

KEY PROJECT INFORMATION & PROJECT DESIGN DOCUMENT (PDD)

PUBLICATION DATE **14.10.2020**

VERSION **v. 1.2**

RELATED SUPPORT

- **TEMPLATE GUIDE Key Project Information & Project Design Document v.1.2**
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This document contains the following Sections

Key Project Information

SECTION A – Description of project

SECTION B - Application of approved Gold Standard Methodology (ies) and/or demonstration of SDG Contributions

SECTION C – Duration and crediting period

SECTION D – Summary of Safeguarding Principles and Gender Sensitive Assessment

SECTION E – Outcome of Stakeholder Consultations

Appendix 1 – Safeguarding Principles Assessment (mandatory)

Appendix 2 - Contact information of Project participants (mandatory)

Appendix 3 - LUF Additional Information (project specific)

Appendix 3 - Summary of Approved Design Changes (project specific)

KEY PROJECT INFORMATION

GS ID of Project	GS12214
Title of Project	N'situ Pelende by Colruyt Group
Time of First Submission Date	28/06/2023
Date of Design Certification	
Version number of the PDD	1
Completion date of version	
Project Developer	Colruyt Group
Project Representative	N'situ Pelende SASU
Project Participants and any communities involved	OSIPE asbl, villages in <i>groupement</i> Swa Kasongo, Swa Yamfu, Swa Kahumba and Kobo
Host Country (ies)	Democratic Republic of Congo
Activity Requirements applied	<input type="checkbox"/> Community Services Activities <input type="checkbox"/> Renewable Energy Activities <input checked="" type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A
Scale of the project activity	<input type="checkbox"/> Micro scale <input type="checkbox"/> Small Scale <input checked="" type="checkbox"/> Large Scale
Other Requirements applied	
Methodology (ies) applied and version number	METHODOLOGY FOR AFFORESTATION/REFORESTATION (A/R) GHGs EMISSION REDUCTION & SEQUESTRATION V2.0
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A
Project Cycle:	

- | |
|---|
| <input type="checkbox"/> Regular |
| <input checked="" type="checkbox"/> Retroactive |

Land-use & Forest Key Project Information¹

Scope:	<input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Agriculture
Silvicultural system:	<input checked="" type="checkbox"/> Conservation (no use of timber) <input type="checkbox"/> Selective Harvesting <input type="checkbox"/> Rotation Forestry
Project Area (ha):	10,656 ha
Eligible Area (ha):	10,556 ha
10% Set Aside Conservation area (ha):	1,066 ha
Evidence that Project Area Boundary is clearly distinguishable in the field:	SwaKahumba_Kobo.shp, SwaKasongo.shp
Planting Area	3,991 ha SwaKasongo.shp 6,656 ha ; SwaKahumba_Kobo.shp,
How many Modelling Units (MUs) are included in the eligible area:	2 Swa kasongo: 3,991 ha Swa Kahumba and Kobo: 6,665 ha
Summary of New Areas added (copy and insert as needed):	
Size (ha):	
Date Added	

¹ Please refer to Appendix 3 for detailed information on LUF projects

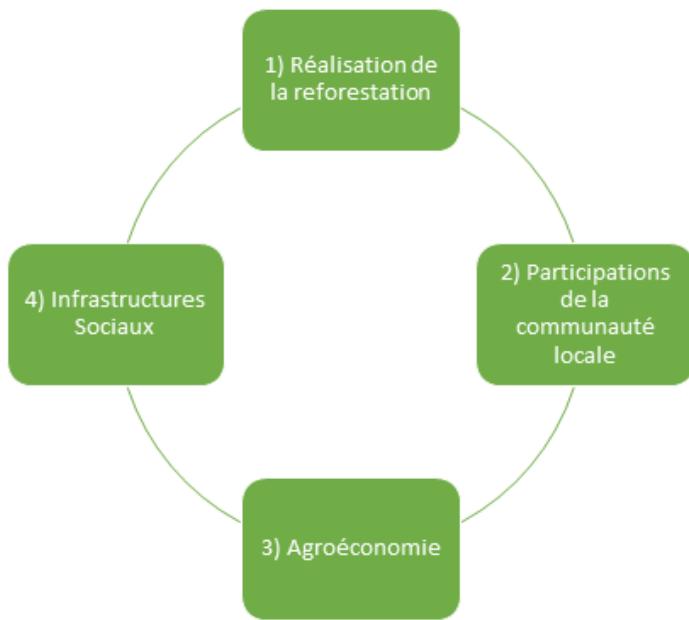
Table 1 – Estimated Sustainable Development Contributions

Sustainable Development Goals Targeted	SDG Impact (defined in B.6.)	Estimated Annual Average	Units or Products
13 Climate Action (mandatory)		86,971	VERs
2 zero hunger	Revenue of smallholders agrobusinesses	> 1	Franc Congolais or dollar
3 good health and well being	Number of medical centres with improved facilities	1	Number of medical centres
4 quality education	Number of schools with improved facilities	2	Number of schools
8 decent work and economic growth	Number of (self-) employed people	1200	FTE
15 life on land	Number of hectares with biodiverse forest	10,000	ha

SECTION A. DESCRIPTION OF PROJECT

A.1 Purpose and general description of project

>> N'situ Pelende is an afforestation project funded by Colruyt Group ('the company') and located in the Democratic Republic of Congo, North-East of Kenge, capital of the Kwango province. Goal of the project is on one side to offset the company's remaining emissions and on the other hand to sell offsets to third parties. The forest is planted eyeing both CO₂ sequestration and biodiversity. Apart from forestry activities (P1), the project also aims to collaborate with the local communities (P2), develop low-carbon economic activities (P3) and provide infrastructure for the local communities (P4).



The forest will be planted (P1) aiming to improve biodiversity in an area of 10,656 ha. A list of 20 tree species has been selected. It contains a mix of fast-growing plantation species and slow growing forest trees, including as many endemic tree species as possible. The project area has not had forest since at least 1985, but secondary forest has been preserved in the forest galleries (*galleries forestières*) in the river valley. Due to the frequent man-made fires the project area would remain open under a baseline scenario.

We keep intense contact with the local population (P2) in relation to all project activities. The focus is to prevent forest burning through educating people about controlled fire, as slash and burn is the traditional way of agriculture. 12 brigadiers are permanently guarding the forest (P1), go in conversation with the local population to prevent forest fires and will be equipped to extinguish forest fires. Also, the implementation of economic activities for smallholders (P3) and correct use and maintenance of the social infrastructure (P4) is envisioned.

In the long run, we will promote local economic activities to able income for the local population (P3). The ratio behind that is that afforestation activities mostly provide temporary jobs. By promoting local economic development, we can provide sustainable employment. Local employment prevents deforestation as people will no longer depend only on income from unsustainable exploitation of the Savannah and *galleries forestières*. Different economic branches will be developed at different scales. We will be

investigating -hierarchy magnitude- among others, the culture and sale of honey, fruit and fruit juices, fish culture, sustainable charcoal and manioc flour.

A '*Cahier des Charges*' was set in place following negotiations with the local communities. In exchange for the land, we will provide community infrastructure (P4), among which a bridge over the Konzi river, manioc mills for the villages, two schools and a medical center.

A.1.1 Eligibility of the project under Gold Standard

>> The project is eligible under Gold Standard Activity requirements, impact quantification Methodologies, and Product requirements, as demonstrated below and in sections B and C.

The project meets the general eligibility criteria:

- a) Eligible project types are Afforestation & Reforestation Projects (A/R) and Agriculture Projects (AGR).

The project concerns an afforestation project with conservation forests

- b) No Deforestation: The eligible area shall not meet the definition of forest 10 years before project start date and at project start date.

Satellite data and aerial images show the area was not covered by forests at least since December 1985 (results not shown). Forests are limited to the galleries in the river valleys. Figure 1 and 3 show how the project area was mostly free of trees in 2020 (1 year before the project start) and in 2010 (10 years before the project start date)

The analysis of the remote sensing data has been done on Landsat images from 10 years before the project and from one year before the project. The Landsat 7 images are of lesser quality and show gaps.

The NDVI was calculated for the satellite imagery and the tree/non-tree area was defined based on the NDVI and known forested sites in the project area. In *Figure 1 and Figure 1 and 2 Above: the tree/non-tree analysis in 2010 in the project area. Red pixels (30m) are forested area within the project area and can be found in the northwestern parts of Swa Kasongo. Below: the tree/non-tree analysis in 2020 in the project area (one year before the project). Red pixels (30 m) show forested areas in the north-east part of Swa Kasongo. The background is based on 2020 NDVI-values. The forest galleries in the river valleys show up dark green-blue, whereas the savannah grasslands are light green-yellow. Orange areas show fire scars from a recent burn.*

the NDVI was calculated for the project area and a tree/non-tree analysis was done. Tree areas within the project area are highlighted in red whereas non-tree areas are transparent and show the NDVI colour.

Table 2 satellite imagery sources

source	date	path	row	resolution
Landsat 7	25/04/2010	180	63	30 m
Landat 8	05/10/2020	180	63	30 m

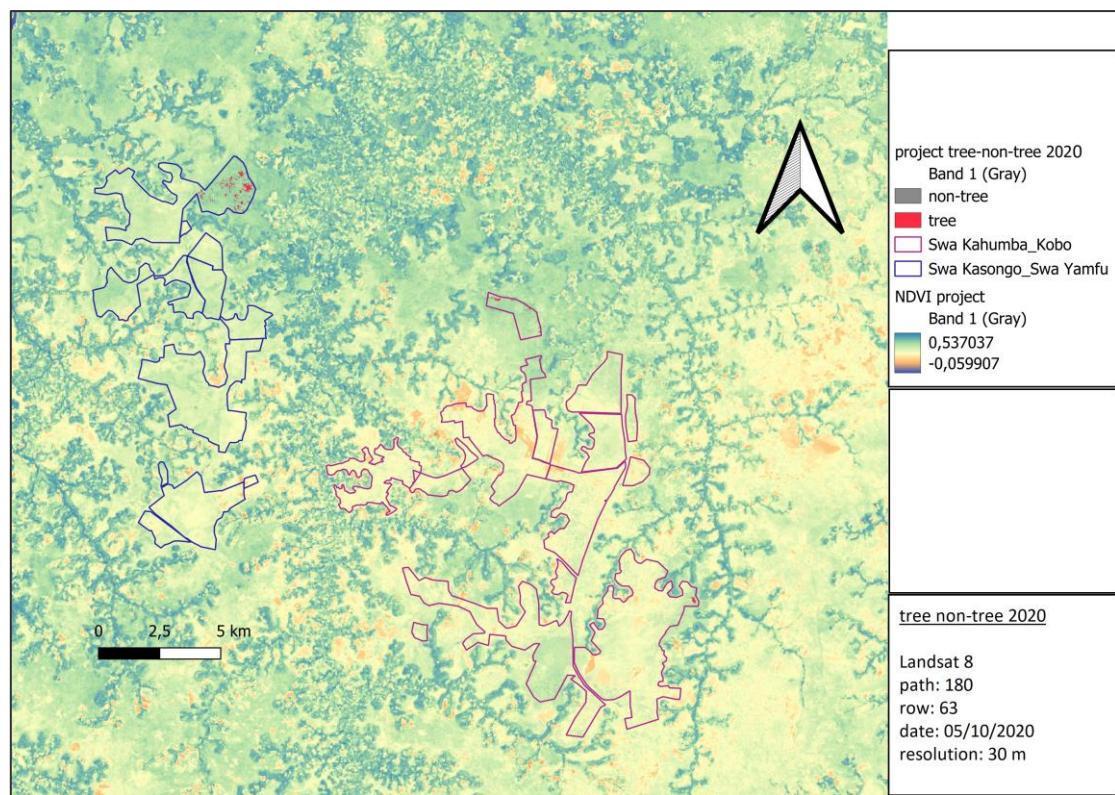
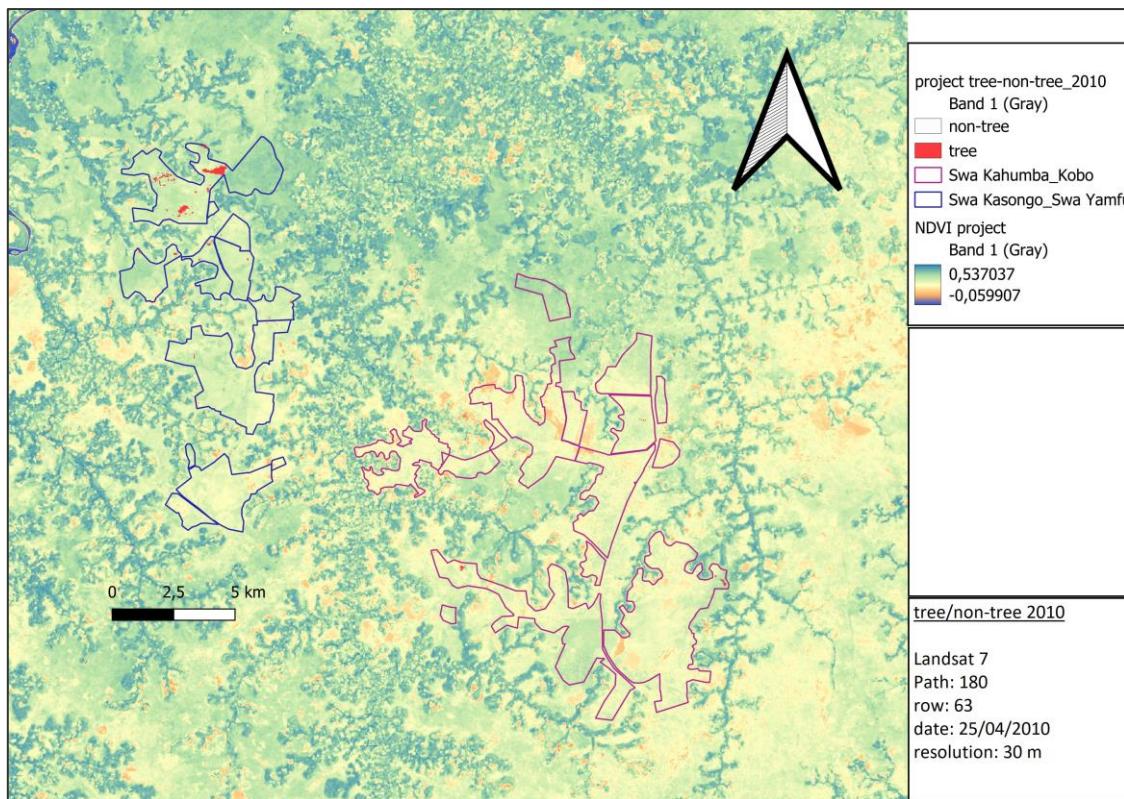


Figure 1 and 2 Above: the tree/non-tree analysis in 2010 in the project area. Red pixels (30m) are forested area within the project area and can be found in the northwestern parts of Swa Kasongo. Below: the tree/non-tree analysis in 2020 in the project area (one year before the project). Red pixels (30 m) show forested areas in the north-east part of Swa Kasongo. The background is based on 2020 NDVI-values. The forest galleries in the river valleys show up dark green-blue, whereas the savannah grasslands are light green-yellow. Orange areas show fire scars from a recent burn.

