforestation during the first period, and by degradation during the second. Statistics show a net increase in degradation during the second period for more than half of the affected districts and the trend is pronounced for the remaining districts. Population increases and infrastructure development will contribute to reinforce this trend in the years to come.



**Figure 17: Annual deforestation and degradation rates by period (2000-2012 and 2012-2016) and by department<sup>92</sup>**

270. The proposed Project aims to reduce emissions from deforestation and forest degradation caused by slash-and-burn agriculture and the unsustainable production and consumption of fuelwood, by focusing its action on the three large agricultural production and fuelwood supply basins for the Republic of Congo, which host numerous primary and secondary forests of strategic importance for climate change mitigation and protection of biodiversity, and where the majority of the Congolese population lives. Furthermore, the Project aims to reduce pressure on remaining forests by supporting the deployment of sustainable agroforestry systems, which will reduce deforestation and ecosystem degradation, and result in numerous economic and environmental benefits for the local people and their ecosystems, thus reducing their vulnerability and increasing their ability to adapt to climate change. The ultimate beneficiaries of this project are smallholder farmers.
271. PREFOREST proposes a series of interventions structured around three integrated components, whose implementation will drive a real transformational change towards a low-emission development. PREFOREST will build on the successful initiatives carried out by local NGOs and FAO strong experience in the country and in the sector. Co-financing from FAO through resources provided by the Central Africa Forest Initiative (CAFI), International Fund for Agricultural Development (IFAD) and the Ministry of Forest Economy is mobilized to complement the Project activities for wider impact. The Project will mobilize private sector investment in order to sustain and scale up the Project interventions beyond the Project duration. Private actors which have shared with FAO letters of intent to partner with the PREFOREST include among others: Eco-Oil Energy S.A. interested in purchasing greasy crops (e.g. groundnut and soybeans) to produce vegetable oil, COFCAO is interested in purchasing cocoa products from agroforestry plantations and MFIs (MUCODEC, COFINA, CODEC amongst others) interested in facilitating access to credit for the beneficiaries of the project. World Food Programme is interested in purchasing various crops (e.g. beans, cassava, etc.) for school canteens. SCDIE and other off-takers is interested in purchasing cassava, groundnuts, banana/plantains, avocado, orange, and safou amongst other crops. Other off-takers such as Agrideck, Tolona, Hani Transformation company, EPPAVPA, amongst others, are also interested to the project's crops and are even open to other crops as demands exist.
272. PREFOREST project adopts a holistic approach, which is essential to achieve a transformational change at scale and ensure sustainability. Slash-and-burn farming and unsustainable production and consumption of fuelwood are intrinsically linked and cannot be addressed in silos, as fuelwood is collected mostly from clearing more and more land for farming. This situation is rapidly worsening and leading to increase of land clearing as agriculture productivity is very low due obsolete farming practices and fuelwood production/consumption is inefficient (requiring large amounts of wood) due to archaic charcoal production techniques and use of traditional hearth type brazier or three stones for cooking. Additionally, limited access and unsecure land tenure favor short-cycle agricultural practices associated with high GHG emission, while also preventing the plantation of trees. Limited access to finance prevents poor communities to access and ultimately adopt low-emission technologies to shift away from unsustainable practices.
273. In order to achieve its targets of reducing GHG emissions, the Project will support the implementation

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<sup>92</sup> FAO & CNIAF, 2019



of agroforestry and forestry systems. Several environmental and socioeconomic co-benefits will also be engendered by these activities, particularly the creation of alternative income-generating activities and improved social well-being (e.g. reduction of exposure to carbon monoxide) of the most vulnerable populations, in this instance women and unemployed youth.

## **B. Detailed description of PREFOREST activities**

### **Component 1: Land-use and resources planning and strengthening of land access and security rights.**

274. Component 1 supports efforts towards strengthening enabling environment through the strengthening of land access and security rights in the five target departments and developing the basis for the establishment of the agroforestry and forestry systems. These enabling actions will strengthen the effectiveness and success of the activities implemented under components 2 and 3 which will lead to greater and stronger impact. The following outputs are anticipated under Component 1:

#### **Output 1.1. Enabling actions in place**

##### **Activity 1.1.1. Development of participatory mapping**

275. This mapping, to be carried out with the communities, is an essential planning tool to ensure the sustainable natural resources management required to achieve the desired low-emission carbon-resilient development. In an absence of a well-defined land-use plan, digital maps of village land will be drawn up on the basis of participatory mapping. The maps will allow a better knowledge of the landscape mosaic, support resource diagnosis and support a decision making-process (in an inclusive manner) on the desired changes (zoning), which will be recorded in these small scale land use maps. Two maps series (reference level and communities objectives) will be developed by the project for the targeted villages using the same tools for the establishment of the maps themselves as for NFMS-MRV as much as possible. The areas dedicated for the establishment of the agroforestry systems and ANR planned in Component 2 will be included in these maps.

#### **Output 1.2. Land access and security rights of beneficiaries strengthened**

276. It is firmly establishes – including in Congo - that any robust response to deforestation and forest degradation relies heavily on both land tenure access and security of rights.<sup>93</sup> Field visit in the Project areas revealed that access rights to land are based on random and insecure practices.<sup>94</sup> Though the institutional framework on land tenure rights in Congo has evolved significantly over the last decade, access and security rights are still confronted to important challenges, especially for local communities and indigenous people. The current practice of “temporary leases” limited to one subsistence crop cycle does not allow farmers to invest in climate-resilient agroforestry or forestry practices as this prevents the plantation of trees. Under such conditions, where the access and security rights are not guaranteed, it is appropriate to provide means to strengthen land access and

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<sup>93</sup> See for example: Robinson BE, Holland MB, Naughton-Treves L. 2011. Does secure land tenure save forests? A review of the relationship between land tenure and tropical deforestation. CCAFS Working Paper no. 7. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark.

<sup>94</sup> Report of the Technical and economic feasibility study CIRAD. 2019. Page 103.

security rights for these beneficiaries. Three support options are considered by the Project, and the relevance of each will depend on the local context of each site:

277. The first consists of ensuring that beneficiaries have access to land secured by the National Afforestation and Reforestation Programme (*Programme National d’Afforestation et de Reboisement* – PRONAR) or land available on former State farms. To date, nearly 6,000 ha of land have been secured by PRONAR in Bambou Mingali (2,000 ha), Pool and Ombima (4,350 ha) and Plateaux respectively. Blocks of land are in the process of being secured in other departments targeted by the Project. The Bouenza Departmental Council may also contribute to the Project by transferring some available land in former State farms. In light of this, access to land free of charge for beneficiaries wishing to implement low carbon climate-resilient agroforestry or forestry activities is a relevant incentive. In this regard, transfer of user rights will be subject to compliance to a list of specifications, including the obligation for the beneficiaries to sustainably manage the transferred land following a plan approved by PRONAR. The contract duration will vary depending on the production systems, local landowners and the departmental directorates of the ministry in charge of land affairs and could be up to 10 years with possible renewal. On expiration, the contract could be renewed based on compliance with the specifications.
278. The second option refers to strengthening the land rights of land owners in exchange for transfer of a part of land to the Project’s low carbon climate-resilient agroforestry or forestry activities. Law 21-2018 of June 13, 2018, which sets the rules for land acquisition and use, is innovative in that it allows local communities to register land that they are holding under customary rights and to develop this land based on a land-use plan. The Project will support families interested in such collaboration in registering their land and transferring a part of the land for climate-resilient agroforestry and forestry activities. The Project will primarily support departmental directorates of land affairs, particularly in mapping and demarcation of land, and will support land owners over the administrative procedures to obtain land titles. The procedures for transferring land access rights to beneficiaries will be defined with the objective to ensuring equity and, to the greatest extent possible, scheduling payments taking into account the business plan developed for each beneficiary.
279. The last option relates to the system of shared remuneration, a common practice in Congo, which is similar to a lease agreement. This is not an innovation itself, but it is more about revitalizing and updating a practice very common in the past, in the form of long-term “secured” lease. A land owner interested in collaborating with the Project will be asked to commit to make land available to beneficiaries interested in implementing low carbon climate-resilient agroforestry or forestry activities for a period to be defined jointly. The land owner will receive shared remuneration from the participating beneficiary, as it is happening in artisanal fishing or other sectors in Congo. A legal instrument (notarized if possible) will be essential in securing the rights of the different parties. If conditions allow, this model may evolve to small-scale low carbon climate-resilient agroforestry enterprises legally constituted in the form of a company. Depending on the case, the land owner may be a partner or a shareholder. The Project should facilitate the creation of business relations between beneficiaries and land owners by disseminating information on demand and supply, assisting in negotiation of the land owner’s share (in cash or in-kind) and securing a fair and equitable agreement between the parties.

#### **Activity 1.2.1. Identification and selection of potential beneficiaries and land owners partners**

280. Initially a communication campaign and a call of expressions of interest will be conducted in the targeted districts to explain direct land access and security rights modalities under PREFOREST, in



line with the different legislations, and to pre-select potential beneficiaries and landowners interested in strengthening land access and/or security rights for the implementation of PREFOREST interventions. Beneficiaries and landowners will be selected based on locally specific criteria defined and applied by a local multi-stakeholder committee composed of representatives of the communities, district officials and independent observers.<sup>95</sup> Selection criteria for landowners will include: (i) Proof of ownership of the land;<sup>96</sup> (ii) Area of the land and susceptibility to deforestation and forest degradation (or the expansion thereof); and (iii) Willingness to subdue part of the land for an extended period of time for agroforestry and forestry activities. The final decision will be made by the PMU. Pre-selected beneficiaries will be notified formally, and provided with information about the next steps.

#### **Activity 1.2.2. Establishment of formal agreements with beneficiaries and landowners and provision of support to strengthen tenure security rights**

281. The Project will provide legal and administrative support for the development, signature and formalization of agreements (e.g. notarized agreements) between beneficiaries and PRONAR and between beneficiaries and landowners. Transfer of user rights will be subject to compliance to a list of specifications, including the obligation for the beneficiaries to sustainably manage the transferred land following a plan approved by PRONAR. In respect to tenure security rights, the Project will primarily support departmental directorates of land affairs, particularly in the land adjudication process<sup>97</sup>, and will support landowners over the administrative procedures to obtain land titles. The procedures for transferring land access rights to beneficiaries<sup>98</sup> will be defined with the objective to ensuring equity and providing equal opportunity to all stakeholders, especially the most marginalized (e.g. women, indigenous people). In this regard, the Project will seek to secured access and tenure right over a total area of at least 5,000 ha for women and marginalized groups, notably indigenous people.

#### **Component 2: Establishment of agroforestry and forestry systems for climate change mitigation**

282. Component 2 consists of supporting micro and small size initiatives implemented by community stakeholders that aim to stabilize slash-and-burn agriculture (through increased productivity and soil fertility), increase resilience and provide a sustainable fuelwood supply source. This will lead to a significant reduction of the pressure on natural forests, an increase in smallholder farmers' adaptive capacity and reduction of their vulnerability to climate change in the three supply basins targeted by the Project. The activities under the component will be sustainably implemented even after the end of the project thanks to the enabling environment developed under the Component 1. The activities carried out by the beneficiaries of this component will shape the market schemes and financial schemes to be developed and implemented in the component 3.

283. The Project will follow an integrated landscape approach (ILA) framed around multi-functionality of the forest ecosystem and driven by participatory and cross-sectoral processes. In this approach, individual farms will be managed from an integrated landscape perspective to achieve sustainable

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<sup>95</sup> Beneficiaries are the same ones who will establish agroforestry and forestry system under Activity 2.2.4, selected based on the same selection criteria detailed Output 2.2.

<sup>96</sup> Mostly through testimony by traditional leaders and local communities

agriculture production and higher productivity, but also sustainable wood energy production and consumption. This will also contribute to biodiversity conservation and improved and wellbeing and poverty alleviation through increased and diversification of income in every specific location. In order to achieve this landscape approach, the Project will:

- (i) carry out a mapping of the current land uses to identify project sites with consideration of a landscape approach and also the existence of buffer zones for potential expansion of deforestation and forest degradation;
- (ii) ensure participatory land use planning consistent with local land use plan;
- (iii) ensure cooperative dialogue for systematic sharing of information and experience;
- (iv) ensure environmental and social safeguard-based farming.

284. The selection of agroforestry systems have been identified taking into account the exiting diets, and in close consultation with partner institutions with strong expertise in nutrition and healthy diets, including scholars from the Marien Ngouabi University in Brazzaville working on nutrition and diets. The selection was made taking into account [FAO's strategy on nutrition](#). The Letter of Intent from WFP to purchase beneficiaries' agroforestry products for school canteens is based on the nutritional values of the crops selected consistent with its nutrition programme. Component 2 is targeting the following outputs:

#### **Output 2.1. Fast start forestry systems for energy purpose established**

##### **Activity 2.1.1. Provision of technical assistance for the establishment of fast start forestry systems for energy purposes (FAO co-financing through CFI resources)**

285. Through resources provided by CFI and executed by FAO, this output seeks to establish approximately 2,700 ha of forestry systems<sup>99</sup> specifically for energy use. The aim is to provide a readily available sustainable fuelwood supply source from the early stage of project interventions and prior to the development of different resource-use planning instruments in order to avoid tree cutting of natural forests for fuelwood. Indeed, these fast start actions are essential since the production of fuelwood from forestry systems of fast growing species like acacia<sup>100</sup> will take at least 7-8 years. Forestry systems will be carried out in already degraded land. From year 1, the project will identify existing models with the potential to be scaled up by small producers, national and international investors/partners, etc.

286. Potential procured parties have been identified during the formulation phase to support the establishment of part of fast start tree forestry systems for energy purposes. The project will provide the necessary resources for the establishment of the plantations by selected beneficiaries, monitor implementation and document lessons learned to inform subsequent interventions. The beneficiaries may also carry out supporting activities in relation to establishment of agroforestry systems (such, as watering), which will be outside the scope of the activity 2.1.1.

#### **Output 2.2. Low emission, climate-resilient agroforestry and forestry systems are established**

##### **Activity 2.2.1. Awareness raising on climate-resilient agroforestry and forestry systems**

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<sup>99</sup> It will be achieved taken into consideration that fast start forestry systems will be implemented with contributions of beneficiaries through supporting existing initiatives and/or supporting new initiatives that could be implemented rapidly. CFI kept the same assumptions used under PREFOREST to estimate the conservative objective of 2,700 Ha for the PREFOREST proposal. This objective may be updated

<sup>100</sup> Acacia is not considered as invasive in Congo as per national legislation and CABI database. Acacia is already widely valorized by PRONAR, including for previous plantations established by PRONAR in Bambou Mingali area.

287. A communication (information and awareness) strategy targeting smallholder farmers as well as policy makers, will be developed and implemented to provide them with detailed and context-specific information about local opportunities and benefits with respect to agroforestry and forestry systems. The communication strategy will be implemented through context specific and locally relevant communication channels and on a regular basis with a greater emphasis on the direct participation of local communities.

**Activity 2.2.2 Transfer of access and use rights on government land to smallholder farmers/producers (MEF co-financing)**

288. The Project and the Government of Congo will finalize administrative and legal modalities to transfer land from PRONAR and other land available on former State farms to beneficiaries for the implementation of PREFOREST interventions. The Project will support selected beneficiaries in all legal and administrative processes required under the transfer of user rights. Meetings will be organized with relevant government sectoral ministries and agencies to elaborate terms of land transfer and use rights, including duration.

**Activity 2.2.3. Organization of practical training on climate-resilient agroforestry and forestry systems**

289. Selected beneficiaries will be trained on innovative/proven and locally relevant low emission climate-resilient agroforestry and forestry systems using the Farmers Field School methodology.<sup>101</sup>

290. The farmer field school (FFS) approach was developed by FAO and partners nearly 25 years ago in Southeast Asia as an alternative to the prevailing top-down extension method of the Green Revolution, which failed to work in situations where more complex and counter-intuitive problems existed, such as pesticide-induced pest outbreaks.

291. In a typical FFS, a group of 20-25 farmers meets once a week in a local field setting and under the guidance of a trained facilitator. In groups of five they observe and compare two plots over the course of an entire cropping season. One plot follows local conventional methods while the other is used to experiment with what could be considered “best practices”. They experiment with and observe key elements of the agro-ecosystem by measuring plant development, taking samples of insects, weeds and diseased plants, and constructing simple cage experiments or comparing characteristics of different soils. At the end of the weekly meeting they present their findings in a plenary session, followed by discussion and planning for the coming weeks. Alternative practices are not automatically assumed to be superior to conventional practices. It is up to the farmers to decide what works best through his or her testing and observations. What the FFS does is provide a risk-free setting in which to discuss, dissect, modify and experiment with new agricultural management ideas.

292. In this field-based setting, farmers are able to investigate a wide range of topics, such as management of soil fertility and water resources; methods of local varietal selection and issues of seed quality; risks associated with toxic pesticides and implementation of low-toxicity alternatives; development of marketing skills; and diversification of farming systems with new crops for food, fodder and profit.

293. At a national and regional scale, the list of topics continues to expand. The learning-by-doing approach promotes farm-based experimentation, group organization and decision-making; thereby

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<sup>101</sup> The main methodology for technological transfer and scaling is the FAO’s Farmer Field School (FFS) approach. The FFS is an approach based on people-centered learning. It offers space for hands-on group learning to shift towards more sustainable production practices through better understanding of complex agro-ecosystems. Participants learn how to improve skills through observing, analyzing, and trying out new ideas on their own fields, contributing to improved production and livelihoods. Upscaling is achieved through training of trainers approach to FFS. More information available [here](#).

increasing the likelihood that farmers will eventually “own” and adopt improved practices.

294. At the end of the season, a typical FFS group holds a field day to show local politicians, government agriculture workers and other farmers what they are doing. Exchange visits with other FFS are also encouraged. The season-long approach helps build stronger social ties that carry on after the initial FFS. Not all topics can be addressed in one season, and FFS groups often continue with new topics and activities in subsequent seasons. Exploring past trends, current status and future scenarios helps groups to prioritize needs, interests and actions for the future.
295. FFS is usually a time bound activity (generally one agricultural production cycle or a year), involving a group (commonly 20-30) of farmers. It is facilitated by extension staff or – increasingly – by farmer facilitators (FFs). The method emphasizes group observation, discussion, analysis, presentation, and collective decision making and actions. FFS encourage participants to present their findings, experiences and knowledge in front of other FFS members while defending their opinions on findings and decisions made. Such process builds self-confidence, particularly for women, poor household members, or minority group members.
296. Another key outcome, although it is not an explicit FFS objective, is the development of leadership. An FFS must have an appointed group of leaders composed of a Chairperson, Deputy Chairperson, Secretary, and Treasurer. In addition, the FFS membership is divided into four to five sub groups and each sub group has a leader. Through managing the FFS group and sub groups, these appointed leaders as well as the rest of the members build up skills of group management and leadership. Furthermore, FFS encourages cohesiveness among members and develops team work. Although FFS is a time bound project activity, many FFS groups continue after the FFS learning cycle is completed for self motivated study of other subjects, development of collective marketing of agricultural produce, and to establish cooperatives.
297. Through the FFS trainings, PREFOREST smallholder farmers will learn appropriate combinations of ground and tree crops and the ways in which certain tree crops can enrich the soil and improve the environment for other crops.
298. Training will combine off-site teaching and practical application on-site. A training program specific to the needs and constraints of each group will be developed accordingly and implemented in a timely manner. Beneficiaries will be organized into groups based on their interest in specific agroforestry and forestry systems and other factor that may include level of literacy, gender, social proximity, etc. A specific training format will be developed and implemented for training of trainers. Effective attendance in some circumstances may determine and/or condition ultimate level support from PREFOREST.
299. Key elements of the specific training format and methodology described in activity 2.2.3 include the following, which is part of the Farmers Field School approach:
- (i) Practical sessions take place in fields
  - (ii) Training is in groups (i.e. diversity in terms of age, gender, experience, etc.)
  - (iii) Education is hands-on, experiment-based: learning through discovery
  - (iv) Local and outside knowledge are integrated through observation, critical analysis, sharing and debate.
  - (v) Conclusions and implementation are based on the knowledge generated, enhancing decision-making skills.

- (vi) Learning is a continuous process – regular meetings are held at critical crop production stages.

#### **Activity 2.2.4. Provision of technical assistance for the establishment of agroforestry and forestry systems**

300. The project will support beneficiaries in establishing approximately 11,800 ha<sup>102</sup> of micro and small-sized climate-resilient agroforestry and forestry systems (5-50 ha on average)<sup>103</sup> in the 13 target districts. These agroforestry systems will integrate tree species for the production of fuelwood and fruit trees with subsistence crops (e.g. cassava, groundnut, maize, beans, etc.) and market garden crops<sup>104</sup>. Innovative, proven<sup>105</sup> and locally relevant production systems such as the Mampu system will be developed, depending on the type of vegetation cover in the targeted districts (*see section III for details on the Mampu system*).
301. By establishing agroforestry and forestry systems for fuelwood and crop production, the project will directly reduce pressure on natural forests, leading to GHG emission reductions from slash-and-burn agriculture and fuelwood production and an increase in carbon stocks. The agro-forestry systems established will also increase resilience of smallholder farmers and contribute to generating climate change adaptation co-benefits.
302. The agroforestry models have been identified through the following criteria:
- i) crops locally used and that are part of the current diet;
  - ii) crops and trees adapted to be produced in the area;
  - iii) resilience to climate-stressors such as generalized temperature and water stress recurrence in order to improve climate-change resilience;
  - iv) market demand;
  - v) capacity to be produced by smallholder farmers.
  - vi) aligned with the environmental and social safeguards for a category B project
303. In the forested areas of Kouilou, Niari, Pool and Bouenza: forestry and agroforestry species will be integrated into the systems with the following combinations: woodfuel trees-cassava-groundnuts-maize; cocoa-plantains-groundnuts; fruit trees-vegetables or annual staple food crops (e.g. groundnut, pigeon pea, cassava, maize); fruit trees-vegetable crops; forest trees-fruit trees; forest trees-bananas.
304. In the savanna areas of Plateaux: crop-tree combinations will be developed through cropping systems under tree cover, improved fallow land with trees, hedges demarcating farms, and the Taungya technique. For example, production systems for cocoa-based agroforestry plantations in savanna areas will essentially consist of cocoa and could include other small species such as guavas, butter fruit, soursop and citrus trees for the low stratum (0-7 meters); fruit trees (butter fruit, avocado, cola) and palm trees for the middle stratum (10-20 meters); and forest trees (kapok, limba, iroko, njansang, ayous) which recycle nutritional elements and provide some shade for the upper stratum (> 20 meters).
305. The agroforestry models introduced will have the following direct climate change mitigation benefits

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<sup>102</sup> In addition to 2,700 ha to be established under CAFI financing.

<sup>103</sup> Micro size system (5-10ha); Small size systems (>10-50ha). Systems between 2-5ha will also be considered.

<sup>104</sup> For more details, please refer to the report of the technical and economic feasibility study. CIRAD 2019.

<sup>105</sup> Some agroforestry and forestry models promoted by this Project are innovative in the Project area in Congo, but proven concept elsewhere (e.g. Mampu system from DRC).

by increasing the productivity and avoiding the expansion of deforestation, as well as adaptation co-benefits:

- a) *Increase carbon sequestration* and improve the land-use through more forest cover;
- b) *Increase soil quality and fertility by nitrogen fixation with use of leguminous plants* e.g. groundnut, pigeon pea, Acacia. Wherever possible organic matter will be added to soil to improve its structure (retention of air, water, nutrients, and to increase soil biodiversity – for nutrient cycling and pest/disease management); On the basis of scientific work and experiences, the establishment of an agroforestry system based on nitrogen fixing trees (*Acacia mangium* and *Acacia auriculiformis*) in order to enrich the soils with nitrogen and organic matter allowing an increase in crop yield and the production of renewable fuel wood. The interest of acacias consists mainly in their strong atmospheric nitrogen fixation capacity which has been quantified in particular in Congo, in the region of Pointe-Noire (60% of the nitrogen present in the biomass of *Acacia mangium* comes from the atmosphere, Tchichelle et al., 2017a). This fixing capacity is expressed in particular in soils initially poor in nitrogen. The cumulative amounts of nitrogen mineralized in the soil (horizon 0-20 cm) under acacia stands reached 340 kilos of nitrogen per hectare 2 years after their planting (Tchichelle et al., 2017b) which is incomparably higher than in a savannah. At the age of 7, the nitrogen in the soil, mainly contained in organic matter (horizon 0-25 cm) and the nitrogen present in acacia residues (thin branches and leaves), represents a quantity of 1,74 tonnes per hectare (Tchichelle et al., 2017b). Depending on the location and the local context, *Cassia siamea* which also have the same environmental and agricultural benefits and which is already valorized at local level could also been used for this agroforestry system. Groundnuts is also part of the very useful crops which could support the improvement of soil quality. The main constraints hampering groundnuts higher yields and quality in Africa are intermittent drought due to erratic rainfall patterns and terminal drought during maturation, but this could be easily managed in Congo as per the quantity of rainfall. Groundnut grows on a short annual plant in the roots of which nitrogen-fixing bacteria can thrive, and this will support the improvement of the quality of the soil in which other crops is going to be planted simultaneously as part of the agroforestry systems. This quality will be valorized in the planned agroforestry systems to be established.
- c) *Introduce adapted crop varieties that are more resilient to droughts and water stress*, especially for cassava, fuelwood production and fruit-trees;
- d) *Introduce the use of trees in order to protect crops* from erratic rains and provide shade;
- e) *Diversify crops within the agroforestry systems*: Knowing that climate change and climate variability is likely to have overall negative impacts on many monoculture food crops, the agroforestry systems targeted by the project will associate many crops within the agroforestry systems. This approach will help to limit at the same time mining of the same profile of nutrients, water from the same depth, build-up of pests and diseases. Agroforestry systems comprise diverse resilient species that have multiple uses, including food, feed and goods for cash. Agroforestry systems also increase resilience of an agricultural production landscape and buffer risks arising from climate change (Nguyen and al., 2013). Under severe climate events, resilient crops will provide products for different objectives. In fact, though trees and perennial crops in home gardens typically contribute a small cash income, they are important food supply sources for home consumption (Gebauer, 2005; Mendez et al., 2001; Wezel and Bender, 2003).
- f) *Using high quality planting material of varieties adapted to local conditions*: The use of high yield but adapted planting material is key during the establishment of the agroforestry systems.