Based on the tree coverage and non-tree coverage, the eligible area was defined. Red pixels in the figure below are excluded from the eligible area. Finally, also roads crossing the project area have been distracted from the eligible area.

Table 3 area count for forested area in 2020 (1 year before project start) and in 2010 (10 years) before project start. And the final eligible area.

	date	total area (ha)	tree area (ha)	percentage tree coverage	total eligible area (ha)
2020	05/10/2020	10,665	33.5	3.1%	
2010	25/04/2010	10,665	56.3	5.3%	
project		10,665	100.5		10,555

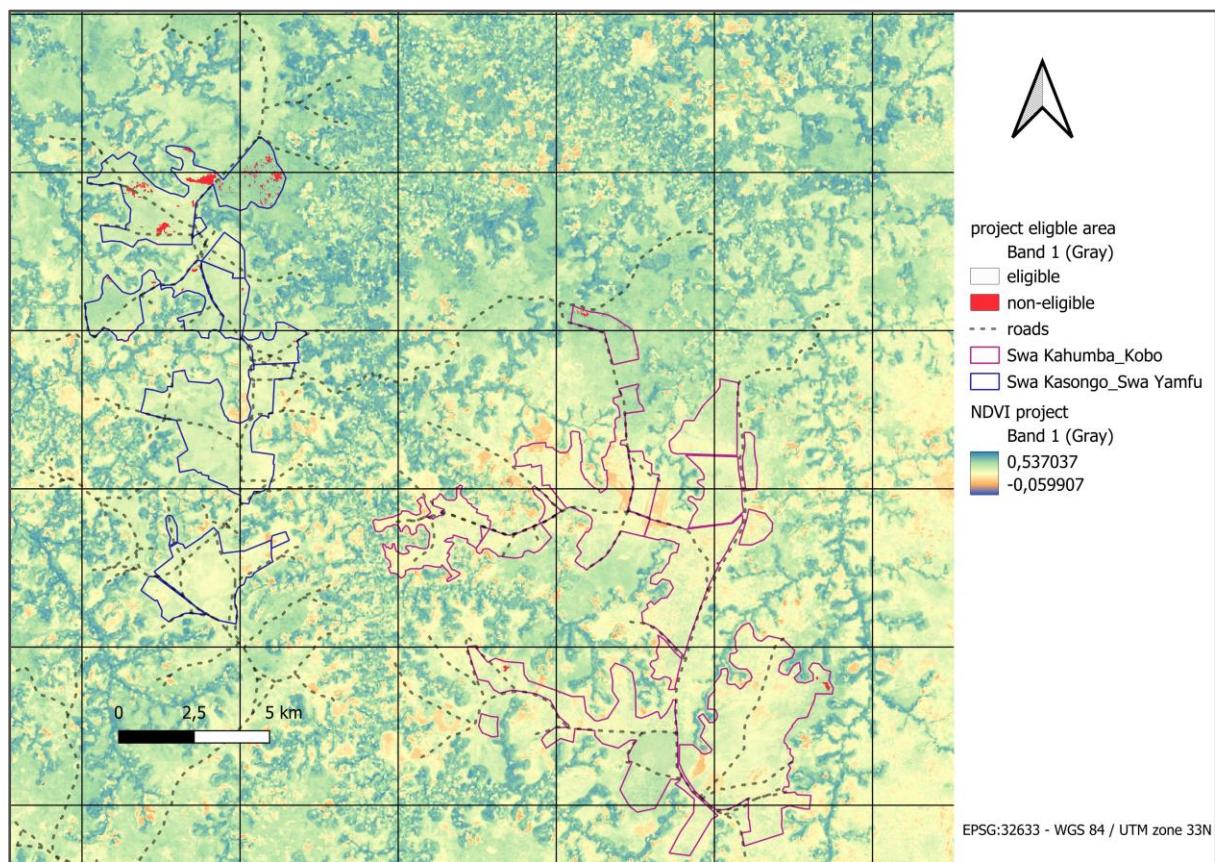


Figure 3 the eligible area for the project. Red pixels contain forest in 2010 or 2020 and are excluded from the eligible area. The background is based on 2020 NDVI-values. The forest galleries in the river valleys show up dark green-blue, whereas the savannah grasslands are light green-yellow. Orange areas show fire scars from a recent burn.

- c) In the case when the project area has been deforested during the last 10 years prior to project start date.

Not relevant

- d) Projects can be implemented in any country. If projects are located in a country or state that has an operational mandatory national or pan-national cap-and-trade scheme to reduce greenhouse-gas (GHG) emissions, and hereby accounts for its own land-based activities under its national or subnational accounting, then projects seeking GSVERs shall conform to the GHG Emissions Reduction and Sequestration Product Requirements - Annex A Double Counting Requirements.

The Democratic republic of Congo has no cap-and-trade system. The request of the vice prime minister of the DRC to make this project part of the 1 billion tree strategy has been declined to avoid double counting.

(a) FSC dual certification

Not relevant without selective harvesting

(b) Secured Titles

- a) Name and contact details

Colruyt NV, naamloze vennootschap, geregistreerd in de Kruispuntbank van Ondernemingen (KBO) met ondernemingsnummer 0400.378.485. Adres: Edingensesteenweg 196, 1500 Halle, Belgium.

N'situ Pelende SASU, formerly known as CODEVCO I RDC SASU, Société commerciale de droit Congolais, enregistrée sous le RCCM : 21-b-01787 Id. Nat. 01-f4300-N84145Y NIF. A2169038Q

Société par actions simplifiées unipersonnelle Siège social : Immeuble infinity Center N°17C avenue Pierre Mulele (ex 24 novembre), commune de Gombe, ville-province de Kinshasa

+ 32 478 339115

j.theys@codevco-rdc.com

(c) New area Certification

Not yet relevant

The project meets the eligibility criteria of A/R-projects

Principle 2 – safeguarding Principles and requirements

The complete plantation follows the principles of High Conservation Value.

- Native trees in the concessions are respected by not planting on lands with many trees on them. When some trees do occur on the plantation, the tractors drive around them during ploughing.
- The Savannah grasslands are connected in the North-South direction and split up by the river valley of the Konzi that has a wet tropical forest vegetation. Endangered species in the region are the pangolin and a species of chameleon that keep up in the forest galleries. The plantation is limited to the Savannah grasslands uphill, and the forest galleries remain untouched. By not planting on the steeper hills in the transition of the river valley, the Savannah grasslands remain connected by a border of grasslands surrounding the plantation North-South.
- All plantations are residing on the plateaus and remain away from the river valley, respecting buffer zones with water courses.

Principle 3- Stakeholder inclusivity Stakeholder consultation was conducted before the project start date as shown in the Stakeholder consultation document.

Principle 4 Demonstration of real outcomes: all criteria are respected as demonstrated in section B and C

Principle 5 Financial additionality is demonstrated in the additionality criteria B.5

The project is not registered under any other voluntary or compliance scheme

The Project developer confirms that the project is not registered with any other voluntary or compliance schemes.

The project is not located in a host country that has an emission reduction cap enforced

The Democratic republic of Congo has no cap-and-trade system.

The project is in compliance with applicable Host country's legal, environmental, ecological and social regulations

- Environmental

The DRC's framework law on the environment requires that any development project or any activity, particularly agricultural, forestry or other activity likely to have an impact on the environment, be subject to a prior environmental and social impact assessment (Art. 21 of Law No. 11/009 of 9 July 2011 on the fundamental principles relating to environmental protection). This is what justified the need for the N'situ Pelende Project to carry out an environmental and social impact assessment of its 12 million hectare plantation project. This environmental and social assessment document can be consulted on request.

- Ecological

During selection of tree species, we have excluded all invasive and potential harmful species. Tree species that are endemic to the region were preferred. All possible measures are set in place to secure the ecology of the region within the boundaries of the project.

The plantation contains one endangered species (*Millettia Laurentii*), eleven species are native and endemic to the region, ten species occur more widely in the tropical zone and are naturalized in the region.

- Social

The project respects the social regulations of the DRC, in particular the application of labour and social security laws.

Furthermore, Congolese legislation on forests and agriculture recognises the possibility for forestry and agricultural concessionaires to negotiate with local riparian communities for the realisation of certain basic socio-economic infrastructures for local development, alongside the development of forestry and agricultural projects in or around their territories. This approach has been used in the project resulting in pillar 4 social infrastructure.

A.1.2 Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project

>> Colruyt Group has:

- i. full and uncontested legal ownership of all Products that are generated under Gold Standard Certification (Where such ownership is transferred from project beneficiaries this must be demonstrated transparently and be discussed during local stakeholder consultations)
- ii. legal rights concerning changes in use of resources required to service the Project (e.g. water rights)
- iii. full and uncontested legal land title/tenure required to implement the Project (e.g. A/R projects, see LUF Activity Requirements)

The products generated by the project are the property of Colruyt Group. This is because they are generated on private land concessions owned by N'situ Pelende SASU, which is at its turn a 100% owned by Colruyt Group. Because the project will contribute to the creation of forests, the forestry code states that "natural or planted forests included in lands regularly granted under the land legislation belong to their concessionaire" (art. 8 DRC forestry code of 2002).

Therefore, the forests as well as the emission/carbon rights that will come out of this N'situ Pelende project will be the property of N'situ Pelende SASU of Colruyt group. The private land concessions are defined in a concession contract, emphyteusis contract, for *groupement Swa Kasongo*, *groupement Swa Kahumba* and *groupement Kobo*.

A.2 Location of project

>> The project is hosted by N'situ Pelende SASU, Société par actions simplifiées unipersonnelle. Siège social : Immeuble infinity Center N°17C avenue Pierre Mulele (ex 24 novembre), commune de Gombe, ville-province de Kinshasa RCCM : 21-b-01787 Id. Nat. 01-f4300-N84145Y NIF. A2169038Q

The forest is planted in the commune of Kenge in *Chefferie Pelende Nord*, 290 km East of Kinshasa, in the province of Kwango (figure 2). The activities are taking place at both sides of the Konzi river (figure 3), where the West side *groupement* is called Swa Kasongo and the East side *groupement* is called Swa Kahumba, supplemented by the *groupement* Kobo located between the above mentioned *groupements* and highway 1 (figure 4). N'situ Pelende SASU has a concession encompassing 10,656 ha of land in *groupement* Swa Kasongo, Swa Yamfu, Swa Kahumba and Kobo.

Project location: Village of Tembe, commune of Kenge. On the sandy road branching on the left from the route N01, at 296 km from Kinshasa (at village Douze Femmes).

GPS: 4° 36' 27.9392" S; 17° 12' 56.3375" E

The landscape consists of plateaus covered by Savannah grasslands (figure 5). The plateaus are carved out with deep river valleys that still contain forests. The degraded grasslands on the plateaus remain open by man-made fires during the dry season and are being grazed by mostly goats and cattle. Swa Kahumba, east of the Konzi river, is slightly bushier and contains some trees within the grasslands. The soil is a highly weathered ferralic arenosol (Jones et al., 2013. Soil Atlas of Africa).

In August 2021 the concession contract has been signed for two *groupements* Swa Kasongo and Swa Kahumba. In April 2023 the concession contract has been signed for *groupement* Kobo. In August 2023 a contract has been signed with *groupement* Swa Yamfu. See Stakeholder consultation for more info. Figure 3 shows the delineation of the area.

As the galleries forestières with rivers do not make part of the project area:

- Water bodies are excluded from the project area
- There are no protected areas within the project area
- There are no biodiversity areas within the project area

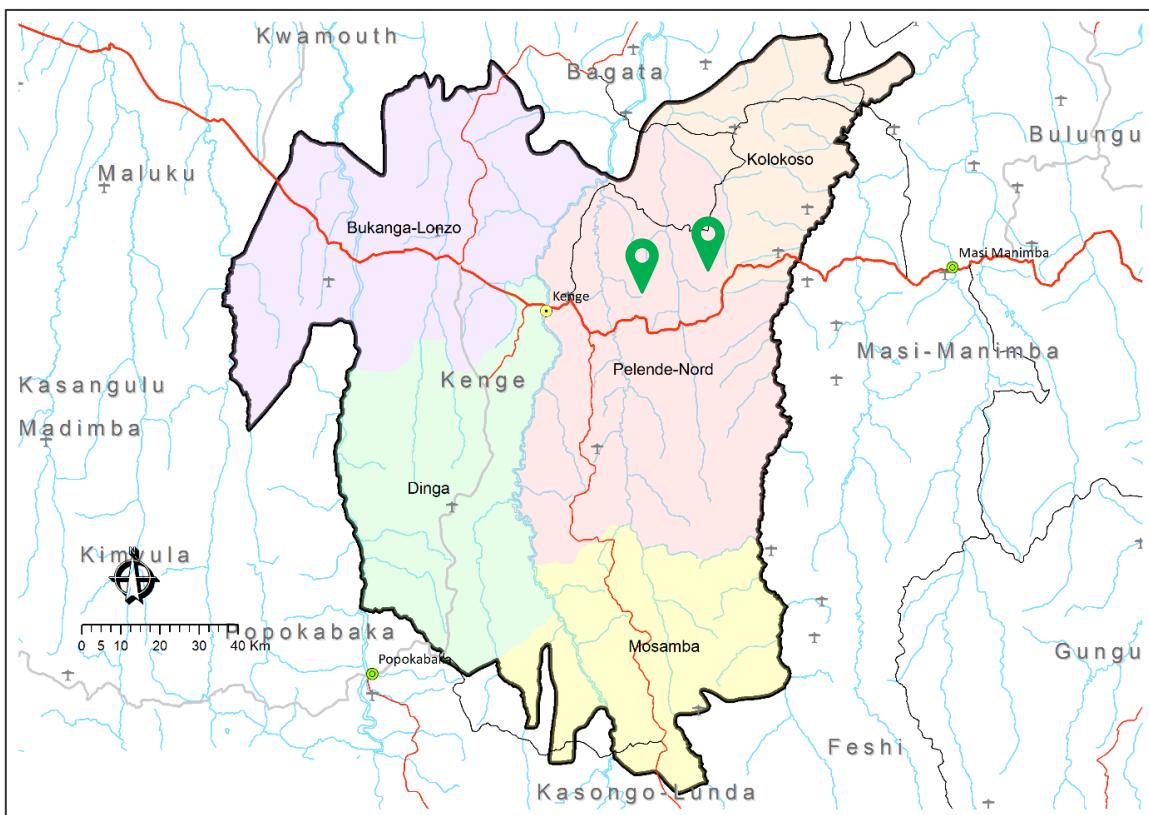
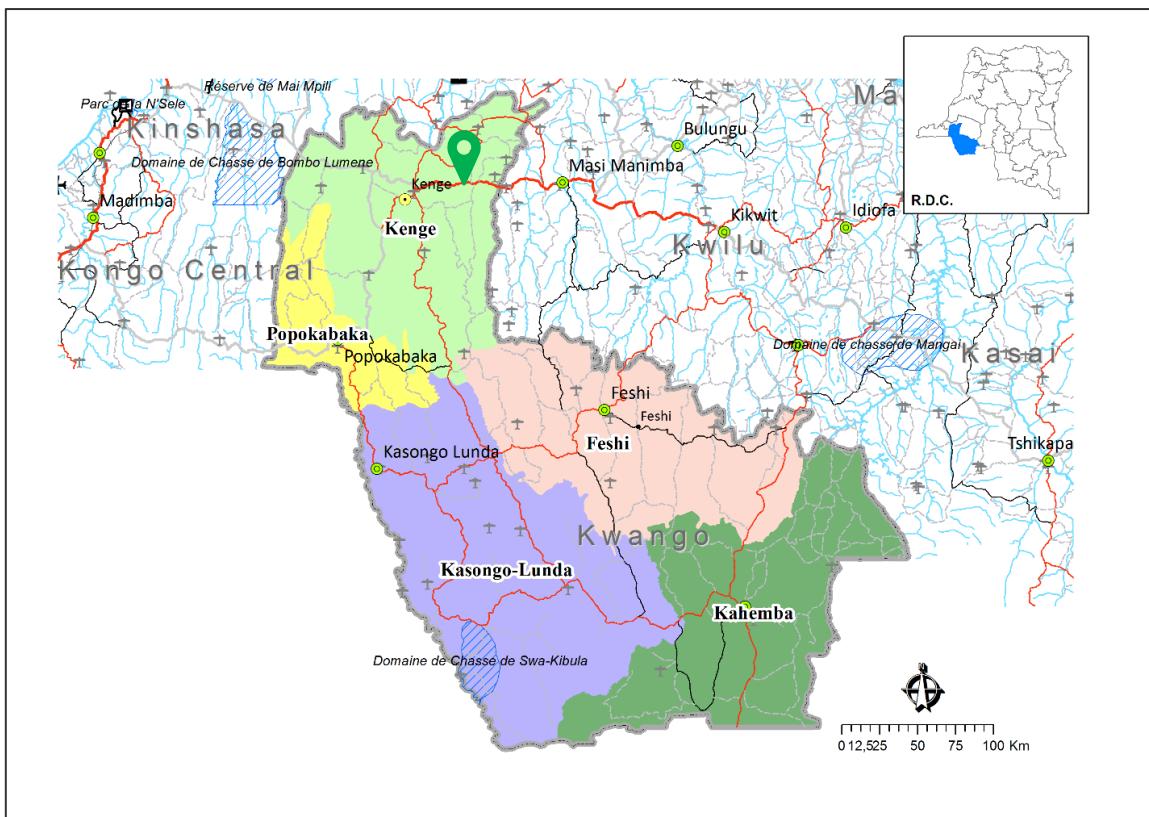


Figure 4 and Figure 5 geographic location of the project in the province of Kwango, in the commune of Kenge, chefferie Pelende Nord. Source: CAID, 2021.

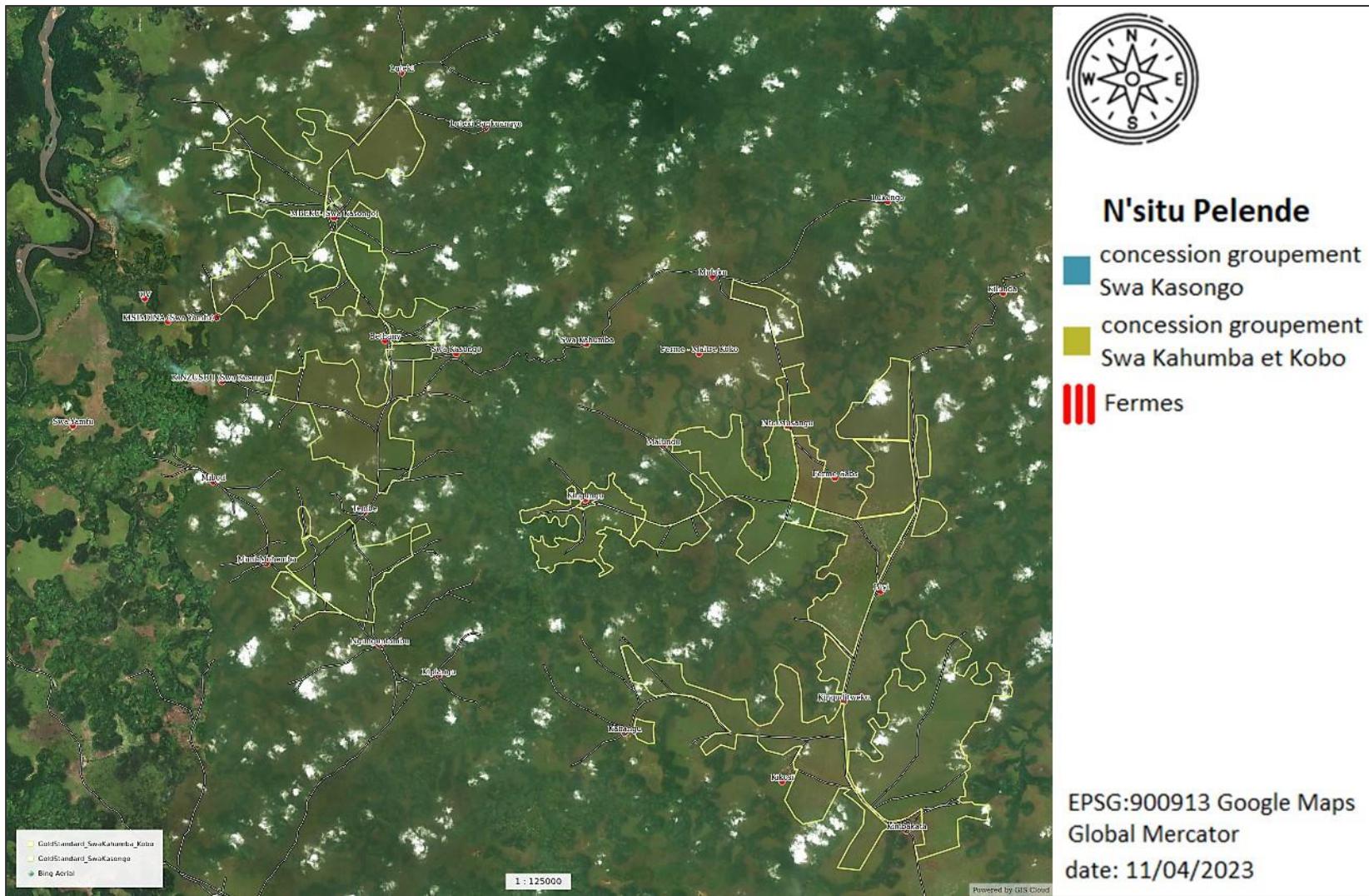


Figure 6 Delineation of the project N'situ Pelende for a total of 10,656 ha. West of river Konzi is *groupement Swa Kasongo* and *Swa Yamfu* with 3,991 ha, east *groupement Swa Kahumba* and *Kobo* with a total of 6,665 ha. GPS-location: 4° 36' 27.9392" S; 17° 12' 56.3375" E



Figure 7 the landscape and geographic location of the project near Kenge in the Kwango province.

A.3 Technologies and/or measures

P1 Tree nursery and planting

The West side of the project is called Swa Kasongo. Groupement Swa Yamfu lies adjacent to Swa Kasongo and is referred to as a part of the Swa Kasongo side. The East side is called Swa Kahumba. Both sides are managed by OSIPE. *Groupement Kobo* lies adjacent to *groupement Swa Kahumba* and is referred to as part of the Swa Kahumba side.

Swa Kasongo

The tree nurseries and plantation of Swa Kasongo in the first season (until March 2023) fell under the responsibility of the NGO CADIM and fall now under the responsibility of OSIPE. There were two tree nurseries (*pépinières*) set up in November 2021 that supported planting in the first season. One of them will be expanded and will be operated in the second season until March of 2024. The tree nurseries are named after the closest village.

- *Pépinière Bethany* (expanded)
- *Pépinière Tembe* (closed)

The plantation currently consists of 47 + 28 blocks (figure 5, situation 28/06/2023). These blocks are about 50 ha large. There are firebreaks between the blocks, called '*coupe-feus*'. The blocks A01-A53 have a total area of 1990 ha. The blocks D01-D19 in the Mbeku area have a total area of 1500 ha. Further demarcation is ongoing.

Swa Kahumba

The tree nursery and plantation of Swa Kahumba fall under the responsibility of N'situ Pelende SASU since September 2022 and will be operated by OSIPE going forward.

- *Pépinière Kingungu* (closed)
- *Pépinière Kimbakata*

The plantation currently consists of 55 blocks (figure 5, situation of 28/06/2023). These blocks are about 50 ha large. There are firebreaks between the blocks, called *coupe-feus*. The blocks B01-B40 have a total area of 1380 ha. The blocks C01-C12 have a total area of 658 ha. Further demarcation is ongoing.

Figure 6 shows an overview of P1 activities. Below, the land preparation, tree nursery and plantation are described in detail.

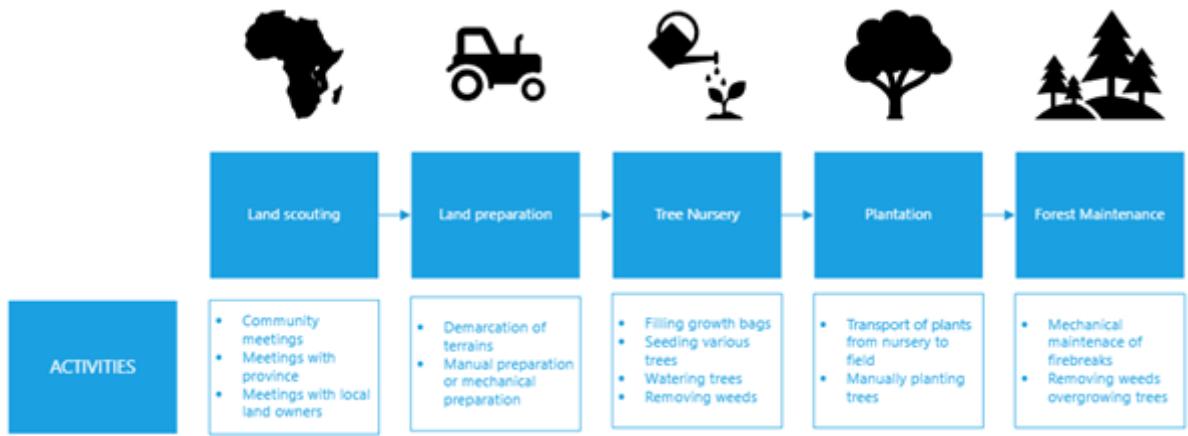


Figure 8 Overview of reforestation activities (P1)

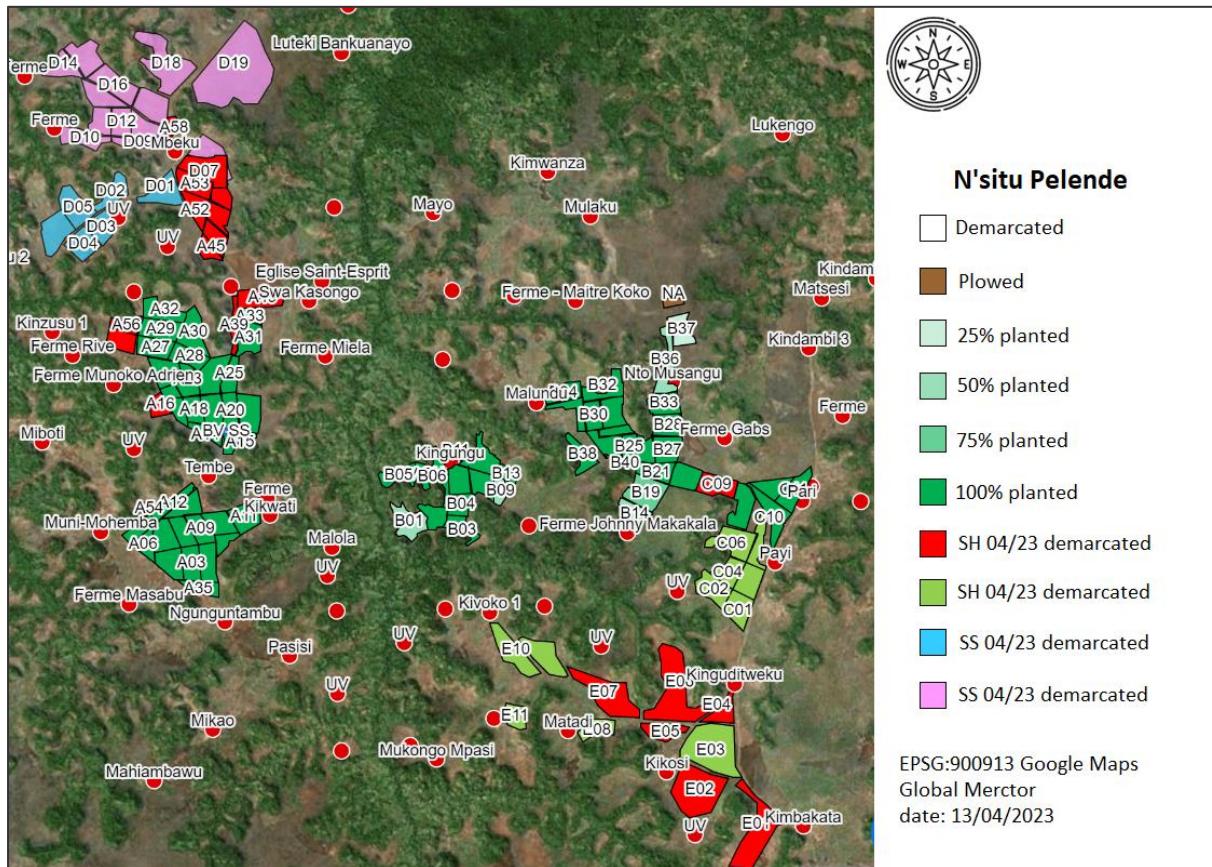


Figure 9 Demarcation of blocks. Blocks are demarcated in distinct phases A, B, C, D... Demarcation is ongoing in blocks E. Dark green blocks are fully planted. Light green is partially planted, brown is plowed (situation 13/04/2023). Red, light green, blue, and purple blocks are demarcated in April 2023, but not yet plowed. Between the blocks there are firebreaks (coupe-feu) of at least 10 m large.