For example, the local cassava variety Boulabipaki, already well known at local level, will be promoted due to its adaptation to the local conditions (climate, soil, etc.) but producers have to be careful on the plantation period as it potentially conditions the yield. In addition, producers will have to cut stems from well-fertilized plants with high yields and vigorous plants that show no symptoms of pests or diseases.

306. *Acacia mangium* and *Acacia auriculiformis* are well known in Congo and widely used by local communities in Bouenza department, as well as *Cassia siamea*. They are **not considered as invasive species in the country as per national legislation and CABI database**.<sup>106</sup> *Acacia* is one of the main fast-growing species widely valorized and planted by PRONAR in Bambou-Mingali and Kinkala areas (in Pools Department), as part of the government contribution to the national reforestation objectives and for the production of fuelwood. The project will support this effort already deployed by the Government, using the same varieties which are already well adapted to local conditions. The adoption of the Mampu system in Congo is driven by this country experience in using *Acacia*, the successful of the Mampu system itself in DRC, and the demonstrated replicability of this agroforestry system in other area with similar conditions.<sup>107</sup>

307. The following agroforestry systems targeted by the project are in line with the above technical aspects and respond to local community's needs, as identified during the development of the project. They could be adjusted during project implementation, depending on the beneficiaries demand.

- ✓ *Acacia* - maize - cassava. This model is also called Mampu, from the name of the village in DRC where it is widely adopted. It consists in a rotation over seven years, whereby each year is planted one additional parcel of *acacia* (*Acacia auriculiformis*), maize and cassava. The second year one additional parcel is planted as in the first year. The parcel that was planted during the first year is not planted again, while *acacia* trees keep growing. At the end of the rotation (in Year 7) the parcel that was planted during the first year is planted again so that a new rotation starts. The outputs of this model are maize (planted and harvested every year), cassava (planted every year and harvested after 15-18 months) and charcoal (produced every year from Year 7).
- ✓ *Acacia* - maize - groundnut. This model is also called Mampu since it is essentially the same as the previous model. The only difference is that maize is substituted by groundnut.
- ✓ Cacao - plantain - groundnut – safou: In this model during the first year plantain and groundnut are planted. The following year cacao seedlings are planted in the same parcel (that is, when plantain plants are big enough to provide shadow to plant seedlings). Cacao trees are mixed with safou (African plum), which provides a high valuable fruit (with a high oil content) widely consumed in Congo in addition to shadow for cocoa trees.
- ✓ Avocado - okra - aubergine. In this model vegetables (okra and aubergine) are planted along with avocado seedlings. Vegetables are replanted each year until the avocado trees overshadow vegetable production. So each year, the number of planting beds for vegetable production is assumed to reduce until Year 6 (which is the last year when vegetables are produced).
- ✓ Orange - maize - groundnut - pigeon pea - cassava. In this model annual crops are planted along with orange seedlings. In this first year groundnut and maize are intercropped and along with orange seedlings. Given the short duration of maize and groundnut production cycles, the two crops are planted twice in the same year (in the project areas there are two rainy seasons per year, one starting in October and one in March-April). In Year 2 pigeon pea (i.e. a leguminous crop

<sup>106</sup> <https://www.cabi.org/isc/datasheet/2157>

<sup>107</sup> Proceas and al., 2017

fixing nitrogen in the soil) is planted once. During the third year cassava is planted. After cassava harvest the parcel is left nine months' fallow. In Year 5 the rotation starts again for a new cycle that is repeated once only, until orange trees overshadow annual crop production.

308. The beneficiaries are low-income smallholder farmers associated in micro and small-sized community-based initiatives.<sup>108</sup> The project will provide equipment, improved seed materials and other agricultural inputs (i.e. organic fertilizers, materials for integrated pest and soil fertility management), and any logistic support for agroforestry and forestry work which will be necessary for clearing, cutting old trees, transport of seedlings, marking, digging, planting, weeding, pruning trees, fertilization, plant protection, harvest, firewood cut amongst others. The smallholder farmers will need to comply with the environmental and social safeguards established in advance<sup>109</sup> and confirmed in agreements signed between the project and the beneficiaries. In alignment with the content of the approved business plans (output 3.1), the project will cover between 50-80% of the investment cost for smallholders' groups or individuals through technical assistance and procurement of different required items (including equipment).<sup>110</sup> For indigenous groups (typically the poorest part of the Congolese population) the project will cover 100% of the investment. The beneficiaries may also carry out supporting activities in relation to establishment of agroforestry systems (such, as watering), which will be outside the scope of the activity 2.2.4. Even though farmers will be able to plant some short-cycle crops before tree cover is established, the period before fuelwood or tree crops can be harvested means that this first investment is essential to ensure the establishment of forestry and agroforestry systems. Financial viability will be secured in the long term but the essential mitigation impact will not be achieved in the absence of this initial project investment. Once farmers are convinced of the results of the systems, it is assumed that sustainability will be ensured without the need for further support.

#### **Activity 2.2.5. Monitoring and evaluation of overall Project interventions**

309. The Project will conduct a performance evaluation. An M&E officer will be contracted to carry out overall monitoring throughout the Project lifetime, and independent evaluators will be contracted for the interim and final project performance evaluation.

#### **Output 2.3. Nurseries are rehabilitated and forest are restored**

310. The Project will support the rehabilitation of nurseries and adjoining infrastructures in Ngondji (Kouilou), Dolisie (Niari), Loudima (Bouenza), and Kintélé (Pool) to scale up seedling and sapling production potential in order to provide a sustainable source of high quality plant materials for the establishment of agroforestry and forestry systems. In parallel, the Project will support the implementation of assisted natural regeneration activities<sup>111</sup> and protection of the main forest ecosystems subject to pressure from the local population in savanna-forest transition areas, and more specifically on community land subject to strong anthropic pressure due to slash-and-burn agriculture and fuelwood production. The target area for the assisted natural generation is 5,000 ha. ANR will be carried out in areas already degraded by slash and burn. Criteria for selecting degraded and project targeted areas include:

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<sup>108</sup> Initiative refers to micro (5-10 ha) and small (>10-50 ha) sizes agroforestry and/or forestry projects carried by beneficiaries as part of PREFOREST interventions.

<sup>109</sup> Which include the commitment to zero-deforestation practices

<sup>110</sup> The project will cover 80% of the investment of individual smallholders who are entitled for land rights from PRONAR and can provide their workforce and the use of their small tools as their contributions, which is going to cover up to 20% of the agroforestry establishment cost. The project will cover 50% of the investment for smallholder groups or smallholder farmers that have clear land ownership of more than 10 ha land and have access to the use of larger equipment. Their workforce and equipment will contribute to the remaining 50%.

<sup>111</sup> Ibi dem



- (i) The level of degradation;
- (ii) The potential for natural regeneration;
- (iii) The potential for community engagement for safeguarding;
- (iv) The location of the areas within the Project boundaries;
- (v) The potential to establish synergy with ongoing and future forest restoration initiatives.

311. This intervention is part of activities anticipated in respect to the implementation of the plans under Output 1.2. The Project will support women's groups and other smallholder farmer for the establishment and/or management of tree nurseries as part of the establishment of agroforestry and forestry systems. Accordingly, selection criteria indicated in Output 2.2. also apply here.

#### **Activity 2.3.1. Rehabilitation of nurseries (MEF co-financing)**

312. Government managed nurseries within SNR (*Service Nationale de Reboisement*) premises will be restored and additional nurseries will be established. A needs assessment will be conducted to identify logistical needs for rehabilitation of existing nurseries (please refer to section F of the feasibility study for more information about the current status of nurseries). Based on the results from the needs assessment, a fast start rehabilitation plan will be developed to cater for the needs identified.

313. The project will also support women's and other smallholder farmer groups to establish and/or manage tree nurseries as part of the establishment of agroforestry and forestry systems.

#### **Activity 2.3.2. Deployment of Assisted Natural Regeneration**

314. Assisted natural regeneration (ANR) is a simple, low-cost restoration method that can effectively enhance the productivity and ecosystem functions of deforested or degraded lands. The method aims to accelerate, rather than replace, natural successional processes by removing or reducing barriers to natural regeneration such as soil degradation, competition with weedy species, and recurring disturbances (e.g. fire, grazing and wood harvesting). ANR encompasses a range of restoration interventions that can help achieve different goals of restoration and related policy objectives.<sup>112</sup>

315. The maintenance of the forest regrowth will allow a substantial saving of time for the regeneration of the forest cover. The growth of stems thus favored (instead of being cut back systematically) will allow young trees to quickly dominate invasive, bushy or herbaceous species. With ANR management, the gain in growth is significant. Peltier et al., (2014) show that, 31 months after the initial burning, the number of woody regrowth stems greater than 2.5 m in height is 638 per hectare in ANR compared to 202 stems per hectare on plots that have not been managed in ANR. Consequently, the faster reconstitution of the forest cover makes it possible to reduce the colonization by herbaceous plants limiting the risk of savannah and to preserve soil fertility. In order to promote and disclose this efficient management method, the farmer must be able to re-exploit the fallow that he has helped to regenerate.

316. The target area for the assisted natural generation is 5,000 ha. Assisted Natural Regeneration (ANR) will be carried out in areas already degraded by slash and burn in order to regenerate the natural forests and contribute to carbon sequestration. Criteria for selecting degraded forest areas include: (i) The level of degradation; (ii) The potential for natural regeneration; (iii) The potential for community engagement for safeguarding; (iv) The location of the areas within the Project boundaries; (v) The potential to create synergies with ongoing and future forest restoration

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<sup>112</sup> For details, see: <http://www.fao.org/forestry/anr/en/>

initiatives. The degraded forest landscape of the western part of Mayombe, as well as forest areas recently converted to agricultural land, have already been pre-identified by PRONAR and FAO for assisted natural regeneration activities. The project will refine the identification of targeted ANR areas, for 5,000 ha, through additional GIS analysis and participatory ground truthing activities. ANR methodological approaches will be defined based on site-specific environmental conditions. A community-based landscape approach<sup>113</sup> will be promoted. Several technical options will be developed, each of which should be based on a combination of different silvicultural treatments, among others gazetted forest areas, fire management, enrichment planting of multiple-use species, thinning, pruning, etc.

## **Output 2.4. Support for the upscaling of climate-resilient agroforestry and forestry models is provided**

### **Activity 2.4.1. Support for the upscaling of climate-resilient agroforestry and forestry models**

317. The project will support the improvement and dissemination of selected agroforestry and forestry production systems through the establishment of demonstration and trial plots. This work will be potentially carried out by the IRF and IRA as procured parties in close collaboration with other relevant institutions, such as Lycée Agricole AMILCAR CABRAL Brazzaville for agroforestry and forestry activities, Institut de formation technique professionnelle de Loudima. Formal partnerships will be established with the objective of advancing actions aimed at developing context-specific and locally relevant agroforestry and forestry systems. The terms of partnerships with each institution will stipulate roles and responsibilities from each party, including monitoring modalities for the effective implementation of the agreements.
318. The project will therefore monitor the production systems implemented by beneficiaries, measure their productivity as well as their efficacy in reducing GHG emissions and creating multiple ecosystem services, and will propose improvements along the way. Site specific model concepts will be developed by the selected research institutions based on existing identified models, then approved by a scientific committee established by the project. Demonstration plot sites will be secured for the implementation of selected concepts and site-specific technologies will be adopted consistent with the methodological approach. Data will be collected, analyzed and successful results broadly disseminated through community-friendly communication channels and eventually published in peer review journals. The local community will be the main beneficiary of the intervention.

## **Component 3: Strengthening agroforestry financing structures, business capacities and value chains**

319. Component 3 aims to support the growth of community-based, low carbon agroforestry and forestry entrepreneurship in Congo by strengthening access to rural credit by beneficiaries and by developing business capacities.
320. The Project will tackle the main barriers to farmers access to micro-financing both from the demand and supply sides. On the demand side, the Project will support the development of market-oriented agroforestry systems through training and mentoring in the development and implementation of business plans. On the supply side, the Project will support the capacity building of MFIs loan officers in climate finance and the development of new credit/service products adapted to the needs of farmers. The Project will also support intermediation between farmers and MFIs for the effective used of new credit/service products.

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<sup>113</sup> Forest areas to be regenerated will not be considered as silos separated from other landscape types. They have to be closely linked to the same landscape and administrative unit.

321. Component 3 aims to realize the following outputs:

**Output 3.1. Beneficiaries of low carbon, climate-resilient agroforestry and forestry systems are supported in developing and implementing robust and bankable business models**

322. The Project will support beneficiaries who implement low-emission agroforestry and forestry systems in developing robust and bankable projects business plans to be then funded by MFIs and private sectors. Support will be available for development of business plans from the beginning of the Project and support will include mentoring and training beneficiaries on financial and accounting aspects, effective management of operations, as well as processing and marketing.

323. Selected beneficiaries will be supported in the development and implementation of business plans. Each beneficiary will be assigned a personal mentor for targeted support for the development and implementation of his/her business plan, and each mentor may support many beneficiaries at the same time (between 5-10 beneficiaries each). Mentor position will require a good familiarity with business development and project management in the agriculture and forestry sectors, as well as some knowledge of the local environment.

324. A business plan will have to detail the description of the business model to be implemented and the means to be mobilized for its implementation. It will therefore detail the contribution of each actor for the achievement of the business plan objective.

325. The Technical and financial support that will be provided to the project smallholder farmers will depend on the content of these business plans and the conditions stated in these documents.

326. A robust business plan will respond to at least the following criteria:

- Responding to smallholders demand, for subsistence and potentially for market purpose (for household additional financial contribution)
- Explicitly mention the contributions of all funders, including smallholder contributions (including in-kind and the quantity of workforce contribution), and all evidence of warranties (including the land rights and the status of land-right securitization).
- Mainstreaming of climate change: adoption of deforestation-free commodities practices, resilient and low emission practices, etc.
- Commitment to engage in non slash/burn agricultural practices
- Accurate and detailed financial information: efficiency of the adopted model, sustainability of the investment, etc.

327. Development of deforestation-free commodities, establishment of sustainable and resilient production, and adoption of low-emission practices are considered as conditions for all project activities. These conditions are all directly and indirectly mainstreaming climate change into project activities.

328. The development of beneficiaries business capacities, and more specifically the development of bankable business plans will be carried out in partnership with IFAD-PAJE. The PREFOREST will establish partnerships with PAJE's service providers tasked with assisting farmers in:

- (i) Developing comprehensive and sustainable business plans;
- (ii) Providing technical advisory service ranging from production to processing, including mechanization; and
- (iii) Financing of approved business plans under a shared cost financing mechanism.

329. In parallel to PREFOREST activities that will mainly take place at the forest frontier and be focused on climate change mitigation, IFAD-PAJE activities will be located primarily in savanna and clearing areas and geared towards strengthening climate change resilience. Accordingly, technical and financial support provided for the development and implementation of business plans under PREFOREST and

IFAD-PAJE will complement and reinforce each other, while also maximizing overall PREFOREST impacts. In particular, IFAD-PAJE will be addressing one of the main constraints to marketing of produce, namely training and leverage of funding for storage and transportation. Direct beneficiaries of all these activities are smallholder farmers, who will benefit from new skills and knowledge in respect of the development and implementation of bankable business plans.

#### **Activity 3.1.1. Development and implementation of business plans in forest areas**

330. The business plans are an essential tool to guarantee sustainability of the interventions and will be used for the identification of the investment necessary for the establishment of the agroforestry systems (output 2.2.) after the initial phase of project support. These business plans will also emphasize the whole products value chain, by linking the producers to markets and by including other costs which could be related to transportation, storage and transformation. They will be used to leverage additional funding from MFIs (output 3.3.) and for the establishment of partnerships with private sector entities (Output 3.4.).
331. The use of Rural Invest – a free FAO software – will be promoted for the development of business plans. Particular emphasis will be placed on building women and youth organizations' capacities with regard to business plan implementation and monitoring.

#### **Activity 3.1.2. Development and implementation of business plans for beneficiaries in savannah areas (IFAD co-financing)**

332. In parallel to the development and implementation of business plans in forested areas, the Project will support the development and implementation of business plans specific to agriculture development in savannah areas under IFAD-PAJE co-financing. These business plans will also emphasize the whole products value chain, by linking the producers to markets and by including other costs which could be related to transportation, storage and transformation. The approach in this regard will be similar to the one in forest areas, the main difference being the type of landscape.

#### **Output 3.2. Capacities of national credit institutions (banks and microfinance institutions) are strengthened to increase credit supply for low carbon, climate-resilient agroforestry and forestry sectors and to support the Project's backed initiatives**

333. The project aims at leveraging resources from microfinance institutions in order to finance part of the business plans. The project will create strategic partnerships with national microcredit institutions in order to increase the national credit supply for the climate-resilient agroforestry and forestry initiatives created by the beneficiaries. Several financial institutions with some interest in leveraging financing for investment in agroforestry and forestry systems promoted by the Project have been identified during the formulation of the Project. Some of these potential financial partners include CAPPED, CODEC, MUCODEC, HOPE Congo, COFINA (see Table 34: Characterization of MFI in the project area).

#### **Activity 3.2.1. Capacity building of national financial institutions on rural finance for agriculture (IFAD co-financing)**

334. With IFAD-PAJE co-financing, the Project will build the capacity of selected MFIs in rural finance for agriculture as per PAJE project approach, including agro-forestry. The approach used by IFAD is the following:
- (i) update MFIs related policies and procedures;
  - (ii) strengthen the management system in order to better secure operations linked to new products developed through an integrated risk management system;

- (iii) appropriate product sheets and analysis tools for new products to be developed;
- (iv) re-specify (and / or refine) agri-food financing in their strategic orientation

335. A methodological guide will be developed on rural finance for agriculture. This guide will be used as a basis of the capacity building to be provided Ministry of Agriculture (MAEP) executing IFAD co-financing. Technical support will be provided to the selected MFIs on a regular basis so as to mainstream rural finance for agriculture development in their operations.

**Activity 3.2.2. Capacity building of national financial institutions on green investment in agroforestry and forestry sectors**

336. A capacity needs assessment will be carried out by the PMU with respect to financial products and services that best fit the needs of beneficiaries and will support capacity building of local MFIs in developing responsible investment criteria specific to the climate-resilient agroforestry and forestry sectors, including for better understanding and management of risks.

337. The project will support the mainstreaming of green investment criteria specific to the climate-resilient agroforestry and forestry sectors into the financial services of the MFI, the improvement of the understanding and management of risks, and build the capacities of loan officers who will work directly with the beneficiaries and support them in developing their business models. Specific attention will be paid to mainstreaming the Project's outputs (e.g. green investment criteria, micro-credit products) into MFI's financial operations for sustainability.

338. Trainings for banks and microfinance institutions will include information on constraints that women face in accessing finance and financial products in order to raise awareness on this issue. There will also be efforts to tailor financial products to women's needs. For example, as indicated, women may be interested in local savings groups and credit unions which are closer to home and accessible – e.g. they may be close to markets or hospitals. Women are interested in financial credit primarily to support their agricultural activities (seeds, etc.). Some of these issues were raised in the consultations, but additional surveys and consultations will be conducted on this topic during inception to further refine the strategy to best fit women's needs.

339. An external evaluation of the MFI trained will be conducted on a regular basis in order to identify gaps and to provide corrective actions about the capacity building approach. The evaluation will specifically look into how the knowledge from the trainings are being integrated into the regular financial operations of the MFI.

**Activity 3.2.3. Development of a national financial inclusion strategy and formalization of MFIs (IFAD co-financing)**

340. The project will support the development of a national financial inclusion strategy with special emphasis on agroforestry and forestry rural financing. The main beneficiaries of this intervention – and of the project – are smallholder farmers who will benefit from new financial products and services, as well as MFIs, whose capacity will be strengthened to widen their portfolios. Particular attention will be given to gender and women's access to financial institutions.

341. Under IFAD-PAJE co-financing, a methodological approach for the development of a national financial inclusion strategy with special emphasis on agroforestry and forestry rural financing will be developed and approved through large consultation. The strategy will then be elaborated based on the approved methodology and the results validated through a national validation workshop. In

parallel, up to 20 MFIs will be selected based on their potential operationally in agriculture and forestry sectors. These MFIs will serve in the future as reference financial institutions with respect to climate finance in general and rural financing for agroforestry and forestry in Congo in particular. An institutional analysis will be conducted on the shortlisted MFIs to identify relevant gaps for formalization. The project will then provide support to fill the gaps identified with a view to completing and following up on this as it will be an important part of ensuring the sustainability of funding of activities contributing to climate change mitigation.

### **Output 3.3. Locally relevant financial instruments are developed to support low carbon climate-resilient agroforestry and forestry initiatives**

342. The Project's sustainability is based inter alia on the stimulation of an affordable supply of credit suitable for the forestry and agricultural sectors, which does not exist at this time in the country. An increased credit supply to support the development of agroforestry and forestry initiatives is considered essential in stimulating expansion of rural Congolese entrepreneurship, mobilizing the capital of micro and small-sized initiatives carried out by smallholder producers and associations, and supporting the development of value chains.
343. The project will partner with national and local MFIs (MUCODEC, CAPPED, CODEC, COFINA, Hope Congo, and FCECM) to develop microcredit and meso-finance products with conditions favourable to the adoption of climate-friendly practices based on predefined investment criteria that builds on environmental and social safeguards also to be elaborated or strengthened with project support (characterization of the MFIs are detailed in the Feasibility Study, Section C). The main beneficiaries of this intervention are smallholder farmers, who will benefit from the new credit lines, and MFIs which will increase their portfolio.

#### **Activity 3.3.1. Identification and development of suitable credit lines for forestry and agricultural sectors**

344. An in-depth diagnostic analysis on potential micro-finance products and services suitable to local conditions will be carried out. Based on the findings of the analysis, targeted support will be provided to selected micro-finance institutions for the development and mainstreaming of new credit lines into their operations. These credit lines could offer credit with low interest rates and with long-term maturity periods, in line with harvest cycles and to facilitate the adoption of best adaptation and mitigation practices along the agroforestry and forestry value chains. In the framework of the project, the option of considering the project technical and financial support as warranties could be considered as this support would provide the guarantee that the beneficiary was already familiar with and therefore capable of carrying out the agroforestry system. The project will monitor and evaluate the suitability of the new credit lines with respect to their accessibility to beneficiaries and initiate corrective actions as needed.

#### **Activity 3.3.2. Development of inclusive financial products and services for agri-food value chain (IFAD co-financing)**

345. Under IFAD co-financing, the project will develop and mainstream inclusive financial products and services for agri-food produced under the agroforestry system into financial institution operations, which include value chains promoted by PREFOREST under component 2. A mapping analysis will be conducted to identify relevant products and services that can be further adapted to the agri-food sector. The project will then work with relevant MFIs to adapt and mainstream the locally relevant and agri-food friendly financial products and services into selected MFI operations, which will include

transportation, storage and transformation of the crops. The performance of new financial products and services will be evaluated in terms of their inclusiveness potential on a regular basis and appropriate actions taken to improve results.

**Activity 3.3.3. Facilitation of interactions between beneficiaries and national financial institutions for the effective use of new financial products and services**

346. The Project will support various interventions<sup>114</sup> aiming at facilitating interactions between MFI and producers adopting climate-friendly practices. The objective of the partnership is to leverage financing for the implementation of robust business plans developed by the beneficiaries. Approximately 900,000 USD are targeted from the micro-finance institutions to complement the necessary cost for the establishment of the small size agroforestry systems. These needs are below the absorption capacity of the MFIs which has been evaluated to around 5M USD from only MUCODEC, COFINA and HOPE, because of the strong support and partnership provided by the project considered by the MFI as warranties of their involvement. More commitment from the other MFIs are expected during the strengthening of the partnership with the MFIs and the development of more adapted financial services/ products expected.

**Output 3.4. Access to market by the beneficiaries is facilitated through the development of purchase agreements and sales platforms**

347. The Project will also link producers to the market by supporting the development and implementation of long-term, fair price purchase agreements between beneficiaries and selected agro-industrial enterprises in Congo, in order to stimulate demand for the climate-resilient agroforestry and forestry products produced with Project support. This will be achieved through the development of partnerships with organizations and enterprises with the potential to create demand among beneficiaries, in a grouped and organized manner. Following the stakeholder consultations and technical assessments undertaken during the formulation of the PREFOREST (see Annex 7), as well as supplementary work carried out in the project area in late 2020 to enrich the analysis, four primary avenues to sell and market crop and commodity products from beneficiaries farms have been identified, namely: (i) company food enterprises; (ii) institutional off takers; (iii) local farmer markets; and (iv) urban wholesalers and retailers through rural middlemen. For each group, names of specific companies/markets, the products in which they deal and their location are given in the feasibility study. Many Letters of Intent including amounts of produce that they would purchase are already secured are provided in the Annex 23 (Support letters from partners).

348. The commodities produced with the technical support of the project will target smallholder farmers' self-consumptions and market. The project scenario developed in the economic and financial analysis shows an increase of the targeted crops as follows:

**Table 42: With project crop production during project implementation**

Tonnes	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Maize	0	401	1,135	1,375	1,778	2,194	2,927	2,402
Cassava	0	0	2,536	5,365	10,730	15,929	17,619	21,680
Charcoal	0	0	0	0	0	0	0	3,656
Cocoa	0	0	0	0	0	0	76	152

<sup>114</sup> Meetings, consultations, raising awareness, sharing information

Groundnut	0	463	1,948	2,299	2,614	2,930	3,972	2,803
Safou	0	0	0	0	0	428	998	1,710
Plantain	0	0	2,565	3,933	4,959	4,959	4,959	2,394
Box <sup>115</sup>	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
Avocado	0	0	0	0	7,650	38,250	68,850	99,450
Orange	0	0	0	0	0	0	7,650	15,300
Aubergine	0	0	24,225	48,450	64,600	72,675	80,750	64,600
Okra	0	0	24,225	48,450	64,600	72,675	80,750	64,600

349. Financial viability of the project depends on the existence of crops demand in national markets. The following actors have been identified for the different crops value chains and letters of intent to purchase PREFOREST crops have been received.

350. Company **food enterprises market**: This market consists of the local food systems represented by supermarkets and local restaurants. Social networks are extremely important for farmers to develop personal connection for direct sales with these actors. However, due to the fragmented nature of the local food value chain, many small-scale farmers may face obstacles to do so. To address this issue, the Project has initiated consultation with a dozen of restaurants (e.g. Hôtel Elonda - Brazzaville; Hôtel Elais - Pointe-Noire; Grand Hôtel de Dolisie - Dolisie) in each of the five departments in the Project area during the formulation process, as well as certain supermarkets. For example, Zando Market in Brazzaville has provided detailed information on its readiness to buy fresh produce from PREFOREST beneficiaries, specifying quantities required per week. Approximately 10% of the beneficiaries' total production will be purchased by company food enterprises.

351. Institutional **off takers market**: This consists of public and private off-takers who will purchase crops and commodities from beneficiaries' farms either for local transformation or to fulfill their food supply service consistent with their mandate. The PREFOREST has secured letters of intent from several institutional off takers. This includes: (i) Eco-Oil Energy S.A. interested in purchasing greasy crops (e.g. groundnut and soybeans) to produce vegetable oil; (ii) COFCOA is interested in purchasing cocoa ((iii) SCDIE, which is in the process of building a cold storage facility, has indicated quantities of fresh produce that it would be interested in buying on an annual basis and (vi) World Food Programme interested in purchasing various crops (e.g. beans, cassava, etc.) for school canteens. 'Diamon Cacao' is another player for cocoa but not present in the PREFOREST project area. Approximately up to 70% of farmers' production will be purchased by institutional off-takers.

352. **Local farmers markets**: There are several local farmers markets in each of the 13 districts (e.g. Marché de Kinkala; Marché de Igné). Some markets are open seasonally, while others are open on weekends or daily. This is a short market circuit used by farmers to sell crops and commodities in order to get money to address pressing household needs (i.e. purchase ingredients for cooking, etc.). This short market circuit is mostly informal and relies to some extent to personal relationship between producers and buyers. The project will encourage producers to maintain and extend such connections.

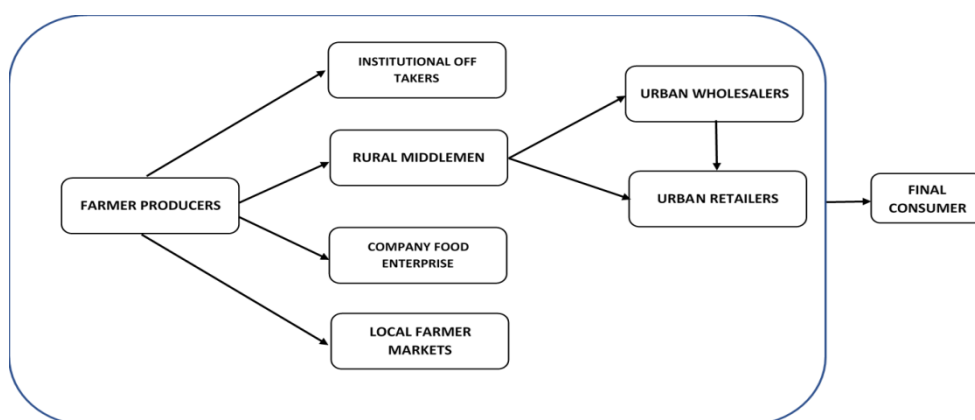
353. **Urban wholesalers and urban retailers markets**: This refers to weekends and/or daily markets located in the big cities (i.e. Brazzaville, Pointe Noire, etc.). Rural middlemen provide intermediation services between the producers and these urban market off takers. The project has identified and

<sup>115</sup> Box equals about 5 kilos



initiated discussions with a dozen of rural middlemen during the formulation phase in each of the five departments. During the implementation, the project will establish a committed group of rural middlemen and will bring them together with producers through its market platform to coordinate supply and demand (i.e. joint sales) and to facilitate negotiation of fair prices. Approximately 20% of farmers total production will service these two specific markets.

354. Additional negotiations have started at formulation stage and will be further explored at implementation stage: (i) BAYO, which is a dairy company based in Brazzaville that has set up supply arrangements with small-scale fruit producers near Brazzaville (Departements of Pool and Bouenza mainly). BAYO is planning to expand its business, (ii) Saris-Congo (<http://www.somdiaa.com/groupe/filiales/saris-congo/>), a commodity company (part of the SOMDIAA group), as well as (iii) CODIPA have potential interest in purchasing maize.
355. The main beneficiaries of this intervention smallholder farmers, who will have a secure access to market and clients who will now rely a reliable source for their products. Beneficiaries also include institutional and non-institutional off-takers, who will benefit from a secured source of low carbon footprint products.



**Figure 18:** Project market scheme

#### **Activity 3.4.1. Facilitation of the establishment of purchase agreements**

356. The commodities produced with the technical support of the project will target smallholder farmers self-consumptions and market. The project scenario developed in the economic and financial analysis shows an increase of the targeted crops as follows:
357. The project will identify potential off-takers – in addition to those already identified and explore opportunities to establish purchase agreements. Four primary avenues available to sell and market crop and commodity products from beneficiaries' farms already exist, namely (i) company food enterprises; (ii) institutional off takers; (iii) local farmer markets; and (iv) urban wholesalers and retailers through rural middlemen. PREFOREST may use the “Forest and Farm Facility” methodology for the valorization of the short market circuits. This institutional off-takers will be more active in commodities which will have to be transformed, such as cocoa, groundnuts. The project groundnuts production could be easily absorbed entirely by Eco-Oil which is looking for the expansion of the oil production in the country and COFCOA is even ready to invest more in cocoa production on top of the project investment for the increase of cocoa production as the cocoa demand is existing (see letter of intent).
358. PREFOREST has identified and initiated discussions with a dozen of rural middlemen during the

formulation phase in each of the five departments for the supply on cassava, maize, plantains, safou, aubergines and different fruits, considering also the market potentiality.<sup>116</sup> During the implementation, the project will bring these middlemen together with producers through its market platform (see below activity) to coordinate supply and demand (i.e. joint sales) and to facilitate negotiation of fair prices. Also, PREFOREST has initiated consultation with a dozen of local restaurants and chiefs in each of the five departments in the project area during the formulation process. To strengthen networking and connection during the implementation, the project will use workshop mingles, farm and restaurant tours, and locally sourced food events to bring producers and restaurants closer together. The production of plantain, cassava, oca, aubergine and different fruits will target more these local markets and more than 90% of the production is expected to be marketed through these channels.

359. The country needs on fuelwood is huge. For the supply of Brazzaville and Nkayi only, 47,500 ha additional plantations would be needed and the project objective could contribute to this need. To be noted that this need has been confirmed during consultation at local level, including with local Government.
360. Based on the contacts already established with off-takers and others to be prospected during project implementation, the demand identified will already cover the yearly production of many crops produced under the agro-forestry systems established by PREFOREST, such as cassava, cocoa, groundnut, avocado and orange. PREFOREST will thus facilitate the negotiation of prices and the signature and formalization of purchase agreements between respective off-takers and beneficiaries.

**Table 43: Market demand of the crops produces by the beneficiaries**

Products	Maximum quantity produced per year by project beneficiaries (tonnes)	Market demand (per year)
Cassava	21,680	Agrideck- 450 tonnes SCDIE- 30,000 tonnes Cluster Union pour une agriculture compétitive- 30,000 tonnes Zando Market-: 5 tonnes Hani Transformation company : 6,300 tonnes
Cocoa	152	EPPAPVA- 150 tonnes COFCAO- no mentioned quantity but ready to invest more on cocoa production, on top of the project surface objective
Groundnut	2,930	Eco-Oil- equivalent of 50,000 ha production needed per year SCDIE- 10 tonnes Cluster Union pour une agriculture compétitive- 15 tonnes
Safou	1,710	Agrideck- 40 tonnes SCDIE 1,500 tonnes Cluster Union pour une agriculture compétitive- 2,000 tonnes
Plantain	4,959	Tolona- 300 tonnes SCDIE- 1,500 tonnes Cluster Union pour une agriculture compétitive- 2,000 tonnes Zando Market- 1 tonne
Avocado	99,450 boxes/ ~450 tonnes	SCDIE- 1500 tonnes Cluster Union pour une agriculture compétitive- 2,000 tonnes
Orange	15,300 boxes/ ~76 tonnes	SCDIE- 200 tonnes

<sup>116</sup> Information on markets are from the following studies: Ministère de l'agriculture et de l'élevage et FAO. 2013. Document synthèse du Bilan diagnostique de la filière manioc en République du Congo. And OTF, 2009. Etude sur la commercialisation de l'agriculture et sur l'investissement dans le secteur privé domestique. Banque Mondiale.

		Cluster Union pour une agriculture compétitive- 250 tonnes
Maize	2,927	CODDIPA needs: 13,000 tonnes per year currently not covered

361. Used for the benefit of local communities, the “Forest and Farm Facility” (FFF) approach aims the strengthening of forest and farm producer organizations representing smallholders, rural women’s groups, local communities and indigenous peoples’ institutions through the establishment of the establishment of short market circuits amongst others. Collectively, forest and farm producers have the potential to achieve the Sustainable Development Goals and to respond to climate change at landscape scales. For this purpose, the FFF approach has developed targeted actions such as a range of capacity-development services, including advocacy, information sharing, access to financing and links to social services.<sup>117</sup> The approach, which valorizes FAO experience on the establishment of short market circuits, is based on the following:

- Access to information and market analysis: facilitating knowledge exchange and market intelligence among producers, who can work towards getting a better price for their products and identifying potential business partners that can help them access new markets. Market information is collected from remote rural areas and crosschecked with market data from across the regions and central level. This system is helping farmers become more aware of market trends and to be better organized in their negotiation with buyers.
- Organization of local forest and farm producers (project beneficiaries) into strong groups: strengthening the horizontal linkages between such producers and their enterprises has tremendous potential for scaling up their influence and creating thriving rural economies for the long term. The lack of such groups has been identified as a major impediment to successful marketing of products such as maize where substantial demand exists for animal feed.
- Negotiating prices: this action will rely on the information gathered on food prices. More efficient results are observed when producers are grouped within associations or cooperatives. PREFOREST beneficiaries will be connected in order to access the right market information and obtain the technical support needed for successful partnership with potential off-takers.

#### **Activity 3.4.2. Support of local market platform and operationalization of purchase agreements with buyers (IFAD co-financing)**

362. The Project will establish market platforms bringing together buyers and producers for the operationalization of purchasing agreements. The Project will support interactions within the platforms by coordinating demand and supply, delivery and other relevant interventions to facilitate the effective implementation of agreements. For instance, PREFOREST, in association with MAEP, will support the organization of community market days, joint sales, and the development of brands (name/logo, etc.) to communicate the quality of products to consumers. The producers could also receive technical support, mainly training, for:

- (i) the improvement of transportation for the reduction of the production waste during transportation, by organizing the planning of the collection along the main roads including drying methods, selection of optimal products, etc.
- (ii) roads storage and

<sup>117</sup> For more information, please see: <http://www.fao.org/forest-farm-facility/en/>

- (iii) potential transformation of their production<sup>118</sup>, including for those produced with GCF proceeds.

363. In addition, IFAD is currently negotiating with the international bank BADEA (*Banque arabe pour le développement économique en Afrique*) for potential future leverage funds aiming the purchase of additional truck to transport products under PREFOREST, and equipment for potential storage and transformation of the products.

### C. Theory of change

364. This Theory of Change (ToC) seeks to address the main driver of deforestation and forest degradation in Congo by transitioning away from slash-and-burn agriculture caused by agriculture expansion and unsustainable fuelwood production in southern Congo, towards low-emission, climate-resilient development pathways.

365. Current slash-and-burn farming caused by agriculture expansion and the consequent unsustainable production of fuelwood cannot be addressed in silos, as fuelwood is collected mostly from clearing land for farming. This situation is compounded by very low agricultural productivity due to obsolete farming practices and inefficient fuelwood production. Additionally, limited access and insecure land tenure favour short-cycle agricultural practices associated with high GHG emission, and discourages long-term investment and planting of trees.

366. PREFOREST proposes a holistic approach to sustainably address driver of deforestation: slash-and-burn agriculture for agriculture expansion and unsustainable production of fuelwood. The holistic approach of the PREFOREST Project is based on the underlying theory that if (i) tenure access and tenure rights are secured; (ii) low-emission climate-resilient agroforestry and forestry systems are adopted; and (iii) access to finance and markets for agroforestry and forestry is enhanced, then deforestation and forest degradation and associated GHG emissions from slash-and-burn agriculture will be reduced and ultimately halted.

367. Strengthening of land access and security rights – The current practice of “temporary leases” limited to one subsistence crop cycle favours short-cycle agricultural practices and impedes the investment required to stabilize slash-and-burn agriculture, increase main crops’ yields, and consolidate the sustainability of the fuelwood sector and therefore reducing the pressure on natural forests. The project proposes three support options to improve access of small farmers to land suitable for agroforestry and to secure tenure rights. Under the project, activities to promote land access and tenure security will provide the foundation for the establishment long of agroforestry/forestry systems.

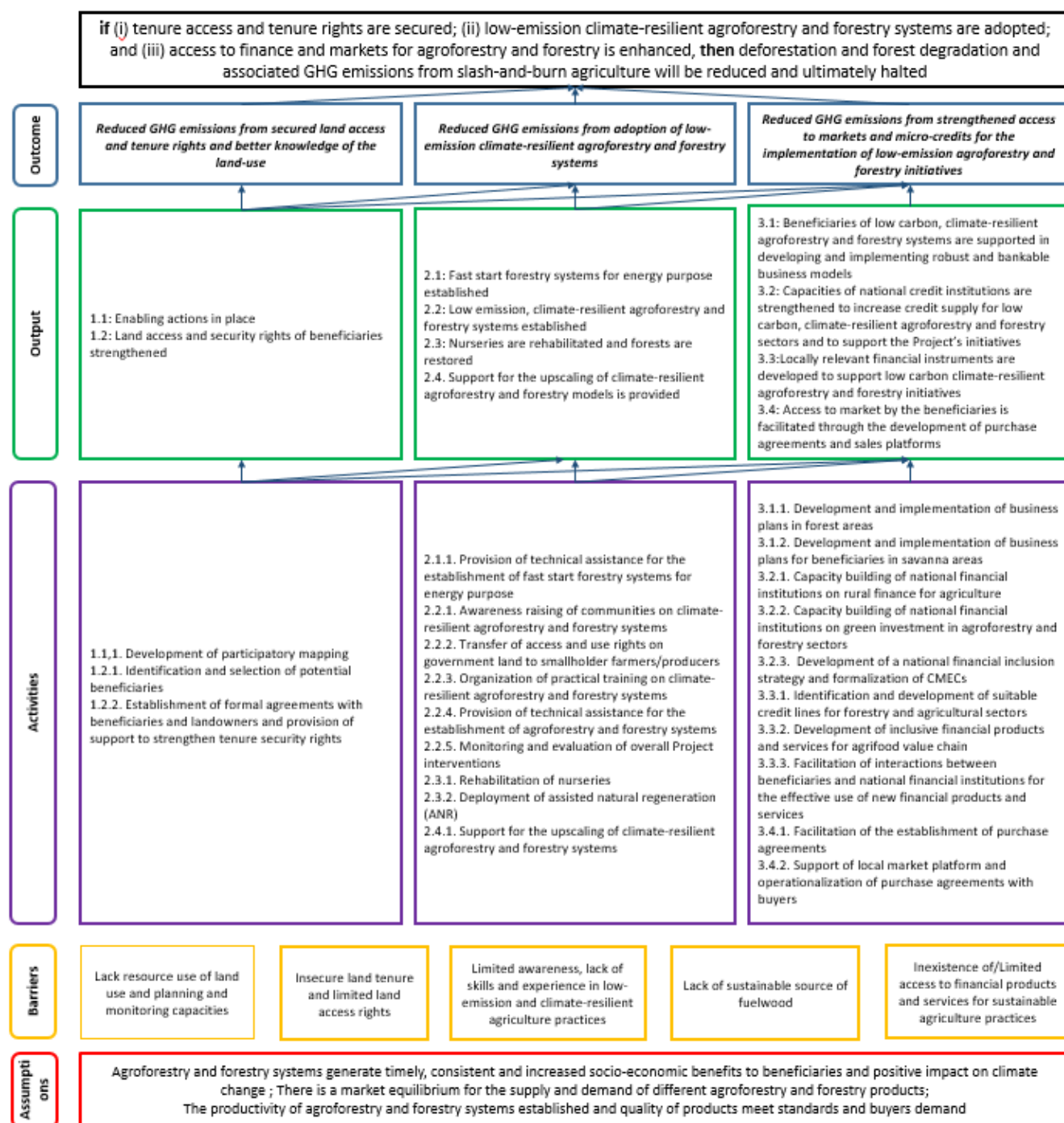
368. Deployment of low-emission climate-resilient agroforestry and forestry systems – The knowledge of climate-resilient agroforestry and forestry practices in the project area is weak. Women farmers interviewed during project formulation claimed that they had never practiced or been trained in agroforestry, though they were interested to learn more with a view to adoption. Small tools such as hoes, axes, machetes, saws, chainsaws, predominate. This lack of modern technologies not only increases the drudgery of agricultural work, but also significantly limits productivity, often resulting in agricultural expansion at the expense of forests. The project would address these technical/knowledge constraints through communication about the opportunities and advantages of agroforestry and fuelwood plantations and significant support for the establishment of such systems.

369. As an immediate measure to reduce forest degradation, existing operations will be built on to provide

fuelwood through plantations of fast-growing species. A major project innovation for the Congo will be the introduction of the mambu system of agroforestry, providing an alternative source of fuelwood and thereby preventing further loss of indigenous forest. Initial plantations of fast-growing species and subsequent adoption of the mambu system will provide alternative sources of firewood. Together with increased productivity of cash crops due to the adoption of improved production techniques and financial support these will lead to a decrease in deforestation and forest degradation and the reduction of associated GHG emissions as well as improvement in the livelihood of poor farmers. While fuelwood plantations provide a relatively quick response to the requirement for fuelwood, agroforestry provides a long-term solution by being a remunerative alternative to slash-and-burn agriculture. Both practices limit the destruction of the natural forest. Natural regeneration will also be introduced on already degraded land from previous slash and burn in order to reestablish the natural forest.

370. Facilitating access to markets, strengthening national agricultural financing structures, and business capacities – Farmers and producers have little information on market opportunities and quality requirements, which constrains their commercial opportunities for the produced crops. These are further limited by issues related to transport costs and packaging requirements for higher value products. The project will strengthen the capacity of smallholder farmers to increase the efficiency of transport, storage and transformation and leverage additional funds from MFIs in order to ensure the high quality of the crops. Then, the project will link producers of agroforestry products supported by the project with markets through the development and implementation of long-term, fair price purchase agreements between beneficiaries and off-takers. Some of these have already been identified (see Letters of Intent from WFP, Eco-Oil and COFAO) and other partnerships with the private sector will be explored and developed during project implementation. Producers will be assisted to take advantage of these.
371. The finance sector in Congo is still evolving with the agriculture sector representing only 6% of the total portfolio in April 2018. The majority of agricultural producers in Congo have difficulty accessing financing from bank or Micro Financial Institutions (MFIs). The majority of credit applications by the farmers do not meet the minimum requirements for solvency and profitability required by local financial institutions. Poor business management, limited land access and insecure tenure rights (MFIs don't finance such farmers) and the informal and embryonic nature of the value chains for the agricultural and fuelwood sectors are major barriers. On the supply side the inadequacy of the financial products offered (i.e. high interest rate of about 4-5% per month and short-term maturity) and lack of technical skills to assess agricultural loans by MFIs limit credit supply to farmers. Small holder farmers mainly resort to traditional savings and credit practices, which are widespread in all departments, notably tontines or rotating savings and credit associations, loans in the form of seed, animal loans to start up small-scale livestock production, loans from family and friends, and money collection services on local markets (mobikissi). This situation makes it difficult to invest in sustainable low emission agro-forestry practices and severely compromises rural entrepreneurship.
372. Project activities to secure small farmers' tenure rights will be fundamental to improving their access to credit. In addition the development of business plans and the creation of strategic partnerships with MFIs with an interest in financing the agroforestry sector will further ease constraints to financing. The partnerships with MFIs will serve to develop micro-credit in line with harvest cycles with low interest rates and longer maturity periods. Increased access to microcredit will encourage the adoption of the best adaptation and mitigation practices, while also building beneficiaries' entrepreneurial skills to sustain their activities.

Figure 19: Theory of change planned in the Project area



#### D. Holistic Approach and Integration of Project Components

373. PREFOREST is designed to reduce GHG emissions from the main driver of deforestation and forest degradation – slash and burn small scale farming for agricultural expansion and fuelwood collection- in South Congo. PREFOREST project adopts a holistic approach, which is essential to achieve a transformational change at scale and ensure sustainability. Slash-and-burn farming for agricultural expansion and fuelwood collection, are intrinsically linked and cannot be addressed in silos, as fuelwood is collected mostly from clearing more and more land for farming. This situation is rapidly worsening and leading to increase of land clearing as demand for crops and fuelwood is increasing and agriculture productivity is very low due obsolete farming practices . Additionally, limited access

and unsecure land tenure favor short-cycle agricultural practices associated with high GHG emission, while also preventing the plantation of trees. Limited access to finance prevents poor communities to access and ultimately adopt low-emission technologies to shift away from unsustainable practices.

374. The GCF investment will be complemented by co-financing from key institutions working on the LULUCF sector in Congo which are CAFI, IFAD and the Ministry of Forest Economy. The model proposed by this project has therefore the potential of being scaled up and replicated in other areas of the Congo Basin by these key players, through a programmatic approach and in a coordinated manner.
375. The project aims at achieving a paradigm shift by shifting the current situation from a high emission and unsustainable business as usual scenario to a long term, sustainable low carbon one. This project represents the first forestry GCF project in the Congo Basin and the first collaboration between the GCF, FAO, CAFI and IFAD and has the potential of having a great impact on forestry and land use in the Congo Basin.