Equipment

In order to organize the work, the following key equipment has been procured:

- A transporting truck used for moving plants from the nursery to the plantation

At the side of Swa Kasongo

- Four tractors with three ploughs at the side of Swa Kasongo
- A land cruiser at the side of Swa Kasongo
- Eight motorbikes at the side of Swa Kasongo
- Housing for the team in Swa Kasongo

At the side of Swa Kahumba

- Three tractors with plough at the side of Swa Kahumba
- A land cruiser at the side of Swa Kahumba
- Housing for the team in Swa Kahumba
- Six motorbikes at the side of Swa Kahumba

A list of equipment is kept in 23031_T3 EQUIPMENT INVENTORY.xlsx

Tree nursery (*pépinière*) (figure 8)

Tree nurseries function as follows, with functions divided as follows:

- Collecting and saving seeds. Obtaining decent quality various through purchase from third parties, but physical seed collection in the surrounding secondary forests under the management of the NGO remains an option. The seeds shall be temporarily stored without soil and under ideal temperature and humidity conditions. Obtaining and storing the seeds - until they are sowed in the nursery - is the responsibility of the NGO.
- Within the infrastructure, the NGO will sow the seeds in bags, trays, or pots with sufficient nutrients. Fertilizers can be used to promote growth, but only in consultation with N'situ Pelende SASU. The bags, tubs or trays containing the seeds will be watered sufficiently. Depending on the species' needs, the tree may also be grown in the shade. For disease control, pesticides may be considered in limited quantities and in consultation with N'situ Pelende SASU. Disease outbreaks must be contained and combatted in time.

- Delivery of viable, ready-to-plant tree seedlings in a pre-defined density of 1,260 seedlings/ha. The seeds should be cultivated until they reach a sufficient size and are viable (i.e., healthy, of minimum size, with an ideal root length for planting) with the aim of delivering them for planting.



Figure 10 Filled bags without seeds arranged in planches (upper left). Seeds of *Pentaclethra macrophylla* are sowed in big bags. A labeled *Maesopsis* bloc depicting species/sow date/amount of seeds and number of bloc.

Plantation

Trees are planted in a grid of 3 by 2.5 m using on average 1,260 plantlets per hectare. The plantation grid consists of plantation trees, pioneer trees and forest trees (table 2). The plantation trees are fast-growing trees that quickly sequester CO₂. They are alternated with short lived and long-lived pioneer trees (SLP and LLP) and forest trees. When fully grown, the plantation trees will make room for the pioneer and forest trees, that have a slower growth and contribute more to biodiversity. The list of tree species is given in table 2. When making up the selection of tree species, species with following characteristics were preferred:

- fast growing
- endemic to the region
- contribution to other uses, such as medical uses, edibility...
- ease of growing is evaluated in the tree nursery during the project.
- filling up a different place in the canopy layers

Before planting, the land is prepared by plowing with a tractor ('labourer') (figure 9). Plowing is done perpendicular to the slope if the land is sloped. If land is too sloped for the tractor, the land is either left untouched (Swa Kasongo) or plowed manually (parts of Swa Kahumba). When trees occur on the lands, the tractor must plough around the trees. A few weeks after ploughing the trees from the nursery are planted manually ('planter').

After planting, the land is manually weeded once or twice with a hoe ('sarlage'). The date of ploughing, start date of planting, end date of planting and dates of weeding, as well as the species of trees that have been planted, are registered per block by the NGO on paper and by the project host (N'situ Pelende SASU) digitally in GIScloud and excel files. Documents and communication between the NGOs and N'situ Pelende SASU are in French.

Table 4 List of trees used in the project. Swa Kasongo and Swa Kahumba refers to the tree species that have been planted in the project area. Tree type: SLP short lived pioneer, LLP long lived pioneer, ST fruit tree ('safoutier'). Shrubs are 5-20 m, under canopy 10-30 m, main canopy 20-40 m and emergent 40-50 m.

Species Overview & Codes					
Swa Kasongo Species name	Swa Kahumba Species name	Code	origin	forest layer	type
Acacia mangium	Acacia mangium	Ac	exotic	under canopy	plantation
Acacia hybrid (mangium x auriculiformis)	Acacia hybrid (mangium x auriculiformis)	Acx	exotic	under canopy	plantation
Maesopsis eminii	Maesopsis eminii	Ma	local	main canopy	plantation
Cassia siamaea	Cassia siamaea	Ca	local	under canopy	SLP
Albizia lebbeck	Albizia lebbeck	All	local		
Albizia chinensis	Albizia chinensis	Alc	local		
Pentaclethra etveldiana	Pentaclethra etveldiana	Pe	local	under canopy	LLP
Harungana madagascariensis	Harungana Madagascariensis	Ha	local	shrub	SLP
Schizolobium parahyba	Schizolobium parahyba	Sc	exotic	emergent	plantation
Miletia laurentii	Miletia laurentii	Mi	local	main canopy	LLP
Canarium schweinfurthii	Canarium schweinfurthii	Cn	local	emergent	LLP
Milicia excelsa	Milicia excelsa	Mc	local		
Ricinodendron heudelotti	Ricinodendron heudelotti	Ri	local	main canopy	LLP
	Hevea brasiliensis	He	local		
	Leuceana leucophyla	Le	exotic	shrub	plantation
	Piptadeniastrum africanum	Pi	local		
	Artocarpus Heterophyllus	Ts	local		
	Terminalia superba	Te	local	emergent	LLP
	Uapaca heudelotti	Ua	local		
Safoutier	Dacryodes edulis	Sa	local	under canopy	ST
	Cassia floribunda	Cf	local		



Figure 11 Land preparation and planting

Fire prevention

Around and between all blocks, there are firebreaks ('coupe-feus') to prevent fire from entering and spreading from one block to the other. In P2 activities there is a plan for sensitization to the local community. When good traditional reasons to set fire are brought up by local communities, we promote controlled fire instead of simply forbidding it.

There are three types of firebreaks:

1. A firebreak of at least 10 m between all blocks of about 50 ha. Indicated in blue in figure 10.
2. A firebreak of at least 15 m surrounding the planting area. Indicated in yellow in figure 10. This will stop external fires from farmers in the forest galleries near the river to spread to the plantations uphill.
3. Roads crossing the plantations have firebreaks of at least 10m at each side, indicated in red in figure 10.

Maintenance of the firebreaks is done at least yearly to prevent it from overgrowing. Maintenance can be done manually ('sarclage') or using a tractor, lastly, combining with agriculture is possible to maintain those firebreaks.

12 guards (*brigadiers*) are watching over the plantations and the surrounding villages (figure 11). Their task is to watch out for fire or any other danger to the forest and accompany neighboring.

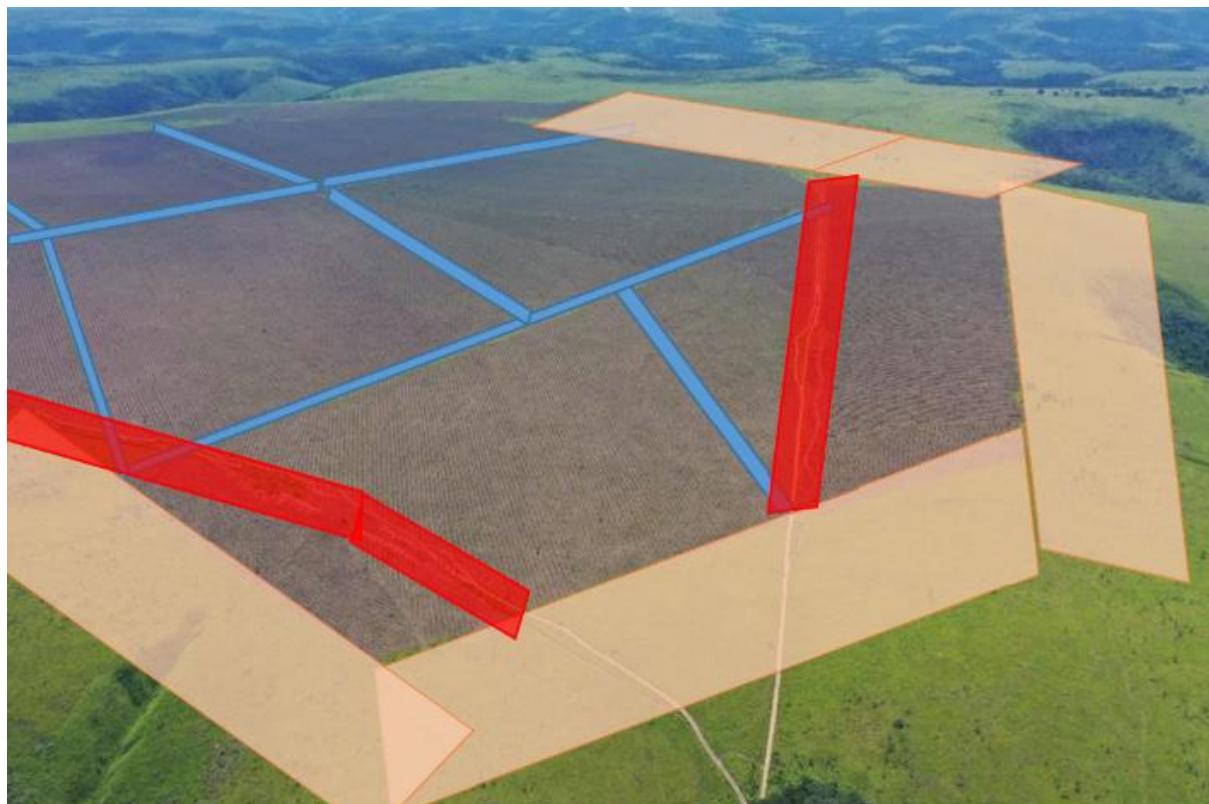


Figure 12 Demarcations of the firebreaks (coupe-feu): in blue between blocks of +- 50 ha (10 m), in red along the roadsides (10 m) and in yellow at the surrounding the planting area (15 m)



Figure 13 Brigadiers keep man-made fires under control.

P2 Participation with local communities

We want to establish a durable relationship with the neighboring local communities. We established a close collaboration with a dozen villages in and near the project area. Moreover, during the negotiations for land we agreed on a '*Cahier des Charges*', a list of social infrastructure projects that we will execute over the concession period for the local communities. The follow-up for this infrastructure is also part of P2.

The project also has a communication plan.

Sensibilization activities. Continuous collaboration with all those villages goes through sensitization. We regularly gather the local communities around different themes with our community managers to sensitize them on different subjects, like the importance of a forest, transparent organization, fire prevention, creation of local cooperatives, ... But more importantly, they give us feedback on the project, teach us on how to better approach the project in a local way and inform us on the local challenges they face every day.

Fire prevention 12 guards (*brigadiers*) are watching over the plantations and

the surrounding villages. They will also sensitize the community about fire and controlled fire.

Follow-up on social infrastructure the project also provides social infrastructure as negotiated with the communities in the '*Cahier des Charges*'. Whereas the construction of this social infrastructure is part of P4, the follow-up on it is in collaboration with the local communities. Manioc mills were such gifts to the villages shared among the villagers. We installed those mills, trained the communities technically to use them and instruct them on a transparent management system, but the mill management (purchasing fuel, maintenance, revenue management ...) is in the hands of the community. We follow up and support closely to ensure that everything goes smoothly.

In P3 (see below), we want to develop local economic activities that provide a sustainable income for the local population in the long term, to help prevent unsustainable forest exploitation. P2 assists and takes responsibility for the preparation of the villagers by promoting entrepreneurship and small-scale businesses within the local communities. This can be through sensitization sessions, support on local poultry and animal breeding management, distribution and follow up of fruit trees or organizing harvest and sale of manioc.

The exact approach and planning of P2 activities are continuously reviewed to match the local reality and challenges to face. The planning is adjusted 2 to 4 times per year. An example of P2 activity planning is given below.

Communication plan

There is a communication plan to inform the local communities about the progress of the project. This is summarized in table 2.

Communication of the principles of the project N'situ Pelende:

The principles of the project are communicated to the local community of Pelende through different channels and means. The project 'N'situ Pelende' literally means 'the forest of Pelende'.

Below are several key points or ground rules that can be used in different communication campaigns.

1. N'situ Pelende is the future lung of DRC and the planet;
2. No burning or cutting in the project;
3. N'situ Pelende and *Chefferie Pelende Nord* have signed agreements and a schedule of conditions;
4. The hierarchy of the organisation is respected
5. Everyone is respected in the project, your neighbors, your brothers, your chiefs, ...;
6. The forest provides work and improves your health
7. The one who engages in the project will be rewarded;

	Week 36	Week 37	Week 38	Week 39	Week 40	Week 41	Week 42	Week 43	Week 44	Week 45	Week 46	Week 47	Week 48	Week 49	Week 50	Week 51	Week 52
	sept-22			oct-22				nov-22				déc-22					
	Incinérer son champ			Plantation des safoutiers				Animaux en divagation				Organisation des producteurs selon les filières de production existantes (coopérative)					
1. Sensibilisation				4 villages		4 villages		4 villages SS		4 villages SH		4 villages SS		4 villages SH			
				R			R				R			R			
2. Suivi moulins	SS	SH	SS	SH	SS	SH	SS	SH	SS	SH	SS	SH	SS	SH			
			Cross training 3 côté SS et 2 côté SH			Aux endroits ou cross training fonctionne pas --> Gestion privative				Suivi		Suivi		R			
		R		R		R					R			R			
3. Distribution safoutiers	Analyse des intérêts		Commu & distribution 2 villages + 2 fermiers (Bethanie + Sua Kassongo)	Commu & distribution 2 villages + 2 fermiers (Tembe & Kinzusu)	Commu & distribution 2 villages + 2 fermiers (Kingungu & Malundu)	Suivi plantation				R				R			
		R	R	R	R	R											
4. Suivi brigadiers	Suivi et planning hebdomadaire										R		R		R		
		R			R												
5. Filière manioc			Récolte de manioc et vente à Kenge)		Identifier les personnes filière manioc (2 villages * 10ha)		Distribution bouture manioc		Suivi plantation des villageois				R				
			R		R	R											
6. Idée: Gestion des animaux													Installation clôtures animaux?				

Figure 14 Example of the planning of P2 activities

Table 5 Communication plan for N'situ Pelende

Description	Content	Responsible	Means of distribution	Frequency
The principles of N'situ Pelende	7 basic rules	N'situ Pelende SASU + community manager	Schools, medical centres, <i>chef de village</i> , village meetings	Once, with notice
Pancartes N'situ Pelende	Naming of the different forest areas, agricultural areas and infrastructure places	N'situ Pelende SASU	On the road at every entrance of the concession and specific places like schools/health posts/agro area...	Once
Bi-monthly communication plan	Communication rules, what can be communicated to the local community in the fields by different stakeholders	N'situ Pelende SASU	NGOs, Community Dynamic Consultants, Grand Chief, SMEs, CG staff	Every 2 months
Bi-monthly newspaper/gazette	A one pager with some photos and news about the project	N'situ Pelende SASU	Display pancarte in villages, in schools, health posts, etc.	Every 2 months
General awareness & sensibilisation	Project goals, sustainable practices, importance of long term forest, ...	N'situ Pelende SASU & community manager	Sensibilisation session & brigadiers	Continuous
Radio broadcasts	Jingle N'situ Pelende – N'situ Pelende song with 'basic rules' or other important info (fire prevention)	N'situ Pelende SASU	Regional radios	Ad hoc with focus on dry season

P3 Agro-economic activities

After the planting phase, the reforestation work and employment of the local population will decrease significantly. The decrease in employment is a significant risk for the project as people might exploit the forest to compensate for the income loss. Therefore, we aim to develop agroeconomic activities. Different pilots, from small to large scale, will be developed and grow into '*filières*'.