#### Components integration:

376. Land access and tenure security will provide the foundation for establishment of agroforestry/forestry systems (i.e. the possibility to plant trees on farmland) established via component 2.
377. Deployment of low-emission climate-resilient agroforestry and forestry systems (Component 2) – Based on previously secured land access (through land-use planning) and tenure rights, beneficiaries can establish agroforestry and forestry systems on longer rotation cycles. Longer rotation cycles and increased productivity from the adoption of improved production techniques as a result of the project technical (i.e. development of climate-friendly and sustainable business plans, farmer field schools trainings, provision of equipment and agricultural inputs such as improved seed materials organic fertilizers, materials for integrated pest, etc.) and financial support lead to the stabilization of deforestation and forest degradation and the reduction of associated GHG emissions.
378. Facilitating access to markets, strengthening national agricultural financing structures, and business capacities (Component 3) – The sustainability of agroforestry systems established under Component 2 relies among others on their technical and financial viability. To this end, the project will link producers of agroforestry products from agroforestry systems established under Component 2 above with the market through the development and implementation of long-term, fair price purchase agreements between beneficiaries and off-takers for the excess production. Some of the off-takers has been already identified (see Letter of Intent from WFP, Eco-Oil, COFCAO, SCIDE, Agrideck, EPPAVPA and others) and other partnership with private sector and off-takers already identified will be explored and developed during project implementation.
379. The project will also actively participate with stakeholders in dialogues on optimal business models for the sustainable development of agroforestry systems and value chains to influence policies aimed at ultimately changing the behavior of all stakeholders.
380. Based on the assumption that continuous adoption of low-emission climate resilient technologies is also dependent on access to micro-credit suitable to local conditions, the project will establish partnerships with MFI to develop and unleash low interest rates micro-credit and with longer maturity periods, in line with harvest cycles to facilitate the adoption of best adaptation and mitigation practices, while also building beneficiaries entrepreneurial skills to sustain their activities.

#### E. Scaling up approach

381. Several successful acacia-based agroforestry systems have been established in the Pool, Plateaux,

Niari and Bouenza departments, such as, inter alia,:

- 1,500 ha in Pool and Plateaux departments in 2013 with the technical support of PRONAR and SNR
- 2,000 ha established since 2018 in Pool and Plateaux Department, with *Société Des Plantations Forestières Batéké Brazzaville*

382. PREFOREST, through component 2, aims at scaling up the successful models indicated above by providing the first investment for the establishment of 14 500 ha of agroforestry and forestry systems to kick-start the process. The first investment will consist of inputs (seeds, equipment, machinery etc), workforce support technical assistance and capacity development. PREFOREST will also provide the technical knowledge on the establishment of the optimal agroforestry systems necessary for their upscaling by farmers. The systems will be put in place following the mapping carried out under activity 1.1.1.

383. Through components 1 and 3 PREFOREST aims at addressing the barriers for adoption and create an enabling environment for scaling up the systems to support Congo achieve its mitigation targets. Under component 1, the beneficiaries will have long term secured land to establish and further expand their robust and successful agroforestry and forestry systems.

384. Through Component 3, the project will provide support to beneficiaries to increase their income and further scale up their systems, through the following actions:

1) improved access to market:

- existing association will be strengthened and new groups of farmers set up
- organization, capacity and negotiation skills of groups will be strengthened
- groups will be linked to buyers (letters of intent from buyers received and additional buyers will be identified according to the identified market demand)
- groups will be supported in developing business plans and purchase agreements
- Through the business plans, the beneficiaries will be able to expand and scale up their production with the financial support of buyers and MFIs.

This will result in: i) farmers will have higher quality products, will be better linked to buyers and will be able to better negotiate the price; ii) farmers will increase their income; iii) farmers will have the possibility access micro-credit to further invest in their systems

2) improved access to micro credit

- farmers will increase their knowledge on micro-finance
- farmers will be linked to micro-finance institutions

This will result in: farmers are able to expand and scale up their systems

Throughout the components, PREFOTEST will engage national institutions:

385. PREFOREST has been developed in close collaboration with the key national partners involved in agroforestry and forestry for emissions reduction in Congo: PRONAR, and SNR, which are under the Ministry of Forest Economy. These entities will be key partners during project implementation. In compliance with FAO's procedures, these entities will be contracted as procured parties to support the implementation of specific activities in accordance with their comparative advantage, skills and capacities. These entities will be guided by FAO, who, with the support of its staff aims at sharing

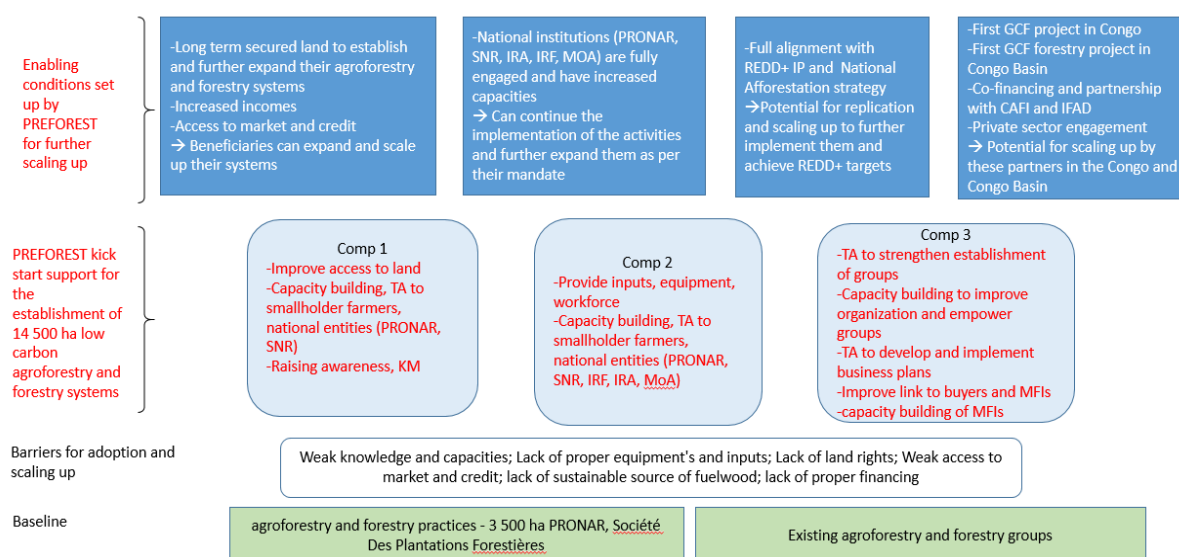


technical expertise and build capacity of these institutions in order to ensure a smooth transition following project completion. This capacity building will enable national entities and in particular PRONAR and SNR to continue and further scale up the interventions of the project through the implementation of PRONAR national afforestation strategy, which targets the afforestation of 1 Million ha under agroforestry and forestry systems.

PREFOREST aims at leveraging resources from key partners:

386. The PREFOREST represents the first GCF forestry project in the Congo Basin and the first collaboration with CAFI. The Congo Basin is the green heart of Africa and has a huge potential for carbon reduction and sequestration. The PREFOREST represents a model that can be scaled up in the context of a larger programme in the Congo Basin with the support of key partners such as CAFI, IFAD and the Ministry of Forest Economy, already involved as co-financiers in PREFOREST. The project is perfectly aligned with the REDD+ Investment Plan priorities and could be replicated and scaled up under the framework of REDD+. In addition, PREFOREST will increase capacity and incentives for the private sector (MFI and buyers) to continue investing in the products produced by PREFOREST beneficiaries and expand their interventions. This will be done by: i) discussing their interest in supporting the PREFOREST interventions at formulation stage and securing 15 letters of intent which confirm MFI's support in developing adapted credit lines and buyers intentions to purchase the products produced by PREFOREST; ii) strengthening the capacities of MFIs, link them to the beneficiaries, and decrease the risk of their investment; iii) ensure quality products and market demand, link the beneficiaries to buyers.

#### PREFOREST SCALING UP APPROACH



## F. Selection Criteria of the beneficiaries

387. The ultimate beneficiaries of the project are smallholder farmers. PREFOREST plans to prioritize support to smallholder farmer groups organized into community associations (formal and informal associations that need support for legalization) as well as individual smallholder farmers if needed. With regards to the business plans (component 3), these will be selected based on their climate

change mitigation impact potential and according to the sustainability of operations once the initial project support is over. The criteria for selection of the business plans includes beneficiaries commitment to engage in non-slash/burn agricultural practices.

388. Beneficiaries are categorized mainly based on land ownership as indicated in Component 1. These categories include:

- (i) beneficiaries wishing to implement climate-resilient agroforestry/forestry activities without formal access to lands (individuals and/or groups), to whom user rights will be transferred on PRONAR land (5,000ha)
- (ii) landowners (individuals and/or groups) interested in leasing part or total of their land through a long-term 'secured lease' for climate-resilient agroforestry/forestry activities in exchange for a shared retribution from beneficiaries activities;
- (iii) and landowners (individuals and/or groups) interested in using part of their land to PREFOREST agroforestry/forestry activities in exchange for support from PREFOREST, and pledge for land registration and obtention of title.

389. Selection criteria will be designed to encourage women's participation in the scheme(s). The  $\geq 35\%$  target will include female-headed households as well as jointly owned land, as long as the wife's joint ownership is clearly acknowledged and stated in writing. Given that land ownership (including joint ownership) is presumed limited (no statistics available), this goal may be challenging. If needed, a contingency requirement may be developed whereby project agreements include the participation of, and signature by women (wives) even if they are not recognized as owners or joint owners. Such a requirement may be a first step to recognizing women's rights in relation to land and resources.

#### **General selection criteria:**

390. The beneficiaries (smallholder farmers) of the Project will be selected by the PMU according to the following criteria:

- Dependence to agriculture, natural resources and forest, and proximity to forest area (potential actors for deforestation and forest degradation);
- Low income level (up to 2 USD/day, as defined by the Ministry of Finance of Congo);
- "Ownership" of degraded fallow and plot with high restoration potential;
- Vulnerability of key livelihoods to climate change impacts;
- Insecure land rights for women, indigenous people and smallholders farmers
- No access / very limited access to public finance; and
- None or limited access to micro-finance institution
- Coherence with development plans (developed under Component 1) and
- Association or group membership.

#### Selection criteria for MFIs

Identification of the potential MFI by PMU and in collaboration with stakeholders will be done through the following criteria:

- Presence of the MFI in the targeted area
- Credits allocated to cooperatives (not only individuals)
- Credits allocated for agriculture, forestry, fishery activities
- Reasonable credit rate (the level of the "reasonable rate" will be defined before applying the criteria)
- Simplified process (with low or without financial guarantee).

## Component 1: Land-use and resources planning and strengthening of land access and security rights

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
<b>Output 1.1. Enabling actions in place</b>					
1.1.1	Development of participatory mapping	GCF	FAO	<ol style="list-style-type: none"> <li>1. All relevant stakeholders in the project area and beyond</li> <li>2. Relevant local sectoral ministries</li> </ol>	<ol style="list-style-type: none"> <li>1. Eligibility is based on respective institutional mandate in respect to local participatory mapping</li> <li>2. Community request for technical support for the development of participatory mapping; Existence of well-organized community-based governance structure or commitment to establish one.</li> </ol>
<b>Output 1.2. Land access and security rights of beneficiaries strengthened</b>					
1.2.1	Identification and selection of potential beneficiaries and land owners partners	GCF	FAO	<ol style="list-style-type: none"> <li>1. Smallholder farmers</li> <li>2. Land owners</li> <li>3. Farmer producer groups/associations</li> </ol>	<ol style="list-style-type: none"> <li>1. For smallholder farmers: Generic selection criteria</li> <li>2. For Land owners: Proof of ownership of the land<sup>119</sup>; Area of the land and susceptibility to deforestation and forest degradation (or the expansion thereof); Willingness to subdue part of the land for an extended period of time for agroforestry and forestry activities.</li> <li>3. For Farmer producer groups/associations: General selection criteria, except for, income threshold and commitment to finance at least 50% of initial investment cost with own fund</li> </ol>
1.2.2	Establishment of formal agreements with beneficiaries and landowners and provision of support to strengthen tenure security rights	GCF	FAO	<ol style="list-style-type: none"> <li>1. Smallholder farmers</li> <li>2. Land owners</li> <li>3. Farmer producer groups/associations</li> </ol>	<ol style="list-style-type: none"> <li>1. For smallholder farmers: General selection criteria</li> <li>2. For Land owners: Proof of ownership of the land<sup>120</sup>; Area of the land and susceptibility to deforestation and forest degradation (or the expansion thereof); Commitment to subdue part of the land for an extended period of time for agroforestry and forestry activities.</li> <li>3. For Farmer producer groups/associations: General selection criteria, except for income threshold and commitment to finance at least 50% of initial investment cost with own fund</li> </ol>

## Component 2 Establishment of agroforestry and forestry systems for climate change mitigation

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
<b>Output 2.1. Fast start forestry systems for energy purpose established</b>					

<sup>119</sup> Mostly through testimony by traditional leaders and local communities

<sup>120</sup> Mostly through testimony by traditional leaders and local communities

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
2.1.1	Provision of technical assistance for the establishment of fast start forestry systems for energy purposes	FAO (CAFI)	FAO	1. Smallholder farmers 2. Farmer producer groups	1. General selection criteria and the criteria provided in Table 44 of the Feasibility Study
<b>Output 2.2. Low emission climate-resilient agroforestry and forestry systems established</b>					
2.2.1.	Awareness raising on climate-resilient agroforestry and forestry systems	GCF	FAO	1. All relevant stakeholders in the project area and beyond	1. Eligibility is based on identification of high priority potential beneficiaries; methods will be determined based on suitable communication methodologies
2.2.2	Transfer of access and use rights on government land to smallholder farmers / producers	Host Country	Host Country	1. Smallholder farmers 2. Farmer producer groups/associations	1. For smallholder farmers: General selection criteria 2. For farmer producer groups/associations: General selection criteria, except income threshold and commitment to finance at least 50% of initial investment cost with own fund
2.2.3	Organization of practical training on climate-resilient agroforestry and forestry systems	GCF	FAO	1. Smallholder farmers 2. Farmer producer groups/associations	1. For smallholder farmers: General selection criteria 2. For farmer producer groups/associations: General selection criteria, except income threshold and commitment to finance at least 50% of initial investment cost with own fund
2.2.4	Provision of technical assistance for the establishment of agroforestry and forestry systems	GCF	FAO	1. Smallholder farmers 2. Farmer producer groups	1. For smallholder farmers: General selection criteria 2. For farmer producer groups/associations: General selection criteria, except income threshold and commitment to finance at least 50% of initial investment cost with own fund
2.2.5	Monitoring and evaluation of overall Project interventions	GCF	FAO	FAO	N/A
<b>Output 2.3. Nurseries are rehabilitated and forest are restored</b>					
2.3.1	Rehabilitation of nurseries	Host Country	Host Country	1.Smallholder farmers 2.SNR	For smallholder farmers: General selection criteria For SNR: N/A
2.3.2	Deployment of Assisted	GCF	FAO	1. Smallholder farmers	1. For smallholder farmers: Proximity to land to be restored <sup>121</sup> ; Commitment to

<sup>121</sup> With close link in the same landscape and administrative unit

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
	natural regeneration			2. SNR and PRONAR	take ownership of restoration activities and safeguarding; Existence of well-organized community-based governance structure <sup>122</sup> or commitment to establish one. 2. For SNR and PRONAR: N/A
<b>Output 2.4 Support for the upscaling of climate-resilient agroforestry and forestry models is provided</b>					
2.4.1	Support for the upscaling of climate-resilient agroforestry and forestry models	GCF	FAO	1. IRA and IRF 2. Farmers in general	1. For IRA and IRF: N/A 2. For farmers: Eligibility criteria is based on potential for adoption of new agroforestry and forestry models

### Component 3: Strengthening agroforestry financing structures, business capacities and value chains

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
<b>Output 3.1. Beneficiaries of low carbon, climate-resilient agroforestry and forestry systems are supported in developing and implementing robust and bankable business models</b>					
3.1.1	Development and implementation of business plans in forest areas	GCF	FAO	1. Smallholder farmers 2. Farmer producer groups/associations	The agro-forestry or forestry nature of the potential beneficiaries initiatives (purely agricultural initiatives will not be funded), technical soundness of proposals, financial viability as demonstrated in the business plan, coherence with the plans; Minimal condition will be required like absence of fraud sentences (background check records), absence of debts for producer groups, demonstrated land access right either through land title or through formal agreements with landowners. Specific consideration may be given to women-driven initiatives.
3.1.2	Development and implementation of business plans for beneficiaries in savannah areas	IFAD	Host Country	Same as Activity 3.1.1	As determined in the Needs Assessment
<b>Output 3.2. Capacities of national credit institutions (banks and microfinance institutions) are strengthened to increase credit supply for climate-resilient agroforestry and forestry sectors and to support the Project's backed initiatives</b>					
3.2.1	Capacity building of national financial	IFAD	Host Country	MFI	As determined in the Needs Assessment

<sup>122</sup> Community-based governance structure refers to the traditional and customary-based system of management for communal land area, this includes customary tenure and user rights

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
	institutions on rural finance for agriculture				
3.2.2	Capacity building of national financial institutions on green investment in agroforestry and forestry sectors	GCF	FAO	MFI	Presence of the MFI in the targeted area; Credits allocated to cooperative (not only individuals); Credits allocated for agriculture, forestry, fishery activities; Reasonable credit rate (the level of the “reasonable rate” will be defined before applying the criteria); Simplified process (with low or without financial guarantee).
3.2.3	Development of a national financial inclusion strategy and formalization of MFIs	IFAD	Host Country	MFI and the local population	As determined in the Needs Assessment
<b>Output 3.3. Locally relevant financial instruments are developed to support low carbon climate-resilient agroforestry and forestry initiatives</b>					
3.3.1	Identification and development of suitable credit lines for forestry and agricultural sectors	GCF	FAO	1. MFI 2. Farmers (smallholder and farmer producer groups)	1. For MFI: Same selection criteria as Activity 4.2.2. above 2. Farmers: Eligibility criteria is based on relevance of needs (e.g. amount; period in respect to agroforestry activities/crop cycles, etc.) and responsiveness MFI loan requirements
3.3.2	Development of inclusive financial products and services for agrifood value chain	IFAD	MAEP	MFI	As determined in the Needs Assessment
3.3.3	Facilitation of interactions between beneficiaries and national financial institutions for the effective use of new financial products and services	GCF	FAO	1. MFI 2. Smallholder farmers	1. For MFI: Same selection criteria as Activity 4.2.2 above 2. Smallholder farmers: General selection criteria
<b>Output 3.4. Access to market by the beneficiaries is facilitated through the development of purchase agreements and sales platforms</b>					
3.4.1	Facilitation of the establishment	GCF	FAO	1. Smallholder farmers and farmer producer groups	1. For farmers: General selection criteria

Activity No.	Activity	Financier	Executing Entity	Direct Beneficiaries	Eligibility Criteria (in addition to the general selection criteria)
	of purchase agreements			2. Off-takers	2. For off-takers: Willingness to enter a 'Call option' agreement with beneficiaries;
3.4.2	Support of local market platform and operationalization of purchase agreements with buyers	IFAD	Host Country	1. Smallholder farmers 2. Off-takers	1. For farmers: General selection criteria 2. For off takers: Willingness to enter a 'Call option' agreement with beneficiaries.

**Table 44: Scope of technical assistance to be provided under Activities 2.1.1 and 2.2.4**

Beneficiaries	Share of the TA in the costs of establishment of a tree plantation or forestry/agroforestry system	Criteria	Scope of TA
Smallholder farmer	100%	1. Be a member of indigenous population or minority ethnic group; 2. Have all rights to the land parcel that are required to establish the respective forestry/agroforestry system pursuant to applicable law. 3. Commitment to maintain forestry / agroforestry systems beyond establishment.	Technical advice, backstopping and capacity building on agroforestry and forestry systems.  Equipment, improved seed materials and other agricultural inputs (i.e. organic fertilizers, materials for integrated pest and soil fertility management), and any logistic support. TA will be aligned with the specific needs indicated in the business plans to be developed by beneficiaries.
Smallholder farmer	80%	1. Have all rights to the land parcel that are required to establish the forestry/agroforestry system pursuant to applicable law; 2. Have capacity (workforce and tools) to carry out the remaining 20% of establishing the respective forestry/agroforestry system	Technical advice, backstopping and capacity building on agroforestry and forestry systems.  Equipment, improved seed materials and other agricultural inputs (i.e. organic

		3. Commitment to maintain forestry / agroforestry systems beyond establishment.	fertilizers, materials for integrated pest and soil fertility management), and any logistic support. TA will be aligned with the specific needs indicated in the business plans to be developed by beneficiaries.
Farmer producer group or smallholder farmer	50%	1. Have all rights to the land parcel that are required to establish the forestry/agroforestry system pursuant to applicable law; 2. Own more than 10 ha of land; 3. Possess or be able to access machinery for land clearance; 4. Have capacity (workforce, tools and management skills) to carry out the remaining 50% of establishing the respective forestry/agroforestry system 5. Commitment to maintain forestry / agroforestry systems beyond establishment.	Technical advice, backstopping and capacity building on agroforestry and forestry systems.  Equipment, improved seed materials and other agricultural inputs (i.e. organic fertilizers, materials for integrated pest and soil fertility management), and any logistic support. TA will be aligned with the specific needs indicated in the business plans to be developed by beneficiaries.

## **VII.PROJECT IMPLEMENTATION ARRANGEMENTS**

### **A. Project Governance**

391. Project governance will be handled by two entities that will be mandated to supervise the Project and its technical framework. These are: (1) The Steering Committee (SC) and (2) The Technical Committee (TC). Their roles are described below:

392. **The Project Steering Committee (SC)** will act as a decision-making organ and provide technical and strategic guidance by ensuring that links and appropriate coordination are maintained with relevant programmes/projects of all other United Nations agencies, as well as international environmental agreements, particularly the United Nations Framework Convention on Climate Change (UNFCCC), the Convention on Biological Diversity (CDB) and the United Nations Convention to Combat Desertification (CCD). The SC will be chaired by the government (MEF), with FAO as Vice-Chair, and will be composed of representatives from various government entities who will support implementation, strategic development partners, the GCF focal point and the head of the Project Management Unit (Chief Technical Advisor) as well as civil society representatives. The SC will hold



meetings at least twice a year to supervise the effective implementation of the Project, ensure sound management and propose relevant recommendations. Decisions of the SC will be based on agreement by the majority of members. Final decision of the SC will require consent by FAO.

393. **The Technical Committee (TC)** will ensure the technical soundness of the Project by providing technical advice to the PMU and ensuring coordination of the implementation of the Project with government agencies. The decisions of the TC will be based on agreement by the majority of members. FAO consent will be required for all TC decisions. It will report to the SC on the effective monitoring of procedures, as well as the procurement of products and deliverables essential to the Project. The TC will specifically support the PMU in supervising project activities, and will serve as a communication channel to coordinate the implementation of activities, particularly with government agencies. It will be co-chaired by the government (MEF) and the FAO and will be composed of representatives from government entities who will support implementation. If necessary, representatives of development partners, NGOs, research institutions and civil society will be invited to attend meetings to consolidate the technical soundness of the Project. The TC will meet 4 times a year, once in each quarter.

The composition of these two committees is proposed as follows:

**Table 45: Composition of the Project Steering Committee**

STEERING COMMITTEE (SC)	
Category	Entity
Chair	Ministry of Forest Economy
Vice-Chair	FAO
Secretariat	National Project Coordinator
Members	Office of the Prime Minister
	Ministry of Agriculture, Livestock and Fisheries
	Ministry of Land Affairs and State Property
	Ministry of Scientific Research and Technological Innovation
	Ministry of Energy and Water
	Ministry of Tourism and the Environment
	Chief Technical Advisor
	Green Climate Fund Focal Point
	REDD+ National Coordinator
	PRONAR National Coordinator
	SNR Director
	IFAD-PAJE Focal Point
	CAFI Focal Point
Observers	CACO-REDD
	World Food Programme (WFP)
	Private sector representative
	MFI representative
	Representative of agricultural and forestry producers
	GRET
	ID

**Table 46: Composition of the Project's Technical Committee**

TECHNICAL COMMITTEE (TC)	
Category	Entity
Co-Chair	Ministry of Forest Economy
Co-Chair	FAO

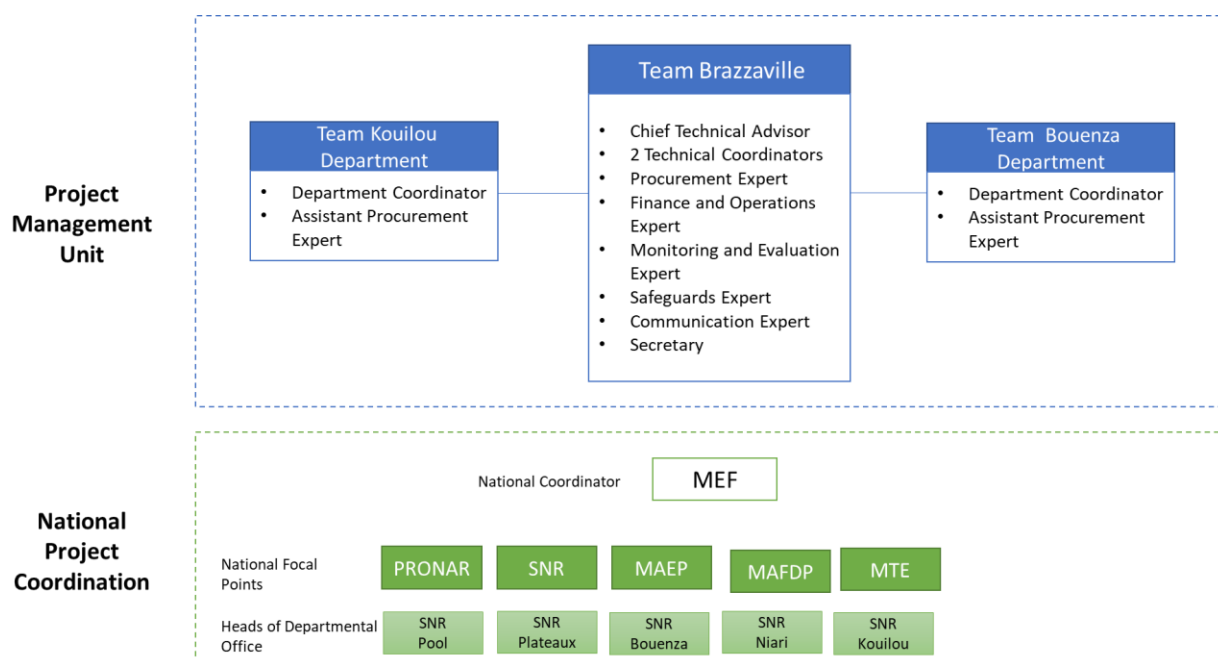
Secretariat	National Project Coordinator
Members	Ministry of Agriculture, Livestock and Fisheries
	Ministry of Land Affairs and State Property
	Ministry of Scientific Research and Technological Innovation
	Ministry of Energy and Hydraulics
	Ministry of Tourism and the Environment
	Ministry of Finance
	Ministry for the Promotion of Women and the Integration of Women in Development
	Chief Technical Advisor
	REDD+ National Coordinator
	PRONAR
	SNR
Observers	IFAD – PAJE Focal Point
	CAFI Focal Point
	National Forestry Research Institute (IRF)
	National Agricultural Research Institute (IRA)
	CACO-REDD
	National Network for Indigenous Populations of the Congo ( <i>Réseau National des Populations Autochtones du Congo</i> - RENAPAC).
	Private sector representative
	MFI representative
	Representative of agricultural and forestry producers
	Climate change focal point
	Adaptation Fund focal point
	GRET
	ID

## **B. Implementation Arrangements**

394. FAO will serve both as the Accrediting Entity (AE) and the Executing Entity (EE) for this Project, with a structure that encourages a high level of appropriation and implementation by the government and supports capacity building objectives. FAO's AE and EE functions will be well separated internally in order to differentiate the Project supervision and the Project coordination functions. As the Executing Entity, FAO will take responsibility for the effective implementation and coordination of all Project components through a dedicated team. FAO will be in charge of ensuring coordination of the planning and implementation of Project activities financed by GCF proceeds. The PREFOREST will be co-financed by the Government of Congo, CAFI and IFAD. CAFI and IFAD, according to their rules and regulations, entirely compatible with FAO's, preselect the EEs based on the EE capacity and comparative advantage in executing the co-financed activities. The Ministry of Agriculture of the Republic of Congo will act as co-Executing Entity of the PREFOREST and will execute activities cofinanced by IFAD (Activity 3.1.2; Activity 3.2.1; Activity 3.2.3; Activity 3.3.2; and Activity 3.4.2). FAO will execute Activity 2.1.1 co-financed by FAO through CAFI resources. For CAFI and IFAD resources, CAFI's and IFAD's governance arrangements and intervention rules will also apply, in alignment with FAO's obligations under the AMA and with FAO regulations, rules and policies.
395. Implementation of GCF funded activities will also be via letters of agreement (in compliance with FAO policies) between FAO and national entities (such as MEF engaged in capacity of a procured party), which will implement specific project activities, in accordance with FAO's procurement rules (Manual 507). FAO will select these partners (procured parties) to perform services against a set of general and technical criteria that would include, inter alia, expertise in the technical field and past successful engagement with FAO. Along the same lines, the framework for collaboration will be developed at the beginning of each annual exercise through the development of complementary/combined annual

workplans and approved budgets (AWPB). The FAO Country Office's relationships with the government, technical and financial partners (TFPs) and civil society organizations may be used in the implementation of this Project to ensure continuity and sustainability of the activities beyond GCF financing. FAO will establish a Project Management Unit (PMU) for the Project within the MEF premises to handle the coordination and implementation of the Project (day-to-day management). One technical expert per region will be based locally in order to ensure presence in the field. These specialists will provide expertise and material related to the Project's themes if necessary (agriculture, forestry, gender, resource mobilization, etc.).

396. The PMU will handle coordination and implementation of the entire Project. The role of the PMU is to ensure that work on the three components is conducted as consistently as possible. The PMU will be responsible for awarding contracts, supervising the activities implemented by the various procured Parties (government, NGOs, private actors) and monitoring and evaluating compliance with safeguards. The PMU will work in close collaboration with various ministries and government agencies, which have a key role to play in supporting implementation of certain Project activities. It will receive technical assistance from FAO and will report to the Technical Committee (TC) and the Steering Committee (SC). All decisions by the PMU will require consent by FAO. The PMU will be headed by an international Chief Technical Advisor (CTA), an FAO staff member, who will have an overview of the Project. The CTA will work together with the National Coordinator for the Project who will be appointed by the MEF thereby ensuring strong ownership of the Project by MEF and a smooth hand over at Project completion. Each government entity (PRONAR, SNR, MAEP, MAFDP, and MTE) will designate a focal point for PREFOREST to monitor aspects of Project implemented by the government and report to the CTA. The PMU will meet every week or more often if necessary, to monitor Project activities. PMU personnel will include recruited experts who will work in close collaboration with the government personnel made available to the Project.
397. Regular dialogue with the CAFI governance bodies (Interministerial Committee, Steering Committee) and IFAD PAJE will be established, facilitated by the PMU. This is to ensure that expected results and objectives, activities and workplans of all co-executing entities take into account contributions from parallel initiatives and are complementary rather than overlapping. FAO has specialists in REDD+ and forest monitoring based in the Headquarters in Rome and in the Regional Office for Africa (RAF), as well as experts on innovation issues related to agroforestry, funding and value chains. These individuals will strengthen the technical pool at the Project's disposal by providing experience, knowledge and expertise from other regions in Africa, particularly West Africa where FAO is currently working with its member states to develop understanding of the climate change mitigation options in forests and land use.
398. The figure below shows the composition of the PMU and the national coordination planned to support its implementation:



**Figure 20: Project supervision structure at national level**

Implementation of the Project will be divided as follows:

**Table 47: Possible procured entities and partners by component**

Funding	Executing entity	Components / Activities	Possible procured parties and partners
GCF	FAO	<p>Component 1: Activity 1.1.1; Activity 1.2.1; Activity 1.2.2;</p> <p>Component 2: Activity 2.2.1; Activity 2.2.3; Activity 2.2.4; Activity 2.2.5; Activity 2.3.2; Activity 2.4.1.</p> <p>Component 3: Activity 3.1.1; Activity 3.2.2; Activity 3.3.1; Activity 3.3.3; Activity 3.4.1.</p>	<p>MAFDP, MEF, MEH,</p> <p>MEF, MAEP, NGOs and private partners to be confirmed.</p> <p>Private partners and international organizations (e.g. MUCODEC, HOPE, CAPPED, COFCOA, Eco-Oil, WFP, etc.).</p>
IFAD	MAEP	Component 3: Activity 3.1.2; Activity 3.2.1; Activity 3.2.3; Activity 3.3.2 and Activity 3.4.2	To be confirmed
FAO (CAFI)	FAO	Component 2: Activity 2.1.1.	GRET, ID

The structure of the Steering Committee is summarized below to clarify the governance and Project implementation arrangements:

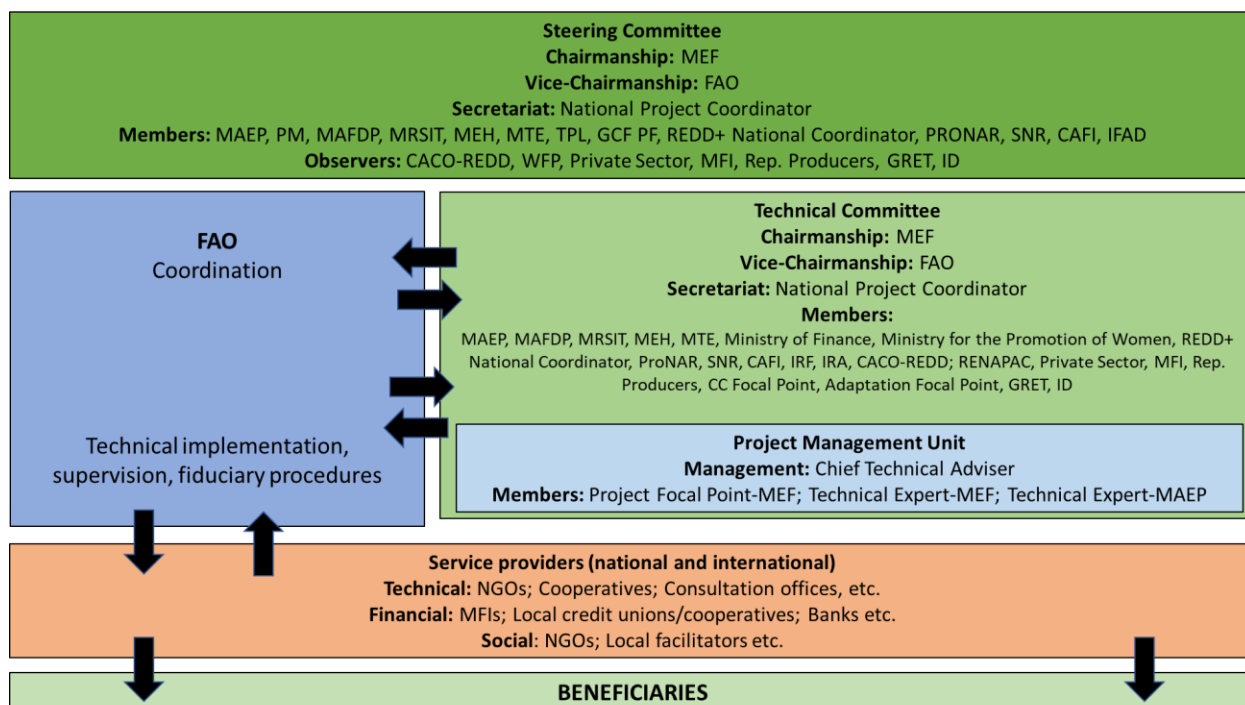


Figure 21: Project Organization Chart

**Table 48: Functions of the main project entities**

	Main function	Project Unit
Project governance and implementation	<ol style="list-style-type: none"> <li>4. Provides political decision-makers and relevant stakeholders with the most advanced information on the project's progress, results and impacts</li> <li>5. Provides political and strategic guidelines</li> <li>6. Approves the Work Plan and Annual Budget (WPAB)</li> <li>7. Ensures good inter-institutional coordination</li> <li>8. Ensures transparency, accountability and participation</li> </ol>	Steering Committee (SC)
	<ul style="list-style-type: none"> <li>• Reviews the Work Plan and Annual Budget (WPAB) prepared with the support of the PMU and makes recommendations</li> <li>• Provides a technical contribution to the implementation of activities, on the initiative screening criteria, and the monitoring and evaluation process, including safeguards</li> <li>• Monitors implementation performance and ensures respect of the terms of reference and the technical competency of each agency</li> <li>• Handles liaison with co-funding entities (technical and financial reports)</li> <li>• Takes part in technical subcommittees for monitoring and evaluation of safeguards</li> </ul>	Technical Committee (TC)
	<ul style="list-style-type: none"> <li>• Manages project funds allocated by the GCF</li> <li>• Ensures implementation of activities relating to the Annual Work Plan (AWP) and supported by the PMU</li> <li>• Provides technical assistance to the Steering Committee and to the Technical Committee Secretariat</li> </ul>	FAO
Implementation	<ul style="list-style-type: none"> <li>• Administers funds exclusively to achieve the project results</li> <li>• Executes payments</li> <li>• Sends technical and financial reports to the GCF</li> </ul>	
	<ul style="list-style-type: none"> <li>• Prepares WPABs for review by the Steering Committee and approval by the FAO</li> <li>• Manages and executes the project on a daily basis</li> <li>• Pursuant to FAO rules and procedures, prepares procurement documents (prescreening lists, terms of reference, draft contracts) for consultants and service providers (national and international, if relevant)</li> <li>• Provides reports to the FAO on execution (physical and financial)</li> </ul>	Project Management Unit (PMU)
	Provides goods and services in line with contracts signed with the FAO	Service providers: Technical: NGOs; Cooperatives; Consultation offices, etc. Financial: MFIs; Local credit unions/ cooperatives; Banks etc. Social: NGOs; Local facilitators etc.

## Governance arrangements for the CFI and PREFOREST collaboration

399. CFI has set an envelope of 7 million USD as co-financing channelled through FAO which will be targeting energy related activities complementary to the ones to be carried out in PREFOREST. For this programme, CFI's governance arrangements and intervention rules will apply. The implementing agency selected to carry out this programme will have the responsibility for operational and fiduciary management, and a Programme Management Unit (PGU) will be established in partnership with the relevant sectoral administration(s) (i.e. Ministries in charge of Forests, Agriculture and Energy, etc.). The Executing Agency (EA) to implement such support is FAO. A technical study will be conducted with FAO for site specific interventions. FAO as executing agency selected to carry out this programme will have the responsibility for operational and fiduciary management, and a Programme Management Unit (PGU) will be established in partnership with the relevant sectoral administration(s) (i.e. Ministries in charge of Forests, Agriculture and Energy, etc.). Oversight of the programme implementation will be ensured by the governance and steering bodies established by decree, under the Prime Minister's authority. The PGU reports on progress towards set objectives and Letter of Intent (LOI) milestones to the Coordination Unit anchored in the Prime Minister's office, who monitors, coordinates and reports on LOI implementation generally. Orientations and decisions are given by an Interministerial Committee, composed of all administrations relevant to LOI implementation, under Prime Minister's presidency.
400. Oversight of the programme implementation will be ensured by the governance and steering bodies established by decree, under the Prime Minister's authority: the PGU reports on progress towards set objectives and Letter of Intent (LOI) milestones to the Coordination Unit anchored in the Prime Minister's office, who monitors, coordinates and reports on LOI implementation generally. Orientations and decisions are given by an Interministerial Committee, composed of all administrations relevant to LOI implementation, under Prime Minister's presidency. A Steering Committee is also headed by the Prime Minister and is the main consultation body. The implementing agencies and programme management units have observer status to this Committee: as such, the FAO will report on implementation progress and participate in all relevant consultations. Reciprocally, a CFI focal point sits on the PREFOREST Steering Committee and Technical Committee (see tables 13 and 14 above).
401. The institutional arrangements for the partnership with CFI explicitly include a space for dialogue, consultation and collaboration with other initiatives, bodies and measures which contribute to the objectives of the LOI. The PREFOREST programme is such a one: regular dialogue with the CFI governance bodies (Interministerial Committee, Steering Committee) will be established, facilitated by the Coordination Unit. This is to ensure that expected results and objectives, activities and workplans take into account contributions from parallel initiatives and are complementary rather than overlapping. The CFI LOI sets a strong requirement for coordination and synergies, and particular care will be given for its realization.

## VIII. PROJECT COSTS AND FINANCING

### **A. Justification of the Funding Request**

402. Congo is going through a very challenging period characterized by persistently weak macroeconomic fundamentals. The Congolese economy is mainly based on oil production, whose revenue represents 90% of GDP and 85% of public revenue. The prolonged drop in oil prices since 2014 has heavily affected its economy and led to a regression in economic growth up-to-date. The country's debt increased substantially over the past eight years to reach 180% of GDP in 2018. Budget deficits decreased significantly by almost 12% of GDP between 2016 and 2017 as a result of reductions in public expenditure, which dropped almost 27% between 2016 and 2017, while revenue only decreased by 8% over the same period. Highly indebted, the country has started negotiations with the International Monetary Fund (IMF) and different donors to restructure its external debt. Since the start of these negotiations, developed countries have generally stopped and/or substantially reduced their development aid, including for climate change and environmental related issues. Negotiations ended in July 2019 with a restructuration of Congo's external debt for an amount of USD 448.6 million over a three-year period, in order to assist Congo to restore its macroeconomic stability, including the sustainability of its debt, and to lay the foundations for sustainable and inclusive growth. This whole situation has reduced the country's ability to finance its climate change priority interventions. Private national investment in climate finance is almost non-existent, particularly because of the state's tight control over the economy, which is essentially focused on oil exploitation and which does not promote growth of the private sector.
403. For Component 1, the GCF's financial support will strengthen the government's current efforts within the context of land tenure security and local land-use mapping. In fact, the low level of land security and the lack of land-use mapping are both major barriers to informed decision-making, as well as planned and sustainable management of natural resources in general, and forest resources in particular. This consequently results in uncontrolled deforestation activities by the local people. The Congolese Government **has insufficient financial resources to effectively address this issue.**
404. For Component 2, the financial analyses of the various production systems under consideration by the Project clearly show that, without an external contribution in the form of a grant to cover the initial investment costs and certain initial operational costs, the adoption of sustainable agroforestry and forestry practices is unprofitable for Congolese producers. Regarding agroforestry systems, the results of the financial analysis show, for example, that both acacia-based agroforestry systems need a grant in order to be viable. Although the NPV is positive, subsidizing of investment costs is also necessary for a positive incremental net benefit of the cocoa-based system during the first year and to reduce the investment costs of orange and avocado-based systems. **The financial grant by the GCF will remove these barriers to investment** on the supply side, allowing producers to adopt production practices that will stabilize slash-and-burn agriculture in the Project areas by supporting the establishment of productive systems with multiple benefits in terms of mitigation and adaptation. Overall, in the Republic of the Congo production costs are among the highest in Africa. This is because the country is an oil economy, which inflates prices and production cost. As an example, the official minimum wage in the Rep of the Congo is 90,000 FCFA (approx. 149 USD), in Cote d'Ivoire is 60,000 FCFA (approx. 99 USD), in Cameroon is 36,270 FCFA (approx. 60 USD), in Gabon (another oil economy) is 80,000 FCFA (approx. 132 USD), in Sudan is 3,000 Sudanese Pounds (approx. 54 USD). The unit cost for the establishment of the agroforestry system has been assessed directly on the ground during the project preparation phase (details of the cost are in the Annex 3). The cost adopted by PREFOREST is very similar to the cost used for the REDD+ Investment plan of the country.



405. For Component 3, the informal and embryonic nature of the value chains for the agricultural and fuelwood sectors is a major **barrier to access to bank credit by local populations**. For example, agricultural production is over 90% controlled by small producers and some local SMEs.<sup>123</sup> As a result, the agricultural sector represented only 6% of the Congolese bank sector portfolio in 2018.<sup>124</sup> The majority of credit applications by the latter do not respect the minimum requirements for solvency and profitability required by local financial institutions. Given the context and Congo's current economic situation, a grant from the GCF is almost the only viable financial mechanism for a profound transformation of the agriculture and fuelwood sectors in order to effectively transition to low-emission climate resilient development. Financial support in the form of grants will strengthen the demand for sustainable agroforestry and forestry products throughout the value chain by putting in place an enabling framework to build the business capacities of the beneficiaries, and establish partnerships with the country's microfinance institutions, as well as purchasing partnerships. This grant will therefore contribute to profound structuration of the value chains of the agricultural and fuelwood sectors, and increased access to credit by small producers, stimulating the emergence of a bankable local private entrepreneurship, which is more focused on green, low-carbon emission investments.

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<sup>123</sup> FAO and Republic of Congo (2013). Country Programming Framework 2013-2016, Brazzaville

<sup>124</sup> Horus Development Finance. 2018. Feasibility study. Funding component. Provisional Report.

## B. Project Funding Mechanisms

Table 49: Funding cost

(a) Requested GCF funding (i + ii + iii + iv + v + vi + vii)		Total amount		Currency			
		28,988,852		million USD (\$)			
GCF financial instrument		Amount	Tenor	Grace period	Pricing		
(i)	Senior loans	Enter amount	Enter years	Enter years	Enter %		
(ii)	Subordinated loans	Enter amount	Enter years	Enter years	Enter %		
(iii)	Equity	Enter amount	Enter years		Enter % equity return		
(iv)	Guarantees	Enter amount					
(v)	Reimbursable grants	Enter amount					
(vi)	Grants	28,988,852					
(vii)	Results-based payments	Enter amount					
(b) Co-financing information		Total amount		Currency			
		17,578,286		million USD (\$)			
Name of institution		Financial instrument	Amount	Currency	Tenor & grace	Pricing	Seniority
MEF <sup>125</sup>		In kind	9,015,286	million USD (\$)	Enter years Enter years	Enter%	Options
IFAD <sup>126</sup>		<u>Senior Loans</u>	1,563,000	million USD (\$)	Enter years Enter years	Enter%	Options
FAO (CAFI)		<u>Grant</u>	7,000,000	million USD (\$)	Enter years Enter years	Enter%	Options
Click here to enter text.		Options	Enter amount	Options	Enter years Enter years	Enter%	Options
(c) Total financing (c) = (a)+(b)		Amount		Currency			
		46,567,138		million USD (\$)			

Table 50: Funding per component

Component	Output	Indicative cost Options	GCF financing		Co-financing		
			Amount Options	Financial Instrument	Amount Options	Financial Instrument	Name of Institutions
Component 1	Output 1.1.	275,000	275,000	Grants			
	Output 1.2.	774,827	774,827	Grants	Enter amount	Choose an item.	Click here to enter text.

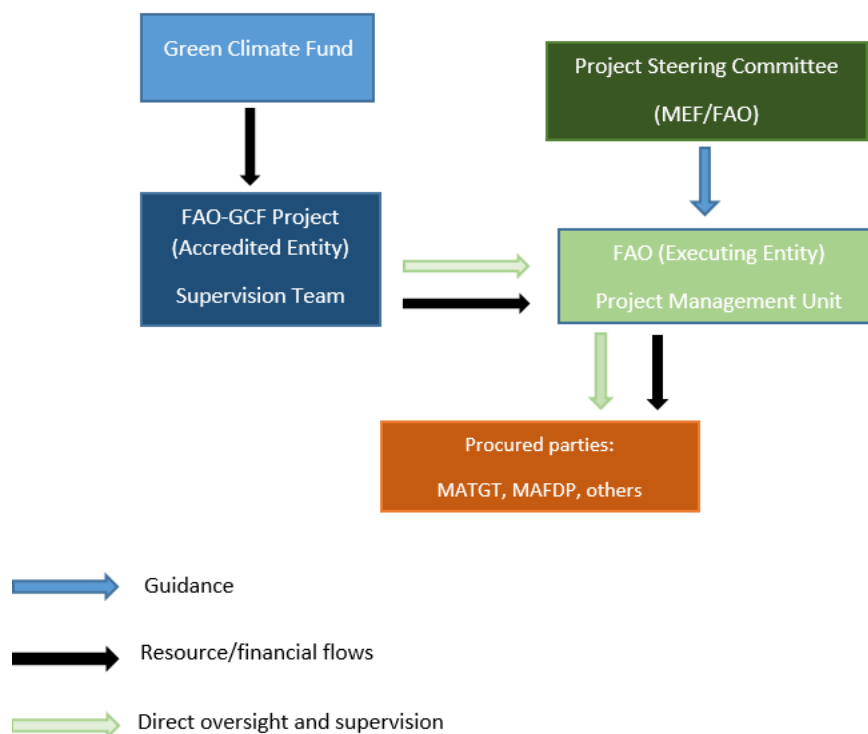
<sup>125</sup> Government in-kind co-financing consists of the costs for the establishment of nurseries and the equivalent of the cost for land-rental provided to the project

<sup>126</sup> IFAD will sign a Financial Agreement with the Government of Congo represented by the Ministry of Finance as recipient of the loan. The funds are then transferred to a Project designated account directly from IFAD through periodic instalments, previous justification of the expenses provided by the PMU (which is under the supervision of the Ministry of Agriculture as Executing Entity) for the execution of the IFAD co-financed activities. This account will be directly accessed by the PMU, and project withdrawal applications are approved by the Ministry of Finance and by IFAD Country Director. As such, the funds will not flow from the Ministry of Finance to the Ministry of Agriculture. The repayments of the IFAD loan will not be flowing from the PAJE project funds but directly from the Ministry of Finance as this is a sovereign debt which the Government of Congo contracts with IFAD (independently of the kind of activities that are executed, which will not generate cash flow to repay a loan).