Our vision:

"Providing sustainable revenue streams to the local population in order to protect our forest in the long term."

Our mission:

"Creating profitable agricultural sectors (*agro-filières*) that will encourage local entrepreneurship and economic development to provide sustainable incomes to the local population and help them become the protectors our forest."

The strategy:

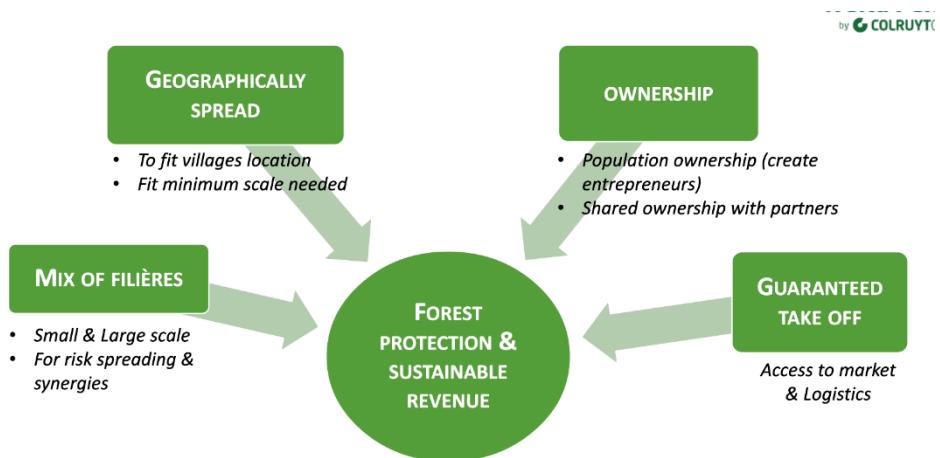


Figure 15 Strategy for development of agro-economic activities

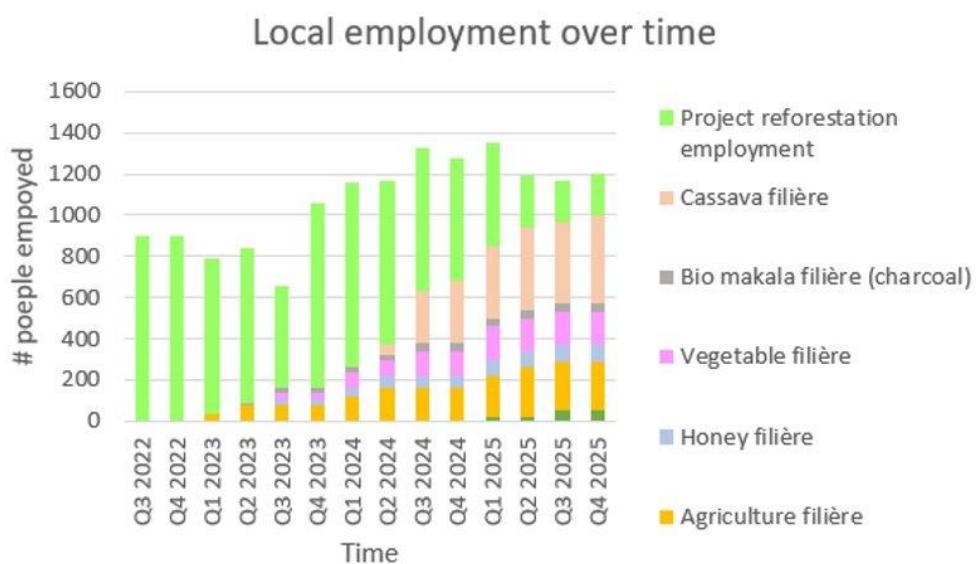


Figure 16 Estimated employment in plantations and agro-economic businesses.

Sensibilization phase

In collaboration with P2 activities, the first phase of P3 consists in sensitizing the population about the importance of entrepreneurship in local development. This phase goes through diverse types of sensitization sessions and training about entrepreneurship, cooperative management, local committee management, and sustainable & transparent money management.

Small scale - Pilot project phase

Once the local community is sensitized and motivated, local people have the basic tools to participate in one of the small-scale pilot projects launched in the concession.

The largest burden to start a small-scale business is the lack of market access. Even though demand and prices are much higher in the cities Kenge and Kinshasa, farmers in the rural areas are not aware of these price differences or cannot access those markets. The transport of goods to the cities is irregular and dealers exploit the farmer's lack of price awareness, giving them low prices for their goods.

The project will tackle those burdens by setting up a structure that supports the local entrepreneurial production of agricultural goods like honey, vegetables, manioc, beans, maize... and invest in transport solutions to ensure the local communities market access and fair prices. If any profit is made from those activities, everything will be reinvested in the '*agrofilières*' to expand existing once or create new '*filières*'.

Example of small-scale pilot project:

We trained a group of 80 farmers in 2 different villages that all received 1 ha to plant their seeds of manioc, beans, and maize. Those agricultural areas are along the roads and next to our forest to play an active role in forest protection by preventing fires. We train and support the population with land preparation and access to expertise so that they can increase their production levels. At the time of harvest, we help them with transport to access the different markets in Kenge and Kinshasa and so help attain fair prices.

Large scale

Setting up different small-scale pilot projects helps us gain knowledge and local expertise on all those local '*agrofilières*'. If a '*filière*' proves to be viable and has larger scale potential, we will perform viability studies and large-scale business plan to evaluate the possibility to invest further to expand that '*filière*'. This study and plan will be made in collaboration with experts and external partners of those '*filières*'.

P4 Social infrastructure

During the concession negotiations for land, the local communities were afforded the opportunity to formulate wishes for social infrastructure. This has been made explicitly in the '*Cahier des Charges*' (table 3). For more information about how this '*Cahier des Charges*' came to be, see stakeholder consultation.

Table 3 Social infrastructure foreseen in the 'Cahier des Charges'

Social infrastructure	Groupement Swa Kasongo	Groupement Swa kahumba
Manioc mills	6	5
Primary and secondary school built with long-lasting materials	2	2
Medical center built with long-lasting materials	0	1
Bridge between groupements Swa Kasongo and Swa Kahumba		1

Impact of the social infrastructure

*Manioc mills: Women will be able to save time processing manioc through the help of the mills.

*Schools: The improved infrastructure for the school will allow for better education. Currently lessons are interrupted because the roof needs replacement after a storm (figure 15).

*Medical center: The improved infrastructure for the health center in the area will allow for better health care (figure 16).

*The bridge between *groupements* Swa Kasongo and Swa Kahumba (figure 14) creates a better connection and will allow for trade between the areas. Reach destinations, e.g., local markets faster, with less fuel and in safer conditions.



Figure 17 Construction of the bridge over the river Konzi between the *groupement* Swa Kasongo and Swa Kahumba



Figure 18 The current state of the infrastructure of the schools. To be improved by the project



Figure 19 The current state of the infrastructure of the health center. To be improved by the project

A.4 Scale of the project

>> Large scale: 10,656 ha

A.5 Funding sources of project

>> The project does not receive any public funding or subsidies.

The project is fully funded by Colruyt Group. Colruyt Group is a large group of food and non-food retailers and several other services based in Belgium, France and the Netherlands. The headquarters are based in Halle, Belgium. In 2021 the group decided to offset their own emissions by planting a forest in the DRC.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

>> METHODOLOGY FOR AFFORESTATION/REFORESTATION (A/R) GHGs EMISSION REDUCTION & SEQUESTRATION V2.0

Option 1 - Conservation Forest

>> The Soil organic carbon pool will be included using the A/R soil carbon-tool

Baseline scenario

The baseline scenario is conservatively set as static, without emissions. The tree and grasses biomass in the Savannah have been measured to set the baseline.

Project scenario

Tree measurement will consist of classic tree measurements combined with modelling. The following parameters will be noted per tree: diameter, height, species, mortality, and disintegration. The project area is divided into five parts where each is monitored every five years in a carousel. For each MU at least 4 plots will be monitored, based on statistical power analysis using R. During the first years, plots will be 20 x 20 m square, until trees have reached a diameter of 20 cm then plots will be 35 x 35 m.

Soil organic carbon will also be included in the project scenario using the A/R soil carbon tool. We are starting from severely degraded grassland (caused by frequent manmade fires in the area) on sandy soils in the tropical moist climate zone.

Leakage

- (a) collection of wood (for firewood, charcoal, etc.) Not included.
- (b) timber harvesting Not included.
- (c) agriculture (crop cultivation, shrimp cultivation, etc.) Not included.
- (d) livestock Not included.

Other emissions

A limited amount of ureum is used in the tree nurseries. Ureum use will be reported annually and 0.005 tCO₂ per kg of nitrogen (N) fertilizer shall be deducted.

B.2. Applicability of methodology (ies)

>> The methodology for afforestation/reforestation (A/R) GHGs emission reduction & sequestration v2.0 is applicable as this is an afforestation forest. Afforestation takes place on lands with mineral soils, no wetlands. The silvicultural system in place is conservation forests.

Planting of trees on land that does not meet the definition of a forest

The Savannah grasslands from the baseline scenario do not meet the definition of a forest.

Areas shall not be on wetlands

The soil is a well-drained ferralic arenosol classified as ARfI (Jones et al., 2013. Soil Atlas of Africa). The plantation is on the plateaus, at least 90 m more elevated than the nearest water source. The land is never saturated with water for longer than 4 hours.

Areas with organic soils shall not be drained or irrigated

The soil is a well-drained ferralic arenosol classified as ARfI (Jones et al., 2013. Soil Atlas of Africa). Hence it is not an organic soil, but a mineral soil. The land is never saturated with water for longer than 4 hours.

Soil disturbance (through ploughing, digging of pits, stump removals, infrastructure, etc.) on organic soils[1] shall be in less than 10% of the area that is submitted to certification (not 10% of the entire project area).

The soil is a well-drained ferralic arenosol classified as ARfI (Jones et al., 2013. Soil Atlas of Africa). It is hence not an organic soil, but a mineral soil.

The most likely scenario without the project (baseline scenario) shall be defined for the project area. This scenario shall not show any significant[1] increase of the Baseline biomass ('tree' and 'non-tree').

The grasslands on the plateaus have remained without trees by man-made fires before the start of the dry season and grazing by mostly goats and cattle (figure 17). Hence, no significant increase of the baseline biomass is expected.



Figure 20 Frequent burning of the Savannah by man-made fires keep the Savannah open

B.3. Project boundary

>>

Source	GH Gs	Includ ed?	Justification/Explanation
Baseline scenario	CO ₂	Yes	Sequestration in dead and living biomass, aboveground and belowground
	CH ₄	No	Emissions from biomass burning conservatively set to zero
	N ₂ O	No	Emissions from biomass burning conservatively set to zero
	...		
	CO ₂	Yes	Sequestration in dead and living biomass
	CH ₄	No	Emissions from biomass burning conservatively set to zero
	N ₂ O	No	Emissions from biomass burning conservatively set to zero
Project scenario	...		
	CO ₂	Yes	To be detailed in version 2 of this document
	CH ₄	No	Not relevant
	N ₂ O	No	Not relevant
	CO ₂	Yes	Sequestration in dead and living biomass, aboveground and belowground
	CH ₄	No	No burning allowed in plantation, measures taken against fire
	N ₂ O	No	No burning allowed in plantation, measures taken against fire
	...		
	CO ₂	Yes	To be detailed in version 2 of this document
	CH ₄	No	Not relevant
	N ₂ O	No	Not relevant
	...		

	CO_2	No	Not relevant
Fertiliser use	CH_4	No	Not relevant
	N_2O	Yes	Fertiliser use in the tree nursery

B.4. Establishment and description of baseline scenario

>> The project area has been stratified in 6 strata (table 4). The number of locations to be monitored in the Savannah has been defined using the following equation:

$$n = \frac{\left(\sum_{h=1}^L N_h * s_h \right)^2}{\frac{N^2 * E^2}{t^2} + \left(\sum_{h=1}^L N_h * s_h^2 \right)}$$

Where:

E = allowable error or the desired half-width of the confidence interval. Calculated by multiplying the mean carbon stock of 14.15 ton C/ha (Awé et al., 2021) by a precision of 15% (well below Gold Standard requirements).

t = the sample statistic from the t-distribution for the 95% confidence level.

N_h = Number of sampling units for stratum h (=area of stratum in hectares or area of the plot in hectares)

n = Number of sampling units in the population

S_h = Standard deviation of stratum h.

Table 6 Stratification of the baseline

stratum	Groupement	Vegetation	Area (ha)	Nr of plots
1	Swa Kasongo	Grassy A	2697	5
2	Swa Kasongo	Grassy D	1500	3
3	Swa Kahumba	Grassy	2287	3
4	Swa Kahumba	Grassy/Trees	1698	2
5	Swa Kahumba	Trees/Grassy	917	1
6	Swa Kahumba	Agriculture	905	1

Each plot consisted of an area of 20 x 20 m, in which all the trees have been measured. The locations of the plots have been registered in *GIS cloud*. We have

measured the diameter, circumference, and height of all trees (figure 19). In the Savannah there appears mainly one wild tree species that is more resistant to fire. Within a subplot of 5 x 5 m, all grasses have been harvested (figure 19). Those grasses were collected, dried, and weighed to have an estimate of the total dry mass.

The total mass of carbon has been calculated assuming a carbon content of 50% for tree biomass and 40% for non-tree biomass. One tree species is dominant on the Savannah, because it manages to survive frequent fires. To define the wood density, we have measured the weight and volume of dead branches and stems after removing the bark (Figure 22). It was found to be 0.646 g/cm³. A factor 44/12 has been used to calculate the equivalent of CO₂ sequestered in the Savannah biomass. Table 4 contains results of the baseline measurements.



Figure 21 Baseline monitoring: measuring tree biomass and non-tree biomass.



Figure 22 the wood density was defined by measuring weight and volume of stem and branches.

baseline results

Table 7 To define the baseline, trees have been measured in plots of 20x20m and grasses (non-tree biomass) in subplots 5x5m.

stratum	plot	date	Number of trees	% dead	Tree biomass		Non-tree biomass	Carbon mass Baseline	
					%	ton/ha		ton C/ha	ton CO ₂ /ha
Swa Kasongo A Grassy	1 Tembe BV	22/03/2023	6	0%	0.4	18.4	7.5	27.7	
Swa Kasongo A Grassy	2 Muni Mohemba	22/03/2023	2	0%	0.1	16.4	6.6	24.2	
Swa Kasongo A Grassy	3 ferme Hadrien	22/03/2023	2	50%	0.0	19.0	7.6	28.0	
Swa Kasongo A Grassy	4 Swa Kasongo	22/03/2023	1	0%	0.0	18.4	7.4	27.0	
Swa Kasongo A Grassy	5 Mbeko Sud Est	24/03/2023	15	33%	2.5	19.7	9.1	33.4	
Swa Kasongo D Grassy	6 Mbeko Sud Ouest	24/03/2023	0	0%	0	22.8	9.1	33.4	
Swa Kasongo D Grassy	7 Mbeko Kinzusu2	24/03/2023	0	0%	0	25.6	10.2	37.6	
Swa Kasongo D Grassy	8 Mbeko 2 routes	24/03/2023	0	0%	0	17.1	6.8	25.0	
<hr/>									
Swa Kahumba Trees/Grassy	4 B24-B38	29/03/2023	13	0%	2.0	17.7	8.1	29.6	
Swa kahumba Agriculture	1 C05	29/03/2023	1	0%	0.1	17.1	6.9	25.2	
Swa Kahumba Grassy	3 plot B35	29/03/2023	0	0%	0.0	24.3	9.7	35.6	
Swa Kahuba Grassy/Trees	5 plot B19	31/03/2023	9	0%	0.5	21.0	8.7	31.8	
Swa Kahumba Grassy	6 plot B03	31/03/2023	0	0%	0.0	21.0	8.4	30.8	
Swa Kahumba Trees/Grassy	2 plot B09	31/03/2023	4	0%	0.2	21.7	8.8	32.1	

TEMPLATE

Soil organic carbon baseline measurements

Baseline measurements are performed in the Savannah grasslands surrounding the plantation. This data will not serve as input for the Century model, hence a less extensive sampling representative to the region is sufficient. For sampling we will follow the ICRAF protocol. A LDSF hierarchical design will be followed.

The sample size is determined with the following formula :

$$n = \frac{(NxS)^2}{\frac{N^2xE^2}{t^2} + (NxS^2)}$$

Where:

n = number of plots

n= 10000 ha for the baseline

E = 6,3 for the baseline

t = 2

N = 100,000 for the baseline

S = 16 tonnes C/ha (Doetterl et al., 2021).

The number of soil samples is calculated at 25 for the baseline.

The baseline locations are taken add random in the Savannah and span an area of 1000 m². A total of 25 locations is sampled. Within each location a composite sample of 8 disturbed subsamples is taken. Each sub sample the initial carbon content and the texture is measured. On each location one undisturbed sample is taken to measure the bulk density of the soil.

These soil samples are analysed for

- soil carbon content
- soil bulk density.

-

B.5. Demonstration of additionality

Specify the methodology, activity requirement or product requirement that establishes deemed additionality for the proposed project (including the version number and the specific paragraph, if applicable).

Option 2 – positive list

Describe how the proposed project meets the criteria for deemed additionality.

All criteria (a), (b) and (c) in the positive list – Part I are met.

The criteria (f) and (g) in the positive list – Part II are met.

Option 2 – Positive List – Part I

2. The project shall meet **all of the requirements (a), (b) and (c)** in the list below and at least one of the requirements from (d) to (g) in order to be considered as additional under Option 2.

- a. The project is located in a Less Developed Country (LDCs) or in a region with a recent *UNDP Human Development Indicator*² below 0.8.
- b. The project shall have no intention of creating a forest for the commercial use of the timber or non-timber forest products.
- c. The project activities shall not be mandatory by any law or regulation, OR if it is mandatory, it shall demonstrate that these laws or regulations are systematically not enforced.

(a) The Democratic Republic of Congo has a Human development indicator of 0.479 according to the UNDP (source: the 2021/2022 Human Development Report "Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World", released on 8 September 2022)

(b) The project has no intention of creating a forest for the commercial use of timber and non-timber forest products. The process of Sustainable Forest Management (SFM) comprises 3 pillars for a successful application, **ecological protection, social interaction, and economic development.**

- (c) The afforestation activities are not mandatory by law or any regulation

Option 2 – Positive List – Part II

2. The project shall meet **all** of the requirements (a), (b) and (c) in the list below and **at least one of the requirements from (d) to (g)** in order to be considered as additional under Option 2.

The project area is located in a region with a mean annual precipitation of less than 600 mm.

- e. The soil pH of the planting area is less than 4.0.
- f. The planting area is planted with minimum 5 different native tree species in mixed stands, covering at minimum 50% of the planting area.
- g. The project area is located:
 - In a country or region with a recent *UNDP Human Development Indicator*¹ below 0.5, OR
 - In a *Small Island Developing State (SIDS)*³

(d) Not met

(e) Unknown

(f) Met. The planting area is planted with 13 different species or more in mixed stands of which 10 or more are local. 100% of the planting blocks include a mix of endemic species.

(g) Met. The Democratic Republic of Congo has a Human development indicator of 0.479 according to the UNDP (source: the 2021/2022 Human Development Report "Uncertain Times, Unsettled Lives: Shaping our Future in a Transforming World", released on 8 September 2022)

B.5.1 Prior Consideration

>> During the earliest phase, CO₂-certificates have been on the table to develop the project. However, as neither Colruyt Group or N'situ Pelende SASU had any experience with the voluntary carbon market, the decision was made to first focus on the development of the project on the terrain and management.

A slide from March 2021 in the earliest phase of project development (see additionality document) shows how the budget for the afforestation project also contains investments in issuing certification and audits. CO₂-certificates are taken up in the business model underpinning the project.

B.5.2 Ongoing Financial Need

>> Internal communication clearly shows ongoing interest in CO₂-certificates, and can be consulted on request:

- 4 March 2021: first mention of certification for carbon offsetting considered in the investment costs.
- 4 May 2021: mention of timing for certification in 2023.
- August 2021: mention of planning event in September 2022.
- 12 May 2022: appointing responsible for the business case of the project.
- September 2022: B2B event leadership event on CO₂ reduction will introduce the project.
- 17 October 2022: mention of carbon credits and sales to be part of commercial reforestation.
- 26 January 2023: mention of business partners interested in purchasing carbon offsets.
- 26 January 2023: slide on market exploration.
- 13 April 2023: slide showing process to acquire certification.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each of the three SDGs

Sustainable Development Goals Targeted	Most relevant SDG Target	SDG Impact
		Indicator (Proposed or SDG Indicator)
13 Climate Action (mandatory)		<ul style="list-style-type: none"> Emission removals
2 zero hunger	2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers	<ul style="list-style-type: none"> Number of smallholder businesses, differentiated by gender of the holder, by location and by agronomic sector Revenue of smallholder businesses, differentiated by gender of the holder, by location and by agronomic sector
3 good health and well being	3.3 By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases	<ul style="list-style-type: none"> Number of health centres with better facilities
4 quality education	4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	<ul style="list-style-type: none"> Number of primary schools with better facilities Enrolment differentiated by gender and age Number of people finishing primary school, differentiated by gender and age
5 Gender equality	5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and	<ul style="list-style-type: none"> Time saved by women on cassava (manioc) grinding using a mechanical mill.

the family as nationally appropriated fuel collection

8 decent work and economic growth

8.5 By 2030, achieve full and productive employment and decent work for all women and men

- Employment in FTE's in large agricultural businesses, differentiated by gender and age
 - living wage for employees in large agricultural businesses, differentiated by gender and age
 - Number and type of properties (transport, communication, furniture...) held by families
-
-

15 life on land

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

- Area of biodiverse forest
-

B.6.1 Explanation of methodological choices/approaches for estimating the SDG Impact

13 Climate Action (mandatory)

This includes the tree aboveground and belowground biomass, as well as soil organic carbon. The tree aboveground and belowground biomass has been modeled using a Richard-Chapman growth model. The actual biomass will be monitored using field measurements and allometric models.

The Soil organic carbon pool will be included based on the Soil Organic Framework Methodology - version 1.0 – using a combination of approach 1 (on site measurements) and approach 2 (modelling approach based on peer reviewed publications).

Field monitoring tree biomass

The actual CO₂ - sequestration in the forest will be monitored with field measurements. The future CO₂-sequestration in the forest will be predicted with growth models that are updated with data from the field monitoring.

To calculate the above ground biomass, we will use the allometric models of Chave et al. (2014). The below ground biomass will be calculated using the equations of Mokany et al. (2006).

$$\text{AGBest} = 0.0673 * (\rho * D^2 * H)^{0.976} \quad \text{Chave et al. (2014)}$$

In case the measurement of tree height becomes impossible because the crowns are hidden, height will be predicted as follows.

$$\ln(H) = 0.893 - E + 0.760 \ln(D) - 0.0340 \ln(D)^2, \text{ where } E \text{ is defined as}$$

$$E = (0.178 * TS - 0.938 * CWD - 6.61 * PS) * 10^{-3} \quad \text{Chave et al. (2014)}$$

Belowground biomass will be calculated as follows

$$\text{BGBest} = 0.235 * \text{AGB} \quad \text{if AGBC} > 62.5 \text{ t C/ha (1)} \quad \text{Mokany et al. (2006)}$$

$$\text{BGBest} = 0.205 * \text{AGB} \quad \text{if AGBC} \leq 62.5 \text{ t C/ha (2)} \quad \text{Mokany et al. (2006)}$$

With

AGBest : estimated aboveground biomass

BGBest : estimated belowground biomass

ρ : the wood density of the tree, depending on species. Tree densities are from the open source CGIAR database and from Zanne et al. (2009).

D : the tree diameter of the tree

H : the height of the tree

Allometric models of Chave et al. (2005 and 2014) have proven to be the best general models for tropical forests with mixed species. This is supported by destructive research measuring tree biomass in the tropics: in Yangambi in D.R. Congo (Ebuy et al., 2011), in lowland tropical forests of South-eastern Cameroon (Fayolle et al.; 2013), in Cameroon adding to international research (Djombo et al.; 2010) and in D.R. Congo and Cameroon (Kafuti et al., 2022). Those studies confirm the accuracy of the pan-tropical allometric equations of Chave et al. (2005) and recognise that the stress variable E in the improved equations of 2014 for when tree height is unknown (Chave et al., 2014) can account for site effects (Kafuti et al., 2022). According to Chave et al. (2014) the improved pan-tropic allometric model typically achieves 90% accuracy in AGB stock estimation at a 0.25 ha scale in a moist tropical forest, and the bias is about 10%, on average.



Figure 23 Monitoring trees with field data

Soil organic carbon

The A/R soil organic carbon tool will be used

SDG 2 zero hunger

Different 'agrofilières' will be started in cooperation with the smallholder farmers, for example beekeeping, fruits, fish culture... As the project will lower the barrier to the market by organising transport, we will have good insight in which smallholders develop businesses thanks to the project and what their revenues are.

We will collect data on the resources of agronomic income with the heads of the households using a **structured interview**. These interviews will be conducted bi-annually with the same interviewees to follow the progress and comprise home village, gender, age and education level of the person. The first interviews take place before the development of agro-economic 'filières' to set a baseline.

Contributing to SDG target 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment

SDG 3 good health and well-being

A medical centre will be constructed, to welcome patients in better facilities. The number of medical centres with improved facilities will be counted.

Additionally, we are sensitizing farmers to better control fires. This will improve air quality in the region. The number of people that have been sensitized, as well as the number of sensitization sessions will be monitored.

Contributing to SDG target 3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

SDG 4 quality education

Two schools will be provided with better facilities to welcome students. Currently, schools are made of a traditional construction, dried palm tree leaves, and grass as roofing. These buildings cannot withstand intense winds and rains and need frequent maintenance. During the time that the school is reconstructed, students to miss learning time.

We will follow the number of schools and the type of improved facilities. We will also follow-up the enrolment of students in primary school, disaggregated by age and gender, as well as the number of students finishing school and acquiring a diploma.

Contributing to SDG target 4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

SDG 5 Gender equality

Cassava (manioc) mills have been offered to 11 villages in exchange for the land use rights. The request came from women in the villages. Women and girls spend much time grinding manioc flour by hand. Manioc mills will help them save time on unpaid household tasks, which in turns opens opportunities for women to gain money with paid opportunities.

Contributing to SDG target 5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate

SDG 8 decent work and economic growth

The project will support economic growth in two ways: 1) stimulating entrepreneurship by improving market access and 2) by organizing larger scale businesses.

First, to follow the project's impact on local economic development, we will follow the development of businesses in the region. Organizing transport between the region and major market will allow businesses to develop. Whereas other traders buy in at the lowest prices -exploiting the farmer's lack of knowledge of prices in the cities-, we will offer them fair prices for their products. This close collaboration will give us clear insight in the development of local businesses. The number and the revenue of independent businesses will be monitored over time, with numbers differentiated by agricultural sector, by gender of the business owner and by location.

Second, to provide employment opportunities, the project will develop larger scale agro-economic businesses. Within these businesses we will keep detailed data about the number of employees, their employment in FTE, disaggregated by gender and age, as well as their salary. Also, the ratio of men and women in the steering board will be monitored.

Thirdly, to understand both the direct and indirect economic impact on life in the villages. We will conduct structured interviews to ask about the properties, sources of income of the households and background and daily activities of the heads of households. These interviews will be conducted bi-annually with the same interviewees to follow the progress and comprise gender, age, and education level of the person. The first interviews take place before the development of agro-economic entrepreneurship and businesses to set the baseline.

Contributing to SDG target 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

SDG 15 life on land

As we are planting a biodiverse forest with endemic tree species this will contribute to biodiversity of the region. Minimizing the impact of man-made fires will also help to conserve larger animals, such as mammals.

The impact on SDG 15 life on land will be measured in the number of hectares of biodiverse forest planted.