Component 2	Output 2.1.	6,510,000	Enter amount	Choose an item.	6,510,000	Grants	FAO (CAFI)
	Output 2.2.	31,166,006	23,447,573	Grants	7,718,433	Grants	MEF
	Output 2.3.	2,945,184	1,648,331	Grants	1,296,853	Grants	MEF
	Output 2.4.	231,150	231,150	Grants			
Component 3	Output 3.1	1,670,302	712,302	Grants	958,000	Grants	IFAD
	Output 3.2	380,600	1102,600	Grants	278,000	Grants	IFAD
	Output 3.3.	739,610	668,610	Grants	71,000	Grants	IFAD
	Output 3.4	681,328	425,828	Grants	256,000	Grants	IFAD
PMC		1,293,281	803,281		490,000		FAO (CAFI)
<b>Indicative total cost (USD)</b>		46,567,138	28,988,852		17,578,286		

### C. Project Financial Flows

406. FAO as accredited entity will receive the funds from the GCF at HQ level. The funds will then be transferred to the FAO Representation in Congo, who will hire technical expertise as part of the PMU in charge of executing the project. The funds will be managed by FAO Congo office, who will establish the PMU. FAO in its role of EE will manage the GCF funds, manage financial expenditures against budgets, execute payments, and provide technical assistance. The GCF and FAO will enter into a FAA, under which FAO shall administer the relevant GCF Proceeds to be used for the financing of the project, in accordance with the FAA and AMA. Accountability on the use of financial resources will be facilitated through the review of annual and bi-annual project reports, as well as through audit and monitoring reports.
407. Partners expected to receive GCF proceeds through fund transfer in accordance with FAO's procurement rules are basically organizations involved in the project implementation (MEF, MAEP, etc. as procured entities, see procurement plan for more details). Technical and financial management capacity of implementing partners will be assessed during the identification of the procured entities and before the officialization of the letters of agreement, as stated by the FAO procurement rules - Manual Section 507. Some of the targeted implementing partners have already had a LoA with FAO, meaning that no additional capacity assessment is needed. Funds transfers to these various partners involved in implementation of the project will be in line with FAO procedures, and pursuant to the Accreditation Masters Agreement signed with the GCF. More specifically, FAO will transfer funds to the various implementing partners via Letters of Agreement, which will specify the procedures (activities, deliverables, schedule, payments, monitoring and evaluation) to be followed by these partners on the advice of the MEF. Procurement will be done through a competitive process in line with FAO rules and procedures.



**Figure 22: Financial flows of the GCF proceeds**

408. MAEP will receive funds directly from IFAD to execute the activities of PREFOREST cofinanced by IFAD.<sup>127</sup> A capacity assessment of MAEP has been done during PAJE project development and the following mitigation measures have been implemented during PAJE implementation: (i) providing Technical Assistance at inception phase and during project implementation (capacity building and coaching), (ii) joint monitoring by the Government (Ministry in charge of agriculture and Ministry of Finance) and IFAD; (iii) internal audit of PAJE; (iv) annual external audits and (v) monitoring and control of public finances provided by the authorities within the framework of their prerogatives, and according to the annual planning of their activities. FAO who will execute the activities of PREFOREST funded by CAFI will also directly receive funds from CAFI.

## **IX. MONITORING AND EVALUATION OF THE PROJECT**

409. FAO will serve as the accredited entity for the Project. As such, FAO will be responsible for overall management of the Project, including: i) All Project evaluation aspects; ii) Administrative, financial and technical supervision throughout implementation of the Project; iii) Supervision of effective management of funds to achieve the results and objectives; iv) Quality control of Project monitoring and reporting to the GCF; v) Project closure and evaluation. FAO will assume these responsibilities in line with the detailed provisions listed in the Accreditation Masters Agreement between FAO and the

<sup>127</sup> IFAD will sign a Financial Agreement with the Government of Congo represented by the Ministry of Finance as receipt of the loan. The funds are then transferred to a Project designated account directly from IFAD through periodic installments, previous justification of the expenses provided by the PMU (which is under the supervision of the Ministry of Agriculture as Executing Entity) for the execution of the IFAD co-financed activities. This account will be directly accessed by the PMU, and project withdrawal applications are approved by the Ministry of Finance and by IFAD Country Director. As such, the funds will not flow from the Ministry of Finance to the Ministry of Agriculture. The repayments of the IFAD loan will not be flowing from the PAJE project funds but directly from the Ministry of Finance as this is a sovereign debt which the Government of Congo contracts with IFAD (independently of the kind of activities that are executed, which will not generate cash flow to repay a loan).

GCF. Accountability on the use of financial resources will be facilitated by a review of annual and six-monthly Project reports, as well as auditing and monitoring reports. A Project Performance Monitoring System (PPMS) will be developed based on the target indicators and objectives defined in this logical framework. In particular, the PPMS will enable evaluation of: (i) Progress made in implementing the planned activities; (ii) Progress made in terms of the Project's products and results; and (iii) Potential risks that could have adverse effects on achievement of the Project's objectives. The PPMS will be established approximately 6 months after project start and will be managed by the PMU in collaboration with the implementing entities and in line with the performance monitoring standards for FAO projects.

410. Monitoring and evaluation of the Project activities will be in line with the relevant FAO standards and procedures, and in accordance with the GCF Performance Measurement Framework. As the Accredited Entity and primary Executing Entity, FAO will be responsible for general coordination of the monitoring and evaluation activities of the various Project implementing entities and will report to the GCF in line with the standards and procedures.
411. A Project Performance Monitoring System will be developed based on the target indicators and objectives defined in this logical framework. In particular, the PPMS will enable evaluation of: (i) Progress made in implementing the planned activities; (ii) Progress made in terms of the Project's products and results; and (iii) Potential risks that could have adverse effects on achievement of the Project's objectives. The PPMS will be established approximately 6 months project start and will be managed by the PMU in collaboration with the implementing entities and in line with the performance monitoring standards for FAO projects.
412. **Preliminary review.** FAO will conduct a preliminary review in order to evaluate preparedness for effective implementation of the Project and associated procedures, particularly the establishment of the PMU, opening of an account, signature of the Letters of Agreement with the implementing entities, signature of purchase agreements, etc. This review will serve as a basis for establishment of the PPMS.
413. A monitoring and evaluation expert will be recruited as part of the PMU to supervise monitoring and evaluation activities on a continuous basis, and to compile monthly activity progress reports for the attention of the PTL, the National Coordinator and the Project Lead Technical Officer (PLTO). These monthly reports will be used by the PLTO to conduct biannual monitoring and evaluation missions, which will be used to: (i) Evaluate progress made in implementing activities, implementation procedures and results obtained; (ii) Verify the conformity of the activities with the FAO and GCF environmental and social safeguard measures; (ii) Ensure respect of the terms of with the GCF and related issues; (iii) Monitor implementation of decisions from previous monitoring missions; (iv) Resolve any other problem related to implementation of the project.
414. **Evaluation:** To provide an external viewpoint on the progress of the Project and the achievement of its objectives, the FAO Office of Evaluation (OED) will conduct two project evaluations, a preliminary review (interim) and a final review.
415. **Interim evaluation.** An interim evaluation will be conducted by a multidisciplinary team from FAO. This review will, *inter alia*, provide a complete evaluation of performance in terms of the targets and indicators of the logical framework, as well as the implementation procedures. It will identify weaknesses, if applicable, and recommend any changes needed to strengthen the implementation provisions or amend the Project design. During this review, there will be specific emphasis on the impact of the Project's activities on women and the most disadvantaged.

416. **Final evaluation.** A final project evaluation will be conducted by a multidisciplinary team from FAO approximately 6 months after the end of activities in order to produce the final project report for submission to the GCF. This final review will: (i) Evaluate Project performance in terms of the objectives, targets and indicators (including any revisions from the interim review); (ii) Evaluate the benefits and impacts of the Project for all products; and (iii) Identify incomplete activities and agree on necessary actions to confirm compliance with FAO and GCF requirements.
417. In line with the AMA, the FAO Office of Evaluation (OED) will oversee the interim and final project. These evaluations will be conducted using an issue-based approach and may include assessments using general criteria of relevance, efficacy and sustainability, as applicable. Through operational and strategic recommendations, the interim evaluation will contribute towards improved implementation by identifying any corrective measures needed for the remaining Project period. The final evaluations will assess the relevance of the intervention, its overall performance, as well as the sustainability and scaling-up of the results obtained and the lessons learned. The evaluations will be based on a detailed methodology including the use of different evaluation methods and tools. In addition to the primary data collected by evaluators and the secondary national data available, the interim and final evaluations will be based on monitoring activities and reports prepared by the Project personnel, including surveys to be implemented at baseline, interim and project completion.
418. **Impact assessment:** A project impact assessment will also be conducted during implementation under the supervision of FAO Evaluation Unit. This evaluation will enable FAO to create a complete baseline of the environmental and social conditions in the Project area in order to monitor its impacts. The impact assessment will establish control groups (non-beneficiaries) and monitoring groups (beneficiaries). It will support both the monitoring and evaluation work and will provide useful lessons throughout the Project so as to make any necessary design adjustments.
419. **Reporting:** The PMU will produce for the Steering Committee and, more specifically, FAO: (i) Monthly progress reports in a format compatible with the GCF's Performance Measurement Framework; (ii) Consolidated biennial and annual reports including: a) Progress made per product, measured using performance indicators; b) The main implementation problems and solutions; c) An updated procurement plan; d) An updated plan for the next 12 months; and (iii) A project completion report in the six months following physical completion of the Project activities.
420. **Monitoring of forest carbon stocks.** Monitoring of reductions in forest carbon emissions will be carried out by the CNIAF in close collaboration with the PMU and FAO forest monitoring experts. This will be through the country's NFMS - M&MRV, developed in recent years with support from the UN-REDD programme and the FCPF. Emissions will be monitored based on historic emissions analyzed for the 13 districts during the Project preparatory phase, established over the period 2000-2016. Through the NFMS - M&MRV, every two years Congo will monitor national forest cover by producing maps and evaluating activity data. The Project monitoring and evaluation system, particularly in terms of quantities of carbon reduced/avoided will be anchored to the NFMS - M&MRV. At the beginning of the Project, during development of the baseline (within the context of the impact assessment), the CNIAF and PMU will establish a forest reference emission level (FREL) for the Project area, using updated forest cover loss statistics. On top of the use of the EX-ACT tool, this FREL will be used to monitor reductions in GHG emissions in the Project area.
421. **Gender monitoring.** The implementing entities will be responsible for implementing and monitoring the Gender Action Plan (GAP) with the support of the PMU. The Project Gender Specialist, who will act as an occasional expert to support the PMU, will be responsible for supervising and monitoring

all Project activities related to gender, particularly updating of the GAP and coordinating its implementation by all implementing entities. The Project will work in close collaboration with the Ministry for Women's Empowerment and Integration in Development for the appropriation of Project activities related to gender, monitoring and sustainability.

422. Data disaggregated by gender will be collected whenever relevant and gender-specific and gender-sensitive indicators will be integrated into the PPMS. Data disaggregated by gender will specifically focus on activities related to the specific objectives of the GAP. Reliable data sources for monitoring are available for the initiatives in the retained districts.
423. **Monitoring of environmental and social safeguards.** Based on the GCF checklist for rapid evaluation of environmental and social impact, the Project is globally classified in the category "Moderate" using the FAO risk classification, or category "B" using the GCF environmental and social policy. It was therefore necessary to develop a Framework Plan for Environmental and Social Management (ESF) for the Project. The ESF describes the necessary measures to guarantee that potential environmental impacts are identified, avoided, reduced and mitigated in line with FAO and GCF standards, as well as the national laws and regulations. It consists of mitigation measures, monitoring, reporting and communicating with stakeholders before, during and after implementation of the Project. Ultimately, this framework, will be used as an anchor for beneficiaries, who will need to develop an Environmental and Social Management Plan (ESMP) in order to obtain Project support.
424. The PMU will be responsible for monitoring implementation of the ESF and ESMPs, but ultimately, responsibility will be shared with the beneficiaries, who will need to ensure compliance with the ESF environmental and social safeguards during implementation and reporting. The PMU will monitor the beneficiaries. The Environmental and Social Safeguard Specialist, contracted by the PMU, will analyze and classify beneficiary initiatives using FAO categories (low, moderate, high) and the corresponding GCF categories (C, B and A). He or she will then conduct an environmental and social impact evaluation (ESIE) of category B initiatives and develop a corresponding environmental and social management plan. For initiatives in category "low" or "C", he or she will produce a summary of environmental implications. Initiatives with "high" risks will not be supported by the Project. The PMU will ensure, at district level, that: (i) The ESIE results are communicated locally; (ii) The ESIE reports are submitted to the Technical Committee and Steering Committee for review and authorization, unless exempted; (iii) The ESF measures are integrated in contracts with beneficiaries and that the implementing entities provide the required environmental monitoring and reports, and play their assigned roles in the grievance settlement mechanism
425. In order to support the work of the Environmental and Social Safeguards Specialist, the Technical Committee will establish subcommittees with a support mandate to validate methodologies and provide advice on the different environmental and social issues to be taken into consideration. Furthermore, the Project may retain specialized service providers to conduct periodic field verifications in order to validate compliance with the environmental and social management plans developed by the beneficiaries.

## **XI. ENVIRONMENTAL AND SOCIAL RISK MANAGEMENT**

426. A mission to identify and analyze environmental and social risks was conducted between May 21 and June 6, 2019 in the main districts and villages targeted by the Project to supplement the desk review, particularly the report of surveys conducted by the NGO ID and CERPAC in 10 districts of the Project area. The visited districts cover the area from the extreme north of the Project area (district of Ngo,

Plateaux department) to Hinda (Kouilou department), 30 km from the sea in the southwest.

427. The risk category assigned to this Project is Category B – corresponding to activities with limited adverse environmental and social impacts. This categorization is based on the following factors: a) The Project area is dominated by savanna with a relatively low biodiversity value – anthropic savanna maintained through human use of fire; b) The Project is designed to reduce pressure on natural ecosystems and conserve natural forests with a high biodiversity value; c) The Project is designed to overcome non-equitable aspects in terms of land tenure rights, with well-defined pathways for non-land owners to gain secure access to land in the medium and long-term. However, there is a risk that certain strata of non-land-owners, in particular women, young people and indigenous peoples, will not be able to benefit from land access in the same way as men.
428. An environmental and social risk analysis was conducted and a system to manage environmental and social risk during Project implementation was developed (see Annex 6 for the details). There is a risk that the current land system in Congo could limit the large-scale adoption of the agroforestry and forestry production systems proposed by the Project and that they will specifically benefit men and, to a lesser extent, women, young people and indigenous populations (medium impact). Among the production systems under consideration, there is a risk for the cocoa-based system to become too profitable, to the extent that too many beneficiaries will want to adopt it, which would lead to a risk of increased clearing of intact forest to create cocoa plantations (major impact). To minimize this risk, the Project will require in return that the promoted activities, including cocoa growing by beneficiaries, will not exceed 5-10 hectares and that the selected land will not be cleared in advance (for the number of hectares required for agro-industrial crops in forest areas, as per order 9450-MAEP/MAFDDRPRP). The minimum plantation size for formal groups may limit access for the best qualified applicants (medium impact). There is a risk that development of management and farming capacities will be very difficult, particularly for women, young people and indigenous populations (medium impact). The quality of governance by government administrative and technical departments is a risk to Project implementation. Although pesticide use is modest, there is a certain degree of risk related to its use in agroforestry or forestry production systems (small impact).
429. The Environmental and Social Management System (ESMS) is built on the environmental and social safeguard measures of the implementing entity (FAO) in line with the GCF Environmental and Social Policy. The ESMS is also linked to the REDD+ environmental and social safeguards that are based on three tools: a) The REDD+ Principles, Criteria, Indicators and Verifiers (namely PCIV-REDD+ 14), which breaks down at national level the Cancun guarantees of the United Nations Framework Convention on Climate Change; b) The Strategic Environmental and Social Assessment (SESA); and c) The Safeguard Information System (SIS). The ESMS includes sections on the management of invasive species, pesticide management and complaints management, as well as a REDD+ framework for communication and participation. Furthermore, the Project has developed a Planning Framework for Indigenous Peoples. During implementation of the Project, each component and activity will be subject to the ESMS analysis in line with the GCF requirements for Category B projects. The impact of each activity will be analyzed, and mitigation and monitoring methods will be identified. No resettlement of populations is planned. A complaints and complaints management system will operate at three levels, namely: a) District activity level; b) Project level; and (c) GCF level. All stakeholders will be educated on the good governance standards aimed at by the Project and on the different procedures for submitting their complaints at district, Project and GCF levels.
430. Some indigenous populations were identified in the district of Ngo during the feasibility study mission. The Project formulation team immediately initiated application of the GCF policy on



indigenous populations. It conducted surveys among these populations, particularly their reference situation in each village (history, number of households, lifestyle, difficulties in life, relations with the Bantu populations, internal hierarchy, land access methods, experiences with agricultural producer groups). They were consulted on Project's interventions, as well as their participation and specific concerns (risks). The interviewed indigenous populations generally felt incapable of negotiating usage contracts with land-owners to plant trees but believed that this would be possible with the support of the Project and the government. They verbally stated their interest in taking part in the Project.

431. Indigenous populations were found to be victims of much discrimination by Bantu populations. Without specific measures, these populations risk to become even more marginalized. Measures to improve respect of their civil rights and increase their ability to fully benefit from the Project's support were defined. A report of each meeting was prepared and signed by all adults present. A second mission was scheduled to provide further information about the Project, to present the findings of the first mission and the related preliminary recommendations, and to inform them about Law no. 5-2011 of February 25, 2011 relating to the promotion and protection of the rights of indigenous populations in the Republic of the Congo and on the National Network for Indigenous Populations of Congo (*Réseau National des Populations Autochtones du Congo* - RENAPAC). During this mission, a consultative meeting was organized and the chiefs of 13 villages were invited to discuss the Project and give their go-ahead to its submission to the GCF.
432. Finally, a road map was prepared containing the steps needed during Project startup to prepare a Planning Framework for Indigenous Peoples and to obtain receive free, prior and informed consent (see annex 6). One of the key measures would be the requirement that all opportunities offered to the Bantu also be offered to the indigenous populations.

## **X. GENDER ASSESSMENT AND ACTION PLAN**

### **Gender roles in the agriculture sector**

433. In rural areas, **women are at the heart of household food security**, having the responsibility of feeding the family and ensuring the well-being of children. Responsibilities between men and women in household fields are established according to agro-ecological zones.
434. In the forests, women are responsible for clearing (undergrowth cleaning) and men for cutting large trees and burns. All post-burn tasks are the responsibility of the women. However, few women are involved in decision-making in the forest sector in Congo, even if a 30% quota was introduced following the government's response to the reducing emissions from deforestation and forest degradation mechanism in developing countries. In the savannahs, women are at the center of all tasks from clearing to harvest. Given the very long cassava cycle (at least 12 months), women still practice crops association on the same field, groundnuts, corn and even bananas.
435. The National Gender Profile Report on the agricultural sector shows that women's associations involved in forestry activities are concentrated in the departments of Pool (53.4 %), Plateaux (30.7%), Likouala (11.4 %) and Niari (3.4 %). In the different districts covered by the Project, women are very involved in gathering, processing and marketing Non-Timber Forest Products (NTFPs). Apart from hunting, these two activities are in fact traditionally reserved for women and children. These products vary by district, as well as by ecological zones and dietary habits in the departments. They include *Gnétum africanun*, currently called "coco" in Lingala, "fumbua" in Kituba, mushrooms,

caterpillars, wild fruits, legumes, medicinal plants, leaves from different trees particularly arrowroot, which are used to cook cassava and other foods. Men's forest activities are primarily for profit. The same applies to the manufacture of charcoal, which is an exclusively male activity. NTFPs constitute a livelihood and source of income for women. Some of these products are used for their own consumption, and others are sold. It is therefore easy to understand the negative effect that any natural resource degradation phenomena would have on the lives of rural communities. NTFPs have many functions: food, medicine, traditional medicine, construction and craft materials, income sources through the sale of some NTFPs, such as caterpillars, honey, Gnetum leaves, palm nuts, kola nuts, etc.

436. The sociolegal status of women in Congo remains a major concern. Although the 2015 Constitution enshrines the principle of gender equality in all sectors of national life, some legislative instruments continue to convey disparities.
437. In order to identify any gender disparities that could prevent women from taking part in and fully enjoying the benefits of the Project, a gender assessment was conducted in all sites affected by the Project. The general objective of this assessment was to conduct a situational analysis in order to guarantee incorporation of the practical needs and strategic interests of beneficiaries during formulation of the Project. To this effect, discussion groups were held in the departments of Kouilou, Niari, Bouenza, Pool and Plateaux. A total of approximately 20 discussion groups were organized with women's groups, as well as about 30 individual interviews. The situational analysis was conducted following the guidelines of Annex 8 provided by the GCF and its scope was extended beyond the basic questions required by the GCF. Over time, the assessment allowed the disparities and social constraints faced by women within the context of agricultural and forestry activities to be highlighted.
438. In terms of cultural barriers, the following can be noted: Inequality of land rights under customary law; Weak decision-making power of women, which does not always allow them to assert their rights and express their viewpoints in the community, as well as within mixed agricultural groups; Poor access to information, coupled with low representativity of women in public meetings and consultations, thus limiting their full participation in public life management at community level.
439. Barriers related to education were also raised, characterized by a high level of illiteracy in women within agricultural groups in the districts covered by the Project. This is a major barrier that prevents women from benefiting from training opportunities on agricultural techniques and other capacity building sessions that may be offered to them.
440. In terms of socioeconomic barrier or disparities, the assessment highlighted the financial vulnerability of women from certain agricultural groups in the districts targeted by the Project. Financial insecurity has many causes including the size of their yields and the fact that they devote nearly all the resources from their yields to family expenses, making it difficult to save. In addition, access to credit is not easy for them.
441. The assessment also highlighted unmet needs for training and technical support related to agriculture and forestry activities for women in groups with consequences negatively impacting their productivity. There are major obstacles which increase the social vulnerability of women producers and prevent them from investing in order to adopt more sustainable and profitable practices.
442. Discussions with various potential beneficiaries also showed that access by women to information in villages is largely dependent on the channel by which this information is distributed. For this reason, through the Gender Action Plan developed further to numerous conversations with women, the

Project is placing specific emphasis on the channels to be used to relay information at community level. This is to ensure that women not only have real-time access to information, but also that they are able to take part in meetings and public consultations. To this effect, the agricultural sector chiefs will be deployed as intermediaries in the villages.

443. Also, within the context of consultations prior to the compilation of local development plans, the Project will ensure the involvement of and effective participation by women in public encounters and meetings. Capacity building programmes on female leadership and citizenship provided for in the action plan will allow women to make their voices heard during public consultations as holders of rights and full citizens.

444. In order to resolve customary discrimination against women in terms of land access, the Project will address land tenure rights for women within the context of its Component 1. Furthermore, in terms of incentives, the Project will encourage the establishment of emphyteutic leases with women land-owners. It will also prioritize women's groups in land allocation. At least 35% of the Project's land beneficiaries will be women. The objective is to deconstruct the cultural norms that tend to exclude women from land management. In the same vein, community leaders will be educated in terms of behavioral changes (mindsets) related to women's access to and control of land within the customary framework. Also, in order not to increase the existing land-related discrepancies between men and women, the Project will endeavor not to buy land from women land-owners.

445. In terms of the bottlenecks (family obligations, illiteracy rates) observed during the assessment, which are barriers for women and prevent them from benefiting from potential training opportunities, strategies were defined to adapt the training to be provided by the Project to match the profile of women producers and their family constraints.

446. Finally, to guarantee the ultimate achievement of gender equality objectives, the Project will strengthen the technical and institutional capacities of the Project team on gender mainstreaming in the implementation of development projects, and more specifically the Project interventions. In order to guarantee the effective inclusion of women, the Project has set a goal to include at least 35% women within the context of each activity (capacity building, participation in meetings, etc.), as well as all forms of allocations and support to be provided by the Project.