Contributing to SDG target 15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally

B.6.2 Data and parameters fixed ex ante

SDG 13 Climate Action (mandatory)

Data/parameter	Wood density																																																
Unit	g/cm ³																																																
Description	Wood density per tree species																																																
Source of data	<u>ICRAF Database - Wood Density (worldagroforestry.org)</u>																																																
Value(s) applied	<table border="1"> <thead> <tr> <th>tree species</th><th>wood density (g/cm³)</th></tr> </thead> <tbody> <tr><td><i>Acacia mangium x auriculiformis</i></td><td>0.761 (genus mean)</td></tr> <tr><td><i>Acacia mangium</i></td><td>0.5317</td></tr> <tr><td><i>Albizia lebbeck</i></td><td>0.5964</td></tr> <tr><td><i>Canarium schweinfurthii</i></td><td>0.5656 (genus mean)</td></tr> <tr><td><i>Cassia fistula</i></td><td>0.8293</td></tr> <tr><td><i>Cassia siamea</i></td><td>0.6823</td></tr> <tr><td><i>Dacryodes edulis</i></td><td>0.5371</td></tr> <tr><td><i>Dichrostachys cinerea</i></td><td>0.9425</td></tr> <tr><td><i>Harungana madagascariensis</i></td><td>0.4613</td></tr> <tr><td><i>Hevea brasiliensis</i></td><td>0.4872</td></tr> <tr><td><i>Leucaena leucocephala</i></td><td>0.6411</td></tr> <tr><td><i>Maesopsis eminii</i></td><td>0.4524</td></tr> <tr><td><i>Millettia laurentii</i></td><td>0.7687</td></tr> <tr><td><i>Pentaclethra macrophila</i></td><td>0.6804</td></tr> <tr><td><i>Pentaclethra eetveldeana</i></td><td>0.663</td></tr> <tr><td><i>Ricinodendron heudelotii</i></td><td>0.224</td></tr> <tr><td><i>Schizolobium parahyba</i></td><td>0.3483</td></tr> <tr><td><i>Terminalia superba</i></td><td>0.4644</td></tr> <tr><td><i>Artocarpus heterophyllus</i></td><td>0.5978</td></tr> <tr><td><i>Uapaca heudelotti</i></td><td>0.6348</td></tr> <tr><td><i>Piptadeniastrum africanum</i></td><td>0.6399</td></tr> <tr><td><i>Milicia excelsa</i></td><td>0.5655 (genus mean)</td></tr> <tr><td><i>Albizia chinensis</i></td><td>0.4283</td></tr> </tbody> </table>	tree species	wood density (g/cm ³)	<i>Acacia mangium x auriculiformis</i>	0.761 (genus mean)	<i>Acacia mangium</i>	0.5317	<i>Albizia lebbeck</i>	0.5964	<i>Canarium schweinfurthii</i>	0.5656 (genus mean)	<i>Cassia fistula</i>	0.8293	<i>Cassia siamea</i>	0.6823	<i>Dacryodes edulis</i>	0.5371	<i>Dichrostachys cinerea</i>	0.9425	<i>Harungana madagascariensis</i>	0.4613	<i>Hevea brasiliensis</i>	0.4872	<i>Leucaena leucocephala</i>	0.6411	<i>Maesopsis eminii</i>	0.4524	<i>Millettia laurentii</i>	0.7687	<i>Pentaclethra macrophila</i>	0.6804	<i>Pentaclethra eetveldeana</i>	0.663	<i>Ricinodendron heudelotii</i>	0.224	<i>Schizolobium parahyba</i>	0.3483	<i>Terminalia superba</i>	0.4644	<i>Artocarpus heterophyllus</i>	0.5978	<i>Uapaca heudelotti</i>	0.6348	<i>Piptadeniastrum africanum</i>	0.6399	<i>Milicia excelsa</i>	0.5655 (genus mean)	<i>Albizia chinensis</i>	0.4283
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Choice of data or Measurement methods and procedures																																																	
Purpose of data	Calculating the aboveground biomass																																																

Additional comment	
Data/parameter	Growth parameters Ymax, k and p in Chapman Richard model
Unit	ton C/ha, N/A and N/A
Description	<p>Ymax reflects the maximally expected build-up of tree biomass</p> <p>k is a parameter defining the growth speed</p> <p>p is a parameter defining the growth pattern</p>
Source of data	<i>ICRAF Database - Wood Density (worldagroforestry.org)</i>
Value(s) applied	<p>By default,</p> <p>Ymax= 113 t C/ha, k = 0.070, p=3</p>
Choice of data or Measurement methods and procedures	based on mean carbon content of in aboveground woody biomass in Congo
Purpose of data	predicting the biomass increment
Additional comment	These parameters Y _{max} , k and p will be updated based on monitoring data to acquire a better estimation of the annual increment

Data/parameter	Composition of litter input lignin:N
Unit	-
Description	The Century model calculates the amount of carbon in the soil based on litter input. The composition of the litter is shown below.
Source of data	<i>Literature</i>

Value(s) applied	Tree species	C (%)	N (%)	Lignin (%)	Lignin:N	source
	<i>Acacia mangium</i>	2.6	36	14	Bachega et al. (2016)	
	<i>Cassia siamea</i>	18.1	8.9	4.9	Lehmann et al. (1995)	
	<i>Albizia lebbeck</i>	26.7 ± 0.33	3.12 ± 0.25	59.7 ± 0.42	19.1 ± 0.14	Akoto et al. (2022)
	<i>Leucaena leucocephala</i>	26.7 ± 0.33	4.26 ± 0.64	59.7 ± 0.42	19.1 ± 0.14	Akoto et al. (2022)
	<i>Senna siamea</i>	29.1 ± 0.25	2.06 ± 0.32	78.1 ± 0.31	37.9 ± 0.91	Akoto et al. (2022)
Choice of data or Measurement methods and procedures	The Century model calculates the amount of carbon in the soil based on litter input.					
Purpose of data	Input for Century model					
Additional comment						

SDG2 zero hunger

N/A

SDG3 good health and well-being

N/A

SDG 4 quality education

N/A

SDG 8 decent work and economic growth

N/A

TEMPLATE

B.6.3 Ex ante estimation of SDG Impact **SDG 13 Climate Action**

>>

The results of the baseline measurements are shown in table 4. The baseline was defined to be 29.9 ton CO₂/ha on average, or 299,765 ton CO₂ over the whole planting area.

Modelling tree growth

A Chapman-Richards model is used to model tree growth (figure 20). The curve has an S-shape and three factors Y_{max}, k and p define the exact shape. Y_{max} is the maximal carbon uptake and k defines growth speed. By default, the Y_{max}, k and p have been set to 113 ton C/ha, 0.070 and 3, based on Xu et al. (2017). Depending on tree type and pedoclimatic factors the growth curve will however be different. The field measurements will be used to calibrate the model per block/per species to local circumstances.

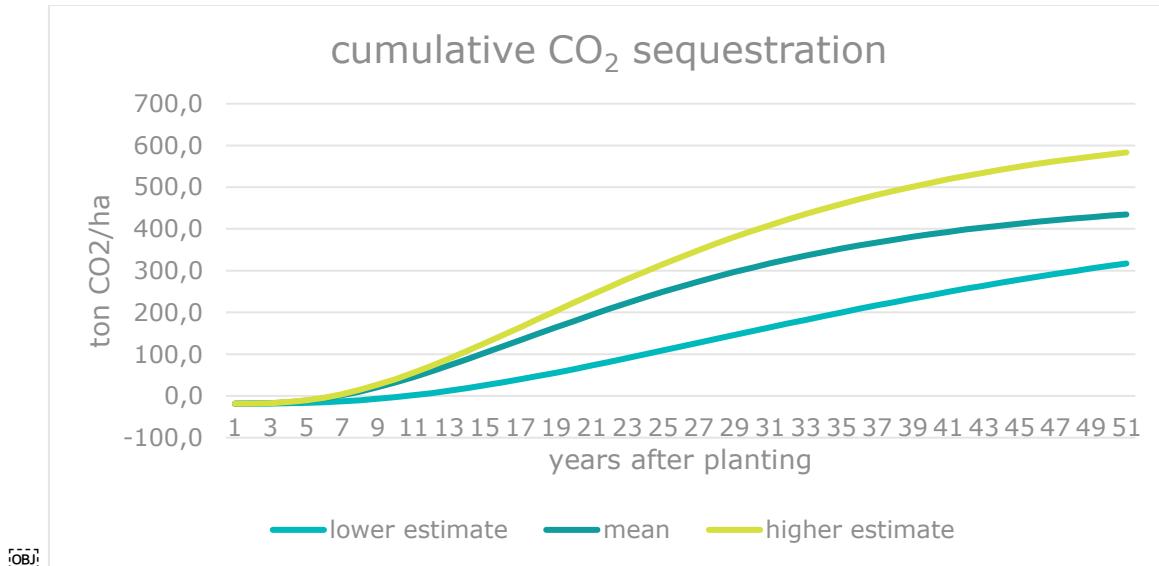


Figure 24 Estimated growth based on Richard-Chapman growth curve. The actual growth curve depends on local growth factors

SDG 2 zero hunger

No prior estimate has been made about the take up and revenue of small-scale agro-businesses.

SDG 3 good health and well-being

The number of medical centers to be built with improved materials is defined in the 'Cahier des Charges' and project planning. One medical center will be built with improved infrastructure.

No prior estimate about the reduction in burning area has been made.

SDG 4 quality education

The number of schools to be built with improved materials is defined in the 'Cahier des Charges' and project planning. Two schools will be built with improved infrastructure.

SDG 5 Gender equality

Eleven villages have received a manioc mill as stated in the *Cahier de charges*

Women and girls spend on average 60 minutes per week to grind cassava (manioc) into flour. Then this flour is made into fufu, a local dish. By providing manioc mills to the villages we save cooking time for women and girls. The total hours saved is calculated as 60 minutes per week * number of households/village * number of villages with a mill.

SDG 8 economic development

Different *filières* will be tested, without the guarantee that they are economically viable. Local employment has been estimated starting from following assumptions:

- Project reforestation employment varies between 1000 in high planting period and 500 in low non planting season and it will go down to 200 average mid 2025 when plating will be finished and only maintenance remains.
- Fruit tree *filière* starts in 3 to 4 years (2026-2027), before that no fruits produced by the trees (low employment)
- Agriculture is making blocks of 40 ha close to each village and going up to 8 villages ($8 \times 40 = 320$ ha in 3 years)
- Honey: April-June 2023 start with the training of 20 beekeepers and grow slowly if this turns out to be an effective *filière*
- After the plantation activities are finished, the tree nurseries will lose their function and make room for vegetable production by reusing the facilities. Four tree nurseries will be transformed for vegetable production each for 40 people in the next 3 years.
- BioMakala will probably form a small *filière*. The employment rate has been estimated low to avoid overestimation.
- Cassava *filière*, if manioc seems to be an effective and productive *filière*, in one year (2024), we might start our own production as well to add transforming units and make it more organized, this could create up to 200 places for employment.

Refers to the total number of employees paid living wage.

Living wage is defined as the remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing, and other essential needs including provision for unexpected events.

Refer to the methodology to estimate living wage for detail guidelines and requirements
<https://www.globallivingwage.org/about/anker-methodology/>

Refer to the following link to check the available reference values
https://www.globallivingwage.org/resource-library/?fwp_resource_type=livewage

B.6.4 Summary of ex ante estimates of each SDG Impact

SDG 13 Climate Action (mandatory)

Tree biomass

Year	Baseline estimate	Project estimate	Net benefit
2021	299,765	0	-299,765
2022		0	0
2023		1,334	1,334
2024		5,846	5,846
2025		14,619	14,619
2026		27,528	27,528
2027		43,056	43,056
2028		59,564	59,564
2029		75,905	75,905
2030		91,308	91,308
2031		105,277	105,277
2032		117,528	117,528
2033		127,926	127,926
2034		136,444	136,444
2035		143,133	143,133
2036		148,092	148,092
2037		151,454	151,454
2038		153,368	153,368
2039		153,992	153,992
2040		153,484	153,484
2041		151,997	151,997
2042		149,677	149,677
2043		146,658	146,658
2044		143,066	143,066

2045		139,011	139,011
2046		134,595	134,595
2047		129,906	129,906
2048		125,022	125,022
2049		120,012	120,012
2050		114,933	114,933
2051		109,835	109,835
2052		104,761	104,761
2053		99,745	99,745
2054		94,816	94,816
2055		89,999	89,999
2056		85,311	85,311
2057		80,767	80,767
2058		76,379	76,379
2059		72,153	72,153
2060		68,096	68,096
2061		64,210	6,421
2062		60,497	60,497
2063		56,955	56,955
2064		53,583	53,583
2065		50,379	50,379
2066		47,338	47,338
2067		44,456	44,456
2068		41,729	41,729
2069		39,150	39,150
2070		36,714	36,714
Total	299,765	4,348,584	4,048,819
Total number of crediting years	50		

Annual average over the crediting period		86,971	80,976
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Soil organic carbon

To be continued

Year	Baseline estimate	Project estimate	Net benefit
2021		-106666,56	-106666,56
2022		22857,12	-83809,44
2023		22857,12	-60952,32
2024		22857,12	-38095,2
2025		22857,12	-15238,08
2026		22857,12	7619,04
2027		22857,12	30476,16
2028		22857,12	53333,28
2029		22857,12	76190,4
2030		22857,12	99047,52
2031		22857,12	121904,64
2032		22857,12	144761,76
2033		22857,12	167618,88
2034		22857,12	190476
2035		22857,12	213333,12
2036		22857,12	236190,24
2037		22857,12	259047,36
2038		22857,12	281904,48
2039		22857,12	304761,6
2040		22857,12	327618,72
2041		22857,12	350475,84
2042		0	350475,84
2043		0	350475,84

2044		0	350475,84
2045		0	350475,84
2046		0	350475,84
2047		0	350475,84
2048		0	350475,84
2049		0	350475,84
2050		0	350475,84
2051			
2052			
2053			
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2055			
2056			
2057			
2058			
2059			
2060			
2061			
2062			
2063			
2064			
2065			
2066			
2067			
2068			
2069			
2070			
Total			350475

SDG 2 zero hunger

We have not made an estimate about the number of independent businesses that will start thanks to the project.

SDG 3 good health and well-being

Number of health centra with improved infrastructure

Year	Baseline estimate	Project estimate	Net benefit
2021	0	0	0
2022	0	0	0
2023	0	0	0
2024	0	1	1
2025	0	1	1
Total	0	1	1

SDG 4 quality education

Number of schools with improved infrastructure

Year	Baseline estimate	Project estimate	Net benefit
2021	0	0	0
2022	0	0	0
2023	0	1	1
2024	0	2	2
2025	0	2	2
Total	0	2	2

Number of training hours provided for employees has not been estimated ex ante.

SDG5 Gender equality

Average time saving associated with cooking time and fuel collection has been estimated as follows:

Eleven villages have received a manioc mill as stated in the *Cahier de charges*

Women and girls spend on average 60 minutes per week to grind cassava (manioc) into flour. Then this flour is made into fufu, a local dish. By providing manioc mills to the villages we save cooking time for women and girls. The total hours saved is calculated as 1 hour per week * number of households/village * number of villages with a mill.

Year	Baseline estimate	Project estimate	Net benefit (hours)
2021	0	758	758
2022	0	758	758
2023	0	758	758
2024	0	758	758
2025	0	758	758
Total	0	758	758

SDG 8 economic development

Numbers of employees paid living wage

Year	Baseline estimate	Project estimate	Net benefit
2021	0	900	900
2022	0	900	900
2023	0	800	800
2024	0	1,200	1,200
2025	0	1,200	1,200
Total	0	1,200	1,200

Ratio of men and women among employees and management have not been estimated beforehand.

B.7. Monitoring plan

B.7.1 Data and parameters to be monitored

SDG 13 Climate action

Data / Parameter	Diameter
Unit	cm
Description	The diameter of the tree at breast height
Source of data	Forest inventory
Value(s) applied	To be estimated at each performance certification
Measurement methods and procedures	The diameter will be measured with a calliper
Monitoring frequency	Five-yearly
QA/QC procedures	Diameter is measured in two-fold. If the deviation is too high this could question the measurement.
Purpose of data	Estimating tree biomass
Additional comment	

Data / Parameter	Circumference
Unit	cm
Description	The circumference of the tree at breast height
Source of data	Forest inventory
Value(s) applied	To be estimated at each performance certification
Measurement methods and procedures	The circumference will be measured with a tape measure
Monitoring frequency	Five-yearly

QA/QC procedures	The circumference should be 3.14 times the diameter. If the deviation is too high, this could question the measurement.
Purpose of data	Estimating tree biomass
Additional comment	

Data / Parameter	Height
Unit	cm
Description	The diameter of the tree at breast height
Source of data	Forest inventory
Value(s) applied	To be estimated at each performance certification
Measurement methods and procedures	If < 4 m, the height of the tree is measured with a yardstick. If > 4 m, the height of the tree is measured with a clinometer
Monitoring frequency	Five-yearly
QA/QC procedures	Follow the monitoring protocol. All numbers will be checked on realistic detail.
Purpose of data	Estimating tree biomass
Additional comment	

Measuring tree biomass

Summary

This will be a 20x20 m plot during the first measurement years. The first time the monitoring is done, the plot's location must be defined beforehand. The second time the monitoring is done, the old plot is found with GPS and a metal detector. When the trees have a diameter of over 20 cm, the plot's dimensions are extended to 35x35 m.