447. A Gender Expert will also be recruited for enhanced monitoring of crosscutting gender mainstreaming in line with the Project components, as well as the performance indicators defined within the logical framework. It should be specified that these indicators contained in the logical framework, disaggregated by gender, will allow the participation of men and women to be measured in all actions planned by the Project. The same applies to the sub-activities planned as precursors to certain activities by way of corrective measures. In terms of monitoring and evaluation, the Project will integrate the gender dimension in its evaluation missions, including gender objectives in the terms of reference. The Gender Expert recruited within the context of the Project will also ensure that all data generated during implementation is routinely disaggregated by gender, including the monitoring and evaluation reports.

448. More detailed information on gender and the detailed gender action plan are available in Annex 8.

## **XI FINANCIAL AND LOGISTICAL MANAGEMENT**

449. In terms of purchases/acquisitions, fiduciary responsibility will be assumed by FAO effectively and professionally and in line with its standards and procedures, as well as the terms of the Accreditation

Masters Agreement with the GCF.

450. As indicated above, FAO will serve as the Accredited Entity (AE) and fiduciary agent with the GCF and will therefore be responsible for disbursement of Project funds, as well as accounting and production of financial reports. Further to approval of the Project by the GCF Board of Directors, FAO will disseminate its Operations Manual and Procurement Procedure Manual among the members of the Project Management Unit, the Steering Committee, the members of the Technical Committee, as well as all other relevant stakeholders prior to the start of the Project's activities. During implementation of the Project, FAO will also build the institutional capacities of the PMU, SC and TC in the areas of strategic planning, technical control, financial management and procurement. Finally, the PMU will be first in line to determine and control effective use of funds. This PMU will consist of personnel recruited by FAO and personnel assigned by the government (MEF and MAEP), including a procurement expert and a certified public accountant.
451. The standards for procurement and financial management will be in line with FAO standards and procedures. In order to ensure the quality of the results, FAO will also assign a Lead Technical Officer, attached to the Lead Technical Unit, who will conduct a monitoring and evaluation mission twice a year in order to ensure effective implementation of the Project in compliance with the procurement plans and procedures, as well as budgetary monitoring in accordance with the Project. This monitoring and evaluation report will be presented to the SC during biennial meetings.
452. The acquisition of goods or services necessary for Project implementation, training, consultation, as well as financial services, will be governed by the applicable FAO guidelines in accordance with the relevant associated Procurement Manual and Procurement Plan to be developed and approved prior to the startup of Project activities. As previously indicated, FAO will be the main executing entity for the Project and will implement the Project in close collaboration with the MEF and MAEP, who will also have the status of executing entities. FAO, via the PMU, will transfer funds to the MEF and MAEP through Letters of Agreement, which will highlight the procedures (activities, schedule, payments, monitoring, evaluation) to be followed to achieve the deliverables under their respective responsibilities. Moreover, the PMU will use Letters of Agreement or consultation contracts to purchase services from service providers, whether they are NGOs, private suppliers or independent consultants. To purchase goods, the PMU will follow a competitive procurement process, in line with FAO procurement procedures.
453. The PMU will produce quarterly reports on finances and purchases for the Steering Committee for review and revision, if applicable. Monitoring of planning and achievement of the Project objectives will be conducted jointly by FAO and the Steering Committee. In fact, the Project's Lead Technical Officer will oversee the development of a biennial monitoring evaluation report, which will be presented to the Steering Committee.

## Bibliography

Albrecht, A. and Kandji, S.T. (2003) Carbon sequestration in tropical agroforestry systems. *Agriculture, Ecosystems and Environment*, 99, 15-27.

Bentrup, G.; Cernusca, I.; Gold, M. 2018. Supporting U.S. agricultural landscapes under changing conditions with agroforestry: An annotated bibliography. *Bibliographies and Literature of Agriculture* 137. Washington, DC: U.S. Department of Agriculture Forest Service. 63 p.

Bisiaux F., Peltier R., Muliele J-P., 2009. Industrial and agroforestry plantations at the service of the populations of the Batéké plateaus in the Democratic Republic of Congo. *Tropical Woods and Forests*, 2009, 301 (3): 21-31

Boundzanga, G.C, Lokenya, L. et al. 2016 : Travaux dendrométriques pour une meilleure évaluation des volumes bruts et volumes nets des fûts des arbres abattus dans les concessions forestières de la République du Congo, CN-REDD, p. 16.

Carte de Suivi du Couvert Forestier en République du Congo pour la Période 2014 à 2016. CNIAF 2019.

Cartographie des plantations forestières en République du Congo. CNIAF. 2016

Common Country Assessment for the Republic of Congo. United Nations System. July 2018

Communication Nationale Initiale de la République du Congo. Ministère de l'Industrie Minière et de l'Environnement. 2001.

Country Programming Framework 2013-2016 for the Republic of Congo. FAO.2012.

Country Programming Framework 2013-2016 for the Republic of Congo. FAO. 2013.

Dubiez, E., Freycon, V., Marien, JN. *et al.* Long term impact of *Acacia auriculiformis* woodlots growing in rotation with cassava and maize on the carbon and nutrient contents of savannah sandy soils in the humid tropics (Democratic Republic of Congo). *Agroforest Syst* **93**, 1167–1178 (2019).

<https://doi.org/10.1007/s10457-018-0222-x>

Economic situation of the Republic of Congo. World Bank September 2018.

Étude de faisabilité du projet Fonds Vert pour le Climat – Congo. Volet financement. Rapport Final. Horus Development Finance. 2018

Étude de faisabilité technique et économique dans le cadre de la mise en œuvre de la Contribution Déterminée Nationale (CDN) du Congo dans le secteur de l'utilisation des terres et de la foresterie. CIRAD. 2019.

FAO, 2015. Evaluation des ressources forestières mondiales

Forest Reference Emission Level (FREL) for the Republic of Congo. REDD+ National Coordination. 2016.

Lorenz, K., Lal, R. 2014. Soil organic carbon sequestration in agroforestry systems. A review. *Agronomy for Sustainable Development* 34:443-454.

Ministère de l'agriculture et de l'élevage et FAO. 2013. Document synthèse du Bilan diagnostique de la filière manioc en République du Congo.

Montagne, P., Housseini, M., L.O. Sanda. 1997. Rural fuelwood markets in Niger; Method of development. Operation and management of contracted Sahelian forest ecosystems

Nationally Determined Contribution for the Republic of Congo. 2015.

Ngeve, J., Jalloh, A., Ndjatsana, M. Research and Policies for Climate Change Adaptation in Central Africa Agriculture. Summary

Nkou, M., Gazull, L. 2011. The challenges of the "industrial eucalyptus plantations" sector in the sustainable management of the fuelwood supply basin in the city of Pointe-Noire (Republic of the Congo). In: 48th ASRDLF Symposium: Migrations and Territories, Schoelcher, Martinique, 6-8 July 2011. ASRDLF. sl: sn, 15 p. ASRDLF 2011 conference. 48, Schoelcher, Martinique, 6 July 2011/8 July 2011.

OTF, 2009. Etude sur la commercialisation de l'agriculture et sur l'investissement dans le secteur privé domestique. Banque Mondiale.

Ouissika B. C., Milandou C. S. Cartographie du couvert forestier et des changements en république du Congo. Conférence OSFACO : Des images satellites pour la gestion durable des territoires en Afrique, Mar 2019, Cotonou, Bénin. fhal-02189549f (<https://hal.archives-ouvertes.fr/hal-02189549/document>)

Pongui, B.S., Kenfack, C.E. 2012 Adaptation and mitigation in the Republic of Congo: Stakeholders and political processes. Working Document 99. CIFOR, Bogor, Indonesia

Poverty Assessment Report for the Republic of Congo. World Bank. 2017.

Proces P., Dubiez E., Bisiaux M, Péroches A., Fayolle A., Production d'*Acacia auriculiformis* dans le système agroforestier de Mampu, plateau Batéké, République démocratique du Congo, *BOIS ET FORÊTS DES TROPIQUES*, 2017, N ° 3 3 4 ( 4 )

REDD+ National Strategy for the Republic of Congo, 2016. REDD+ National Coordination. 2016.

REDD+ National Strategy for the Republic of Congo. REDD+ National Coordination. 2016.

Report of the Technical and economic feasibility study CIRAD. 2019. Page 103

Republic of Congo Poverty Assessment Report: Education, Jobs and Social Protection for a Sustainable Reduction of Poverty. World bank. May 2017.

République du Congo. Document de Stratégie Pays 2018-2022. Département Économie Pays- ECCE, Direction Générale Afrique Centrale, RDGC. Banque Africaine de Développement- BAD. 2018.

Résumé du document de la revue stratégique nationale, Programme Alimentaire Mondiale. 2018.

Robinson, BE., Holland, MB., Naughton-Treves, L. 2011. Does secure land tenure save forests? A review of the relationship between land tenure and tropical deforestation. CCAFS Working Paper no. 7. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark.

Samba, G., Nganga, D. 2012. Rainfall variability in Congo-Brazzaville 1932-2007. International Journal of Climatology

Schure, J., Marien, J-N., De Wasseige, C., Drigo, R., Salbinato, F., Dirou, S., Nkoua, M. 2012. Contribution of woodfuel to meet the energy needs of the population of Central Africa: Prospects for sustainable management of available resources. In: The forests of the Congo Basin: State of the forest 2010. De Wasseige Carlos (ed.), De Marcken Paya (ed.), Bayol Nicolas (ed.), Hiol Hiol François (ed.), Mayaux Philippe (ed.), Desclée B. (ed.), Billand Alain (ed.), Nasi Robert (ed.). Luxembourg: Publications Office of the European Union, pp. 109-122. (EUR) ISBN 978-92-79-22716-5

Sonwa et al.2013. Climate change and adaptation in Central Africa: Past, scenarios and options for the future.

Zomer, R., Neufeldt, H., Xu, J. et al. Global Tree Cover and Biomass Carbon on Agricultural Land: The contribution of agroforestry to global and national carbon budgets. *Sci Rep* 6, 29987 (2016). <https://doi.org/10.1038/srep29987>

**Websites:**

<https://data.worldbank.org/country/congo-rep>

<https://www.britannica.com/place/Republic-of-the-Congo/Congo-since-independence>

<https://www.climatewatchdata.org/ghg-emissions?breakBy=sector&chartType=area&gases=246&regions=COG>

<https://climateknowledgeportal.worldbank.org/country/congo-republic/climate-data-projections>

<https://gain.nd.edu/our-work/country-index/>

<http://hdr.undp.org/sites/default/files/hdr2019.pdf>

<https://worldpopulationreview.com/countries/republic-of-the-congo-population/>

<https://www.globalhungerindex.org/congo.html>

<http://www.fao.org/3/b-i7374e.pdf>

<https://agritrop.cirad.fr/578904/1/Forets%20of%20the%20congo%20basin.pdf>

[https://www.ecofog.gf/giec/doc\\_num.php?explnum\\_id=1729](https://www.ecofog.gf/giec/doc_num.php?explnum_id=1729)

<http://www.fao.org/3/i1861f/i1861f08.pdf>

<https://www.forestcarbonpartnership.org/country/congo-republic>

<http://www.cafi.org/content/cafi/en/home/partner-countries/republic-of-congo.html>

<https://www.undp.org/content/dam/cafi/docs/RoC%20documents/PI%20REDD%20RoC%20%20version%207%20finale.pdf>

[https://www.thegef.org/projects-faceted?f\[\]=field\\_country:45](https://www.thegef.org/projects-faceted?f[]=field_country:45)

[https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/meeting-documents/investment\\_plan\\_congo\\_republic\\_approved\\_decision.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/meeting-documents/investment_plan_congo_republic_approved_decision.pdf)

<https://www.climateinvestmentfunds.org/projects/community-agroforestry-and-wood-energy-project-pacbe>

[https://www.climateinvestmentfunds.org/sites/cif\\_enc/files/meeting-documents/investment\\_plan\\_congo\\_republic\\_approved\\_decision.pdf](https://www.climateinvestmentfunds.org/sites/cif_enc/files/meeting-documents/investment_plan_congo_republic_approved_decision.pdf)

<http://www.fao.org/3/j8027e/j8027e07.htm>

<https://www.cia.gov/library/Publications/the-world-factbook/geos/cf.html>

<https://fr.countryeconomy.com/demographie/idh/congo>



## Annex 1

### *Terms of reference of the Chief technical adviser*

The Project team leader reports to the FAO Representative in Congo. He/she collaborates with the Country Programme/Operations/Administrative Units and in consultation with the relevant technical units at FAO headquarters and with technical units at the Regional Office for Africa (RAF).

#### Key Results

Leadership and technical expertise for the planning, development and implementation of Programme of Work and Budget, projects, related-products, and services.

#### Specific tasks

- Advises the Ministry of Forest Economy, Ministry of Environment, Ministry of Agriculture in implementing the project;
- Prepares the annual Technical Assistance Team work plans and budgets; clears them with FAO and the donor and obtaining Programme Steering Committee approval of them;
- Supervises the implementation of the work plans, prepares commitment requests for the FAO budget holder and monitors and reports on progress and expenditures in accordance with the requirements of FAO, the Government of Congo, the Steering Committee and the donor;
- Supervises and assist the Technical Assistance Team, consultants and the support staff in carrying out their duties;
- Develops the draft Terms of Reference (TORs) for consultants and for project evaluations, also specifying what tasks are to be performed during each of their missions;
- Participates in the briefing and debriefing of all consultants and carefully reviews their reports after each mission.
- prepare technical specifications of the required project inputs (equipment, supplies) and draft tender documents for local or international procurement;
- Develops overall plans for training to be performed under each component of the programme;
- Liaises directly with the Government of Congo on matters related to involvement of partners; as required during the course of the project;
- Monitors all components of the programme according to the programme document;
- Prepares the final report of work and drafts terminal report of programme in consultation with relevant stakeholders
- perform other duties as required.

#### Minimum Requirements

- Advanced university degree in forestry, agriculture, management, or a related discipline;
- Ten years of experience in programme management in particular in forestry related activities;
- Working knowledge of English, French or Spanish and limited knowledge of one of the other two or Arabic, Chinese, Russian.

#### Competencies

- Results Focus
- Leading, Engaging and Empowering
- Communication
- Partnering and Advocating
- Knowledge Sharing and Continuous Improvement
- Strategic Thinking

## Technical/Functional Skills

- Work experience in more than one location or area of work, particularly in field positions, is essential;
- Extent and relevance of experience in researching, planning, managing and executing programs in complex situations;
- Demonstrated capacity to understand government organization structure and their roles to promote dialogue and multi-institutional support;
- Extent and relevance of experience in programme management in particular in food systems related activities specifically at the government level;
- Working knowledge of English is an asset.

## **Annex 2: Environmental and social conditions of the targeted departments**

The environmental and social conditions in the departments targeted by the Project are presented in the tables below, as well as the drivers of deforestation and forest degradation, future trends and potential mitigation measures.

Table 51: Socioeconomic and environmental conditions in the Department of POOL

Soil and climate characteristics	Human density, product transportation	Main drivers of degradation	Possible development of degradation and deforestation drivers in the targeted areas
<p><b>Relief:</b> Moderate relief plateau interspersed with dry valleys of altitudes inclusively between 450 and 650 m in zone 1. Zone 2 is hilly with an altitude of between 350 and 550 m.</p> <p><b>Climate:</b> Subequatorial climate zone typical of the lower Congo. Marked dry season between June and September. Total rainfall between 1,350-1,650 mm/year in zone 1 and between 1,300 and 1,400 mm in zone 2. Mean average temperature: 25°C.</p> <p><b>Natural vegetation:</b> In zone 1, <i>Trachypogon thollonii</i> and <i>Hyparrhenia diplandra</i> savanna and <i>Loudetia savanna</i> with a sparse to absent shrub layer composed of <i>Hymenocardia acida</i>, <i>Annona arenaria</i> and <i>Vitex madiensis</i>. Presence of mesophilic forest patches located on the plateau and lowland borders. In zone 2, dense to moderately dense shrub savanna composed of <i>Hymenocardia acida</i>,</p>	<p><b>Population densities:</b> Low on average in Pool (7.3 inhabitant/km<sup>2</sup>). In zone 1, densities range from 3 to 7 inhabitants/km<sup>2</sup> with 29 and 30,000 inhabitants in the Ignié and Ngabé districts respectively. In zone 2, densities range from 5 to 24 inhabitants/km<sup>2</sup> with 35,000 and 16,000 inhabitants in the Kinkala and Ngoma-Tsétsé districts respectively. The proximity of Brazzaville is an advantage for material supplies and product exportation with its ± 2 million inhabitants.</p> <p><b>Agriculture</b> Traditional cropping system: slash-and-burn agriculture, polyculture and fallow fields. Territory dedicated to agriculture greater in zone 1 than zone 2. In zone 1, access to water limits agricultural development.</p>	<p><b>Zone 1 and 2:</b> Slash-and-burn farming (cassava, maize, plantains, peanuts) essentially for local consumption and to supply the city of Brazzaville. Production of charcoal prior to cultivation of forest zones to supply the city of Brazzaville.</p> <p>With regard to the two target areas: lack of governance, mostly ineffective local authority control mechanism aggravated by the post-conflict situation.</p>	<p>Subsistence farming Demographic growth. Increased pressure on forest areas from slash-and-burn farming and charcoal-making with the risk of reduced fallow periods and soil impoverishment.</p> <p>2) Lack of alternatives to slash-and-burn farming, retreat of forest fronts in the massive tracts in south Pool (zone 2 and beyond) and degradation of lowland forests in savanna areas (zone 1).</p> <p><b>Logging:</b> 1) Regular increase in the demand for wood on the domestic market (artisanal sawing) and poles for construction.</p> <p>2) Persistent weak administrative control mechanisms.</p> <p>3) Zone 2: post-conflict situation, and possibly insecure area.</p>

<p><i>Annona arenaria</i> and degraded gallery forests.</p> <p><b>Soils:</b> Impoverished yellow ferralitic, sandy to sand-clay soils developed on sandstone and sandy silts (Batéké plateaus) in zone 1.</p> <p>Very limited agricultural potential on the sandy zones (zone 1) due to the chemical poverty of the soil that is, however, suitable for forest plantations.</p> <p>In zone 2, the soils are also formed from a schisto-sandstone series and polymorphic sandstone. The soils are generally sandy, acid and poor in exchangeable bases.</p>	<p>Cattle, goat/sheep and poultry farming are predominant.</p> <p><b><u>Transport of products to Brazzaville:</u></b></p> <p>Via the RN2 for zone 1.</p> <p>Via the RN1 ex. from zone 2 and secondarily via the Brazzaville-Pointe-Noire Railway for zone 2.</p> <p>Important secondary track network in zone 2 but transport depends on weather conditions (tracks not maintained).</p>		
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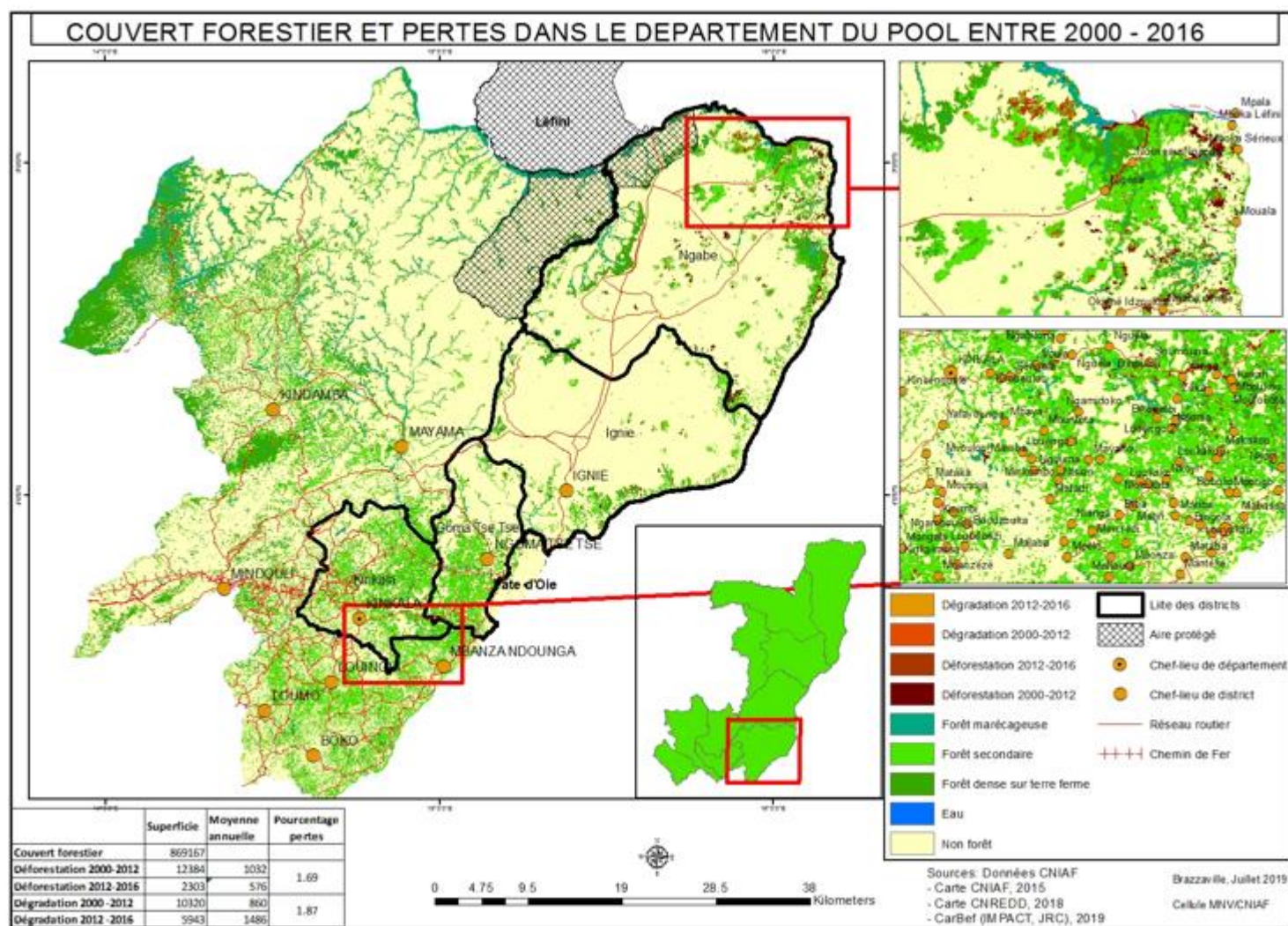


Figure 23: Deforestation and degradation hotspots and potential locations for the Project in the Department of Pool

Source: CNIAT and FAO (2019)

Table 52: Socioeconomic and environmental conditions in the Department of Plateaux

Soil and climate characteristics	Human density, product transportation	Main drivers of degradation	Possible development of degradation and deforestation drivers in the targeted areas
<p><b>Relief:</b> Plateau area in the Ngo region (550-500 m in altitude, PRONAR (<i>Programme National d'afforestation et de Reboisement</i> [National Afforestation and Reforestation Programme]) block G) dissected by dry or active valleys. The slope is slightly oriented towards the north and east with an average altitude of 300 m at the bottom of the valley and bordering the Congo River.</p> <p><b>Climate:</b> Subequatorial transition zone between the lower Congo and subequatorial climates. Marked dry season between June and September. Total rainfall: between 1,500 and 1,800 mm/year and between 1,200 and 1,400 mm bordering the Congo River. The mean average temperature is 25°C.</p> <p><b>Natural vegetation:</b> All blocks are located in savanna areas with mesophilic forest patches and gallery forests bordering streams. There are two types of savanna: <i>Trachypogon thollonii</i> and <i>Hyparrhenia diplandra</i> savanna, <i>Ctenium newtonii</i> with a</p>	<p><b>Population densities:</b> Low on average in the department (4.5 inhabitant/km<sup>2</sup>). The districts of Ngo and Mpouya are the least populated with 16,700 and 9,200 inhabitants respectively. Gamboma district is the most populated with 43,200 inhabitants.</p> <p><b>Agriculture</b> Traditional cropping system oriented towards low-yield food production: slash-and-burn agriculture, polyculture and fallow fields. The main crops are cassava, yams, peanuts, and bananas in the district of Ngo. Small cattle, goat and sheep population. The use of fertilizers and plant protection products is rare.</p> <p><b>Transportation of products to Brazzaville:</b> Essentially via the RN2, secondarily via the port of</p>	<p>Slash-and-burn farming (cassava, maize, bananas, peanuts) is the main driver of degradation of forest areas. Production essentially for local consumption, with limited exports to Brazzaville. Bush fires (burning of savannas and cleared areas) are also a significant threat to the reestablishment of degraded forest cover and the replenishment of the soil fertility potential in fallow areas. Lack of governance, ineffective control mechanisms by the authorities despite the proximity of the Léfini fauna reserve.</p>	<p>1) Continued demographic growth although population densities are still low in the department at this time. Expansion of the capital's sphere of influence to cover its supply requirements. Increased pressure on forest areas from slash-and-burn farming and charcoal-making with the risk of reduced fallow periods and soil impoverishment.</p> <p>2) No alternative to slash-and-burn farming involving the retreat of forest fronts in the various large forest tracts and exacerbation of impact in the Léfini reserve.</p> <p>3) Persistent weak administrative control mechanisms.</p>

<p>sparse shrub layer (<i>Hymenocardia acida</i> and <i>Annona arenaria</i>); <i>Hyparrhenia acida</i> and <i>Loudetia demeusi</i> savanna with a light ground layer and a thin shrub layer dominated by <i>Hymenocardia acida</i>.</p> <p><b>Soils:</b> The soils are developed from two tertiary geological formations: the Batéké plateau series composed of sandstone and sandy silts and the Stanley Pool series made up of sandstone and claystone (valley floors and along the Congo River). The soils of the upper plateau are impoverished, yellow and ferralitic on sand-clay and sandy material on the low areas and slopes of the plateaus. Along the Congo River, podzolic soils are found on sand and/or hydromorphic soils locally along watercourses.</p>	<p>Mpouya which is, however, in a poor condition.</p> <p>Network of secondary roads and tracks is generally not maintained or poorly maintained (silting e.g. Ngo-Mpouya link).</p>		
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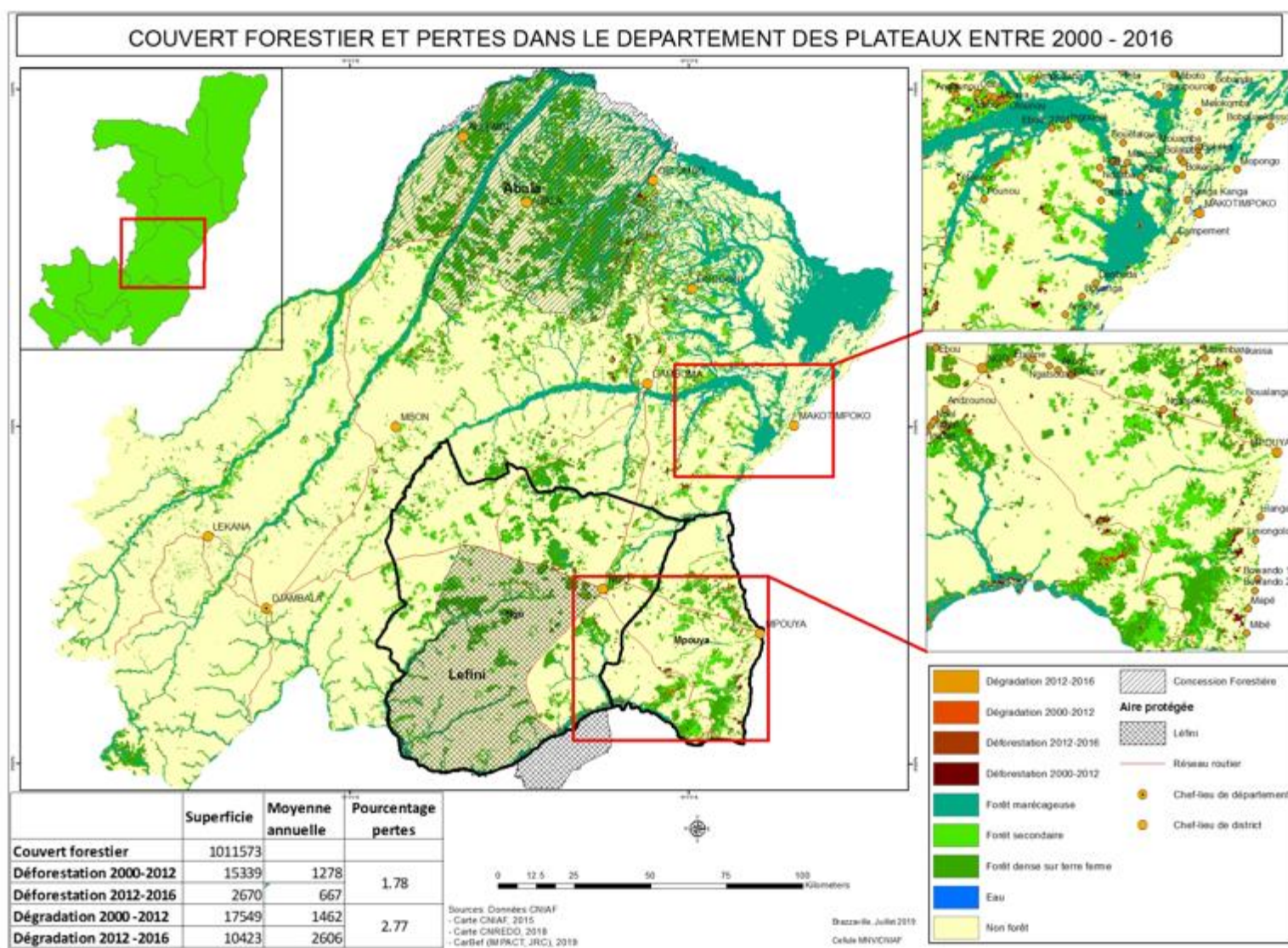


Figure 24: Deforestation and degradation hotspots and potential locations for the Project in the Department of Plateaux

Source: CNIAP and FAO (2019)

Table 53: Socioeconomic and environmental conditions in the Department of Kouilou

Soil and climate characteristics	Human density, product transportation	Main drivers of degradation	Possible development of degradation and deforestation drivers in the targeted areas
<p><b><u>Geographic location</u></b>  <b><u>Relief:</u></b> Flat to gently undulating in the west (zone 1) varying between 50 and 120 m in altitude. Hilly to very hilly towards the east (zone 2, pre-Mayombe and Mayombe forest) varying from 120 m to 500 m in altitude.</p> <p><b><u>Climate:</u></b> Subequatorial climate zone. Marked dry season between June and September. Total rainfall: between 1,200-1,300 mm/year in zone 1 and 1,200-1,500 mm/year in zone 2. Mean average temperature: 25°C.</p> <p><b><u>Natural vegetation:</u></b> pseudo-steppe savanna with a light to absent shrub layer (<i>Annona arenaria</i>) in zone 1 and semi-deciduous to evergreen dense rainforests in zone 2.</p> <p><b><u>Soils:</u></b> Impoverished yellow ferralitic soils on sandy deposits in savanna areas (zone 1) to reworked red soils on metamorphic and schisto-calcareous rocks (zone 2). Very limited agricultural potential in coastal sandy areas (zone 1) due to</p>	<p><b><u>Population densities:</u></b>  Low on average in Kouilou (6.1 inhabitants/km<sup>2</sup>), with 10,200 inhabitants in the district of Madingo-Kayes (zone 1) and 60,000 pour the district of Hinda (zone 2). The proximity of Pointe-Noire is an advantage for material supplies and product exports.</p> <p><b><u>Agriculture</u></b>  Cropping system: slash-and-burn agriculture, polyculture and fallow fields. Almost non-existent livestock production mainly represented by poultry and fish farming.</p> <p><b><u>Transportation of products to Pointe-Noire:</u></b>  Via the RN5 (tarred between Madingo-Kayes and Pointe-Noire) for zone 1. Work in progress on the Kouilou bridge, accessible only to light vehicles, crossing by ferry for trucks.</p>	<p><b><u>Zone 1:</u></b> Massive eucalyptus tract with uncontrolled logging by the local people to produce charcoal and timber (poles, etc.) with a very large demand from the city of Pointe-Noire (<math>\pm</math> 1 million inhabitants). Management of the large forest tract was retroceded by the state to the SNR after liquidation of the EFC company. The current reduced area is 35,000 ha out of the initial 45,000, with 10,000 ha located north of the Kouilou River. The large forest tract lost nearly 7,000 ha over the last decade due to expansion of the city of Pointe-Noire, fires and illegal logging.</p> <p><b><u>Zone 2:</u></b> Slash-and-burn farming (cassava, maize, plantains, pineapples), essentially, to supply the city of Pointe-Noire. Production of charcoal prior to cultivation to supply the city</p>	<p><b><u>Subsistence farming</u></b>  1) Continued demographic growth and immigration to Kouilou. Development of Pointe-Noire. Increased pressure on forest areas from slash-and-burn farming and charcoal-making with the risk of reduced fallow periods and soil impoverishment.</p> <p>2) Lack of alternatives to slash-and-burn farming, retreat of forest fronts in the Mayombe forest (zone 2) and degradation of low-lying forests in savanna areas (zone 1).</p> <p><b><u>Logging:</u></b>  3) Regular increase in the demand for wood on domestic and export markets.</p> <p>4) Persistent weak administrative control mechanisms.</p>

the chemical poverty of the soil. Higher potential in forest areas (Mayombe) with more clayey, locally fertile soils.	Via the RN1 from zone 2 and secondarily via the Brazzaville-Pointe-Noire railway.  Important secondary track network in the Loémé basin, but transport dependent on weather conditions (tracks not maintained).	of Pointe-Noire and, secondarily, artisanal sawing. With regard to the two target areas: lack of governance, mostly ineffective local authority control mechanism.	
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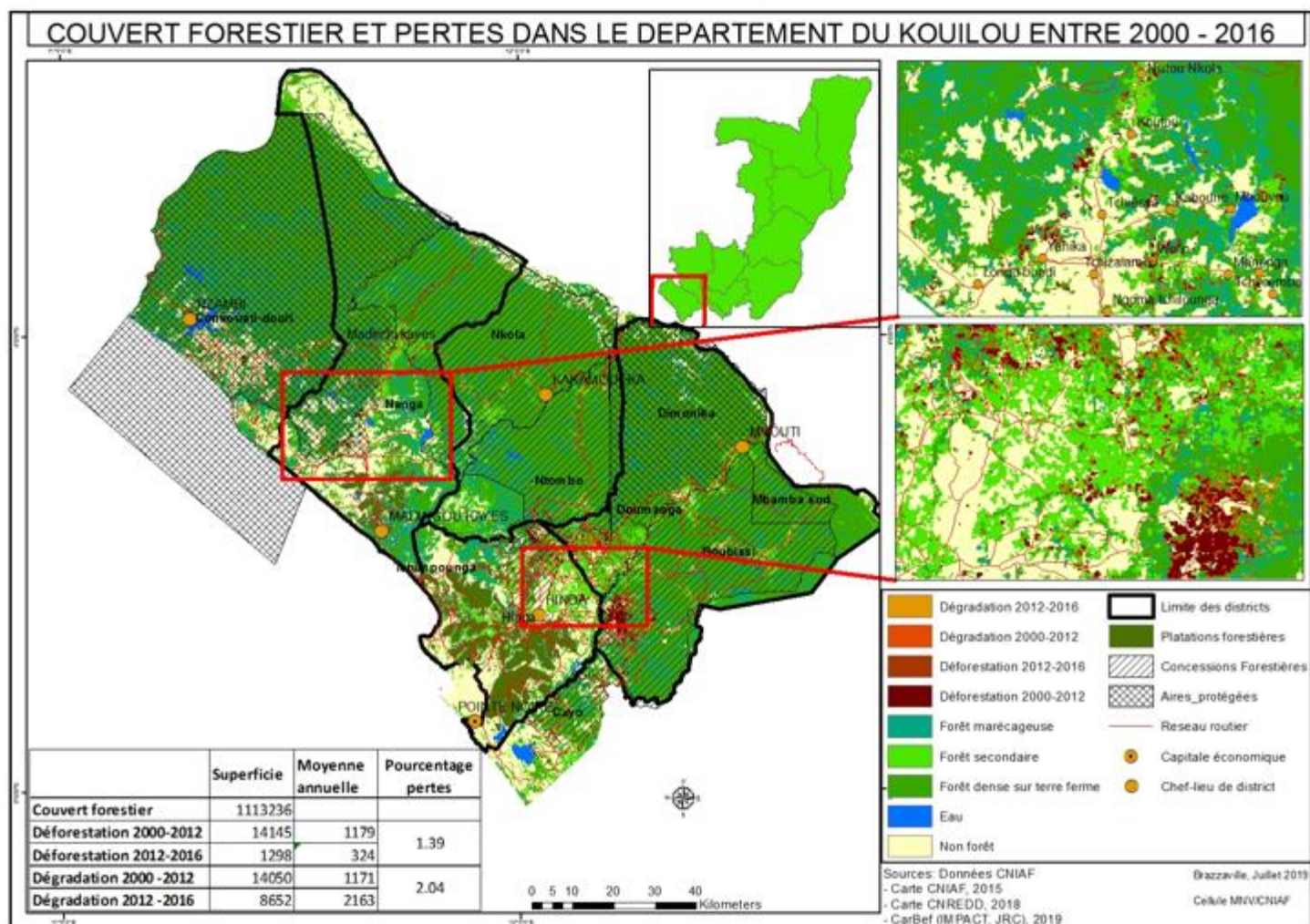


Figure 25: Deforestation and degradation hotspots and potential locations for the Project in the Department of Kouilou

Source: CNIAT and FAO (2019)



Table 54: Socioeconomic and environmental conditions in the Departments of Niari and Bouenza

Soil and climate characteristics	Human density, product transportation	Main drivers of degradation	Possible development of degradation and deforestation drivers in the target areas
<p><b><u>Geographic location</u></b></p> <p><b><u>Relief:</u></b> Flat to hilly to the east of Dolisie, varying between 150 and 400 m. Presence of hillocks, lowlands and flat areas suitable for different types of agricultural and agroforestry plantations (zone 1).</p> <p>In zone 2, the relief is unremarkable, the area is situated on the plateau overhanging the Niari River.</p> <p><b><u>Climate:</u></b> For both zones, subequatorial climate typical of the lower Congo. Marked dry season between June and September. Total rainfall between 1,200-1,300 mm/year. Mean annual temperature: 25°C.</p> <p><b><u>Natural vegetation:</u></b> In both zones, shrub savanna with grasses (<i>Hypparrhenia diplandra</i>, <i>panicum maximum</i>, <i>Imperata cylindrica</i>), light to dense shrub layer (<i>Hymenocardia acida</i>, <i>Annona</i></p>	<p><b><u>Population densities:</u></b> The mean population density in Niari is 8.3 inhabitants/km<sup>2</sup>, with 80,000 inhabitants in Dolisie (third largest town in the country). Bouenza (capital Madingou, with the secondary urban area of Nkayi, the fourth largest town in the country with 70,000 inhabitants) is the most populated department in Congo (20% of the national population) with a population density that is substantially higher than the rest of the country with 26 inhabitants/km<sup>2</sup> (by way of comparison, Niari is the second largest department in Congo in terms of population density).</p> <p><b><u>Agriculture</u></b> Traditional family cropping system with poor input use. The major crops are: cassava, peanuts and bananas. The Niari valley is one of the most cultivated areas in the Congo, which is suitable for the development of agricultural and agro-industrial activities.</p>	<p>Slash-and-burn farming (cassava, plantains, peanuts) essentially for local consumption (Dolisie) and to supply the city of Pointe-Noire and even Brazzaville. Substantial degradation of lowland forest areas and forest patches in savanna with enriched soils. Substantial degradation of the Mayombe forest near Dolisie on the RN1 axis. More than 95% of forest degradation is due to agricultural clearing in these two departments.</p> <p>High demand for firewood to bake clay bricks in Bouenza, the main construction material for dwellings (e.g. town of Nkayi).</p> <p>A lack of governance and ineffective control</p>	<p><b><u>Subsistence farming</u></b></p> <p>1) Demographic growth in these two most populated departments of the country which will, over time, lead to increasingly intensive logging of forest areas for slash-and-burn agriculture, charcoal and firewood production. Risk of reduced fallow periods and soil impoverishment. Risk of increased firewood demand to bake bricks for construction in these departments.</p> <p>2) Lack of alternatives to slash-and-burn agriculture, retreat of forest fronts in the Mayombe forest (zone 2) near Dolisie and degradation of lowland forests and forest patches in savanna areas.</p> <p><b><u>Logging:</u></b></p> <p>3) Regular increase in the demand for wood on domestic and export markets.</p> <p>4) Persistent weak administrative control mechanisms.</p>

<p><i>arenaria</i>, <i>Bridelia ferruginea</i>, <i>Nauclea latifolia</i>) and presence of degraded forest patches.</p> <p><b>Soils:</b> In both zones, the soils are desaturated, yellow and ferralitic of varying depths and developed on clay-silt materials from the middle schisto-calcareous substrate. Rejuvenated and possibly hydromorphic soils depending on the relief. Important agricultural potential for food crops and forest plantations. Heavy soils (clayey) that are relatively well-structured but sensitive to compression.</p>	<p>Livestock production is mainly represented by cattle and pig farming.</p> <p><b><u>Transportation of products:</u></b></p> <p>Mainly via the RN1 in the direction of Dolisie, Pointe-Noire and Nkayi, Brazzaville. Possibility of transportation using the railway (CFCO), mainly for non-perishable products.</p>	<p>mechanisms are aggravating factors.</p>	
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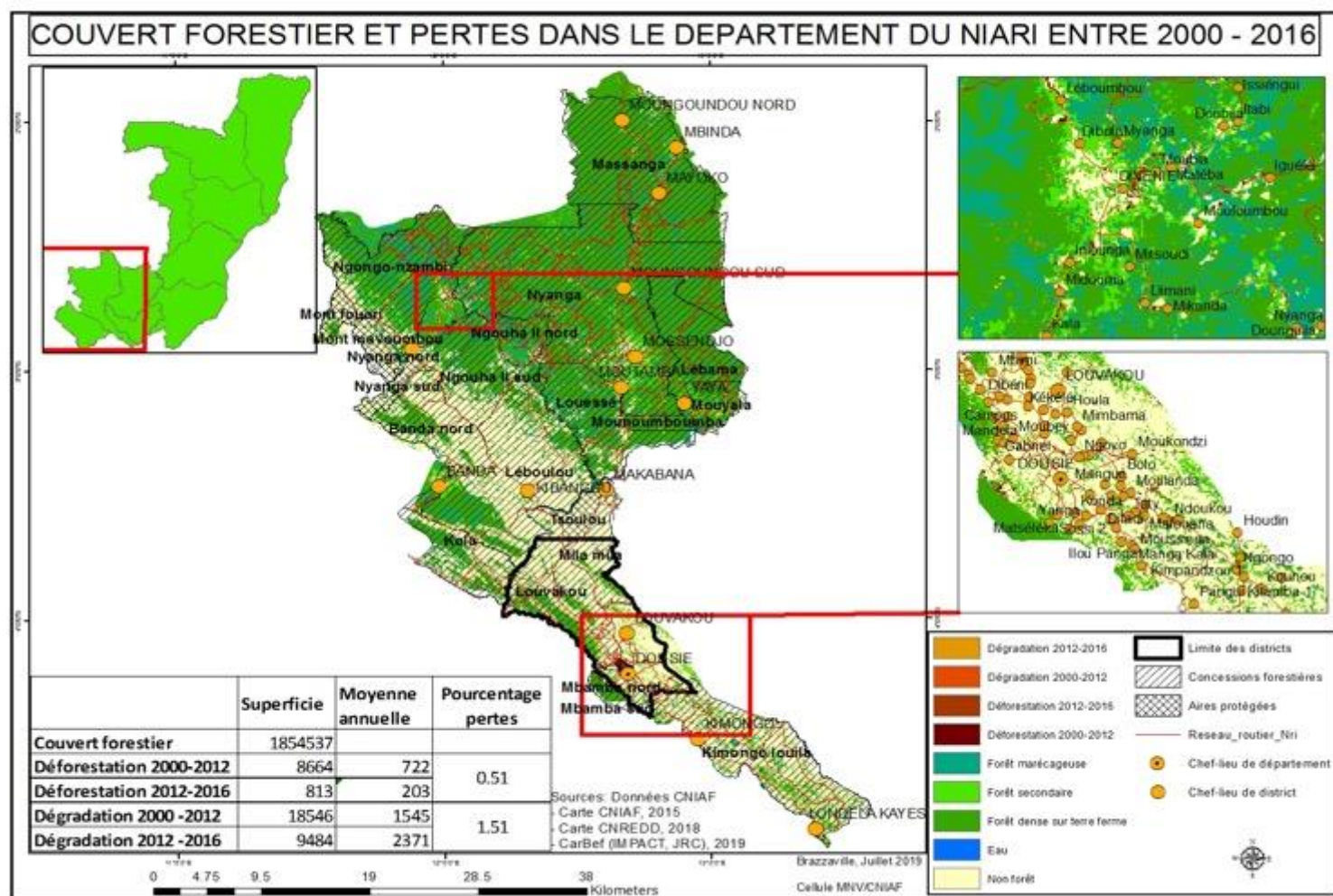
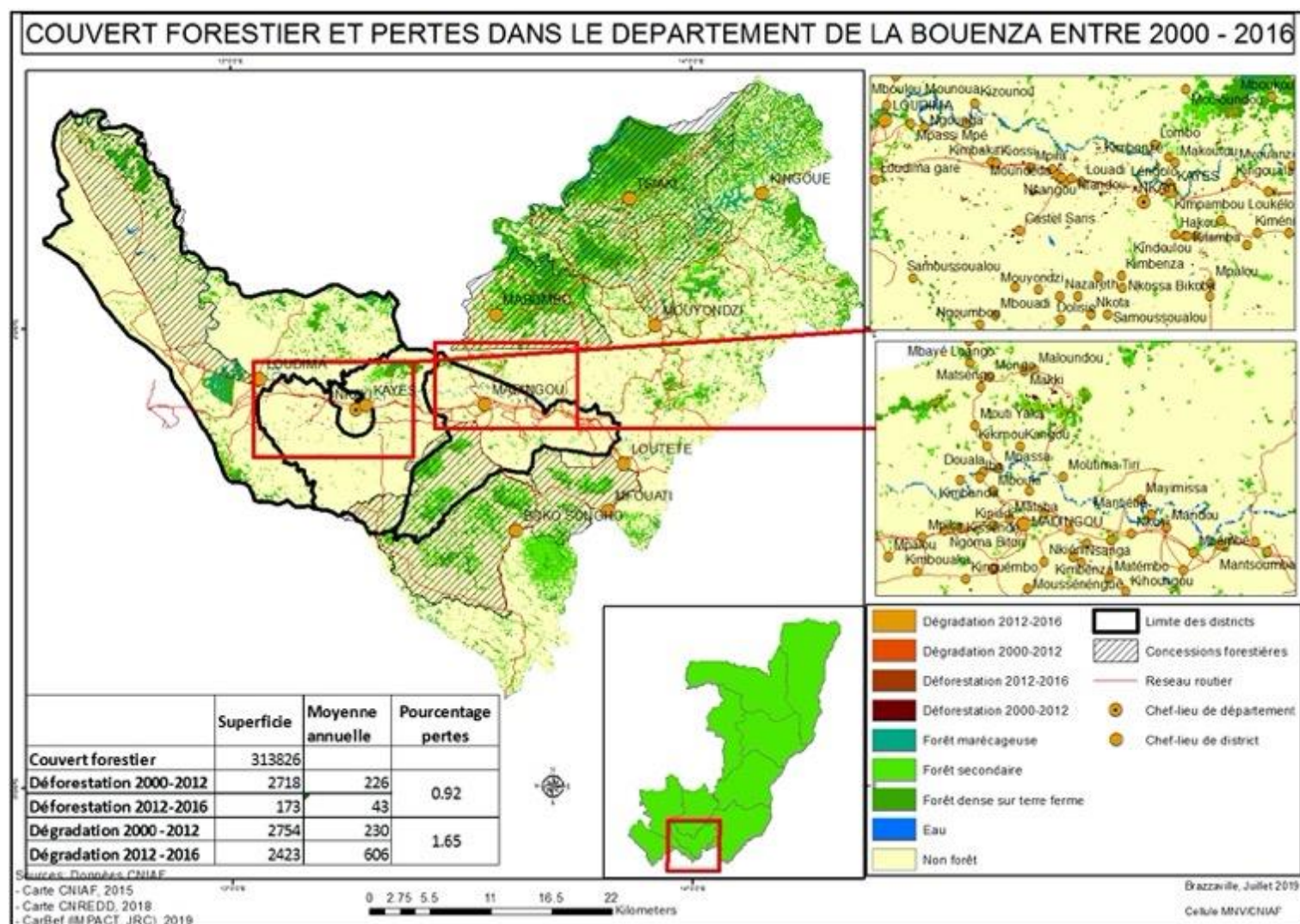


Figure 26: Deforestation and degradation hotspots and potential locations for the Project in the Department of Niari

Source: CNIAF and FAO (2019)



**Figure 27:** Deforestation and degradation hotspots and potential locations for the Project in the Department of Bouenza

Source: CNIAT and FAO (2019)