All trees in a plot are measured for width and height, using a tape measure and a clinometer, to calculate the total biomass.

Materials

- Metal points

- 4 bamboos
- 55m rope, marked at 20m, 40m and 68.3m
- If the trees are > 20 cm in diameter: 120 m rope, marked at 35 m, 70 m and 119.5 m.
- Spray Paint
- Surveyor
- Tape measure
- Vernier caliper
- Clinometer

First step a) set out the dimensions of the block

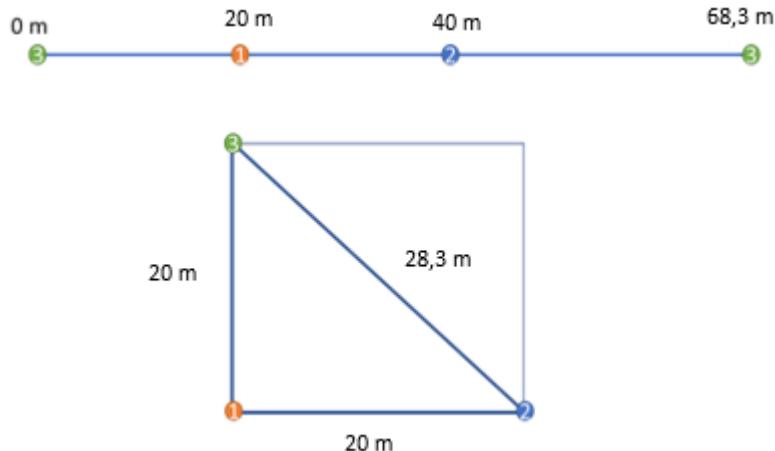
The plot location will be indicated per block relative to the firebreak's distance. When entering the block, always follow the direction of the ridges.

- The distance from the firebreak 1 is the distance from the corner to the place where the block is entered.
- The distance from firebreak 2 is the distance after entering the block.

Once you have arrived at the location, you must set out the exact location and dimensions of the 20x20 m plot.



- 1) Person 1 holds the corner, person 2 and 3 stand 20 m away from person 1. Person 3 picks up the end of the rope from person 2, the diagonal must be 28.3 m long to form a 90° angle. The direction of the plot follows the direction of the ridges in the plantation.
- 2) If everyone has found the right place, each corner of the rectangle is marked with a metal dot that is pushed into the ground and painted fluorescent, in addition a bamboo is pushed into the ground.
- 3) This process is repeated on the other side to form the 4th corner of the rectangle.
- 4) The GPS coordinates of each corner are registered in the *GIS cloud*. The nearest tree is also indicated with paint.



First step b) find the dimensions of the plot

To find an existing plot, the location must first be found with the help of the firebreak distances or the location in the GIS cloud. Then the corners of the exact plot are found with a metal detector. At each corner, a bamboo is installed to mark the dimensions.

The measurement is then carried out.

Before leaving the plot, the flags are removed and taken to the next plot.

First step c) Extend the dimensions of the plot

Only applicable if the trees have a diameter of > 20 cm. If the trees have a diameter of >20 cm, the dimensions of the plot are extended to 35 x 35 m. The northernmost corner of the plot is used as a reference and remains the same. Corners 2, 3 and 4 are extended to 35 m.

Step 2: Numbering and plot information

Each plot is given a name, the name of the block, followed by a "." and a number. For example plot A01.1, A01.2... B09.1, B09.2...

The **distances of firebreaks** 1 and 2 are noted.

Slope The direction of the slope and the slope are noted. The direction is measured with a compass to the highest point seen from the measurement location. The slope is measured with the clinometer of the compass. The compass should be held at the level of the bubble, look at the vegetation at the highest point and note the corner of the slope.

Step 3: Measure the size of a tree

There are three dimensions to measure: diameter, circumference, and height. You also need to record information about the tree plot and the condition of the tree.

1.1 Tree numbering and information

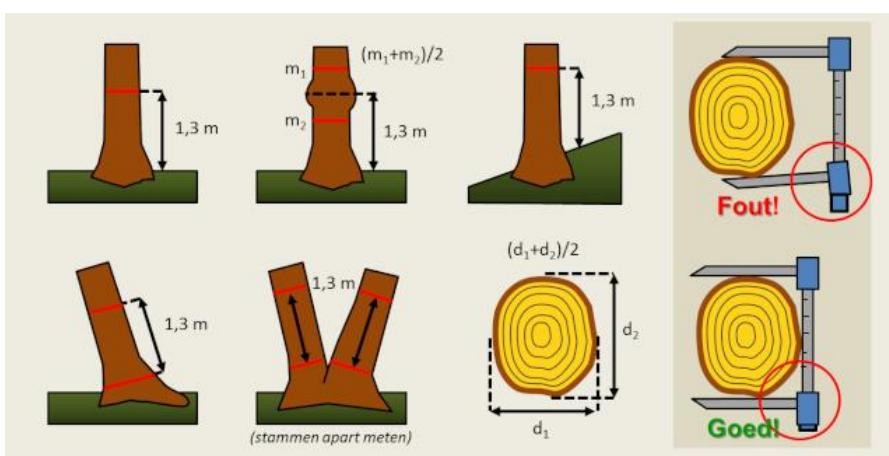
The trees are numbered 101, 102, 103... and 201, 202, 203... Where the first digit indicates the number of the ridge, and the last two digits indicate the number of the tree in the ridge. The northern corner of the log is the reference. The northernmost ridge is ridge one. The northernmost tree is tree 101.

The tree information is noted in the form.

- If the tree is alive, the tree species is noted.
- If the tree is cut down, we note "cut down". Measuring is not possible, so the other cells remain empty.
- If the tree is there, but dead, note "dead".
 - o If it is possible to guess the species of the tree, it is noted.
 - o If the tree still has all the branches and is complete, it is scored "complete". Otherwise, if the tree is missing branches or has holes, it is partially decomposed and is marked "decomposed". In both cases the diameter and height of the tree are measured.

1.2 The diameter

The diameter is measured with a calliper at chest height. The chest height is defined as 1.3 metres. The diameter is measured twice: the second time the diameter is measured perpendicular to the first measurement. In case the tree shape is a bit odd, the tree should be measured as drawn below.



1.3 Circumference

The circumference is measured with a tape measure at chest height. The tape measure should be straight and under tension around the entire trunk. The circumference is noted.



1.4 Height

The height of the tree is measured by a clinometer at 15m from the tree.

- You must go to 15m. The measuring wheel indicates 15 m from the tree. It must be straight and under tension when the distance is taken.
- The height is noted on the left in the Suunto (the lower number)

If the tree is taller than 20 m

- You must go to 20 metres. The surveyor indicates 20 m from the tree. It must be straight and under tension when the distance is taken.
- Note the height which is indicated on the right in the Suunto (the higher number)



If the top of the tree is not visible, note "no".

soil organic carbon

Data / Parameter	Carbon content
Unit	g/kg
Description	Amount of carbon in the soil
Source of data	Soil sampling
Value(s) applied	To be estimated at each performance certification
Measurement methods and procedures	Soil sampling and analysis
Monitoring frequency	Five-yearly

QA/QC procedures	ISO 17025 standard for quality management in laboratories
Purpose of data	Input data and validating CENTURY model
Additional comment	

Soil samples as input to the Century model

Soil samples for input data in the CENTURY model are taken in the plantation 4² to 24 months after plowing. We expect that the carbon content will sharply decline directly after plowing, due to soil disturbance followed by mineralisation of soil organic carbon. And we expect that the peak mineralisation will be over after 4 months and soil organic carbon will have reached a new temporary equilibrium. The contribution of leaf litter of the trees is still very limited for trees of maximum 24 months old.

For sampling we will follow the ICRAF protocol. A LDSF hierarchical design will be followed.

The sample size is determined with the following formula :

$$n = \frac{(NxS)^2}{\frac{N^2xE^2}{t^2} + (NxS^2)}$$

Where:

E = 5.46 for input for the CENTURY model.

t = 2

N = 60,000 for the input of the CENTURY model.

S = 16 tonnes C/ha (Doetterl et al., 2021).

The number of soil samples is calculated at 35 in the plantation.

The monitoring locations are taken add random and span an area of 1000m². A total of 35 locations is sampled. Within each location a composite sample of 8 disturbed subsamples is taken. Each sub sample the initial carbon content and the texture is measured. On each location one undisturbed sample is taken to measure the bulk density of the soil.

² Autret et al. (2020): mineralisation becomes linear after incubating for 120 days at 20°C in a Luvisol from Versaille, France

Jacobs et al. (2010): mineralisation slowing down after incubating for 30 days at 22°C in a Luvisol from Göttingen Germany

Franzluebbers et al. (1998): mineralisation was still significant after incubating for 24 days at 25°C in a clayey soil

Zhang et al. (2015): finds mineralisation has stopped after 100 days while incubating for 160 days at 25°C in a clayey soil that is flooded one in two years

On each location the samples will be analysed for:

- the soil carbon content,
- soil texture
- bulk density

validation measurements

Every five years a subset of 7 samples is taken to validate the CENTURY model. This is to validate the CENTURY model.

Weather data

Monthly weather data will be collected using an online weather station (Netatmo Smart weather station and pluviometer). Weather data will be measured every five minutes.

- temperature with a range of -50 to 65°C and precision of $\pm 0.3^{\circ}\text{C}$
- precipitation with a range of 0.2 mm/h to 150 mm/h and an accuracy of ± 1 mm/h
- humidity with a range of 0 to 100% and a precision of $\pm 3\%$
- pressure with a precision of 260 to 1160 mbar and a precision of ± 1 mbar

2 zero hunger

Number, type, and diversity of agricultural businesses in the region will be monitored using a structured interview for socio-economic analysis (figure 21). We will monitor the type of agriculture, the type of small business, the type and number of animals as well as the facilities provided to the animals.

Data / Parameter	Number and revenue of smallholders with independent businesses
Unit	Number of independent businesses and revenue in Franc Congolais
Description	Number of independent businesses disaggregated by agricultural sector, gender of the head and location (village)

Source of data	Data collection and bookkeeping during the organisation of transport
Value(s) applied	None
Measurement methods and procedures	Bookkeeping of purchases before transport to markets
Monitoring frequency	Continuous
QA/QC procedures	
Purpose of data	Estimating SDG 8 economic impact
Additional comment	

3 good health and well being

Number of health centres provided with better facilities and the type of facilities provided will be reported.

Area of savannah land burnt over time, estimated using sentinel FAPAR - imagery to be reported annually

4 quality education

Number of schools provided with better facilities to be reported annually

5 gender equality

Number of households with access to manioc mills

8 decent work and economic growth

Data / Parameter	Employment
Unit	Number of FTE's
Description	Number of employees disaggregated by gender, age and location (village)
Source of data	HR-administration
Value(s) applied	None

Measurement methods and procedures	HR-administration
Monitoring frequency	Continuous
QA/QC procedures	
Purpose of data	Estimating SDG 8 economic impact
Additional comment	

Data / Parameter	Living wage
Unit	living wage per person
Description	Living wage disaggregated by gender, age and function
Source of data	HR-administration and interviews
Value(s) applied	None
Measurement methods and procedures	<p>Refer to the methodology to estimate living wage for detail guidelines and requirements https://www.globallivingwage.org/about/anker-methodology/</p> <p>Refer to the following link to check the available reference values https://www.globallivingwage.org/resource-library/?fwp_resource_type=livewage</p>
Monitoring frequency	annual
QA/QC procedures	
Purpose of data	Estimating SDG 8 economic impact
Additional comment	

Data / Parameter	Properties of households
Unit	number and type of assets owned by households

Description	Number and type of assets for transportation, communication, comfort and housing
Source of data	Structured interviews
Value(s) applied	None
Measurement methods and procedures	Structured interviews
Monitoring frequency	Once every two years
QA/QC procedures	
Purpose of data	Estimating SDG 8 economic impact
Additional comment	See, tool figure 21

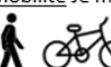
Village :	Date:	Chercheur: Qui a rempli le fichier : le chercheur / la personne même
<p>Vous êtes qui?</p> <p>Nom :</p> <p>Âge</p> <p>Femme ou homme?</p>   <p>Famille</p>    <p>Marié / célibataire / divorcé / veuf.ve (Ton mari a) combien de femmes ?</p> <p>Combien d'enfants ?</p> <p>Scolarité :</p>   <p>L'école primaire L'école secondaire</p> <ul style="list-style-type: none"> - commencé - Fini - Commencé - Fini <p>La maison</p> <p><u>Mobilité</u> Je me déplace</p>     <p>À pied ; à vélo ; à moto privé ; à moto taxi</p> <p><u>Communication</u></p>    <p>Radio ; téléphone ; internet</p> <p><u>Meubles</u></p>     <p>Table ; Nombre de chaises..... ; Type de lit : - Grabat sans matelas; -Grabat avec matelas ; -Stick + matelas ; -Stick sans matelas</p> <p><u>Toiture</u></p>   <p>tôles ondulées; matériaux organique</p> <p>Revenus</p> <p><u>Cultures agricoles</u></p>     <p>Maïs ; manioc ; Arachides ; légumes</p> <p><u>Petit commerce:</u> Quel type de commerce ?</p> <p><u>Qui gère le budget ?</u> Moi-même ; mari ; épouse ; personne</p> <p><u>Élevage</u></p>     <p>Poules ; chèvres ; moutons ; poissons Nombre :</p> <p><u>Facilités pour l'élevage</u></p>     <p>eau ; berger ; caché ; étable</p>		

Figure 23 Tool used for socio-economic analysis. We will ask about the background of the person. Name, age, gender, marital state, family, and education. We will ask about the means of transport: by foot, bicycle, private motorbike, and public motorbike, means of communication: radio, telephone, and internet, ask about the number of chairs, type of bed: "grabat" with or without mattress or "stick" with or without mattress (figure 22). We will ask about the income of people: the type of agriculture, whether they have a small business, who is managing the family budget, which and how many animals they own, and which facilities they have for raising animals.



Figure 26 Left: bed of the type "grabat" without mattress and right bed of the type "stick" with mattress.

SDG 15 life on land

Number of hectares planted with a mix containing indigenous species, with actual density given per tree species.

B.7.2 Sampling plan

SDG 13 Climate action

For each block of about 50 ha at least 4 plots will be monitored, based on statistical power analysis using R, assuming 90% confidence, 18% error (GS requirement 20%), and a mean of 113 ton C/ha, stdev= 9 ton C/ha (Xu et al., 2017).

In Swa Kasongo (MU1: 4638 ha) there are currently 75 blocks demarcated (figure 5, situation 28/06/2023), so a total of 300 plots. In Swa Kahumba (MU2: 5366 ha) there are currently 55 blocks (figure 5, situation of 28/06/2023), so a total of 220 plots. Further demarcation is ongoing. Each year, one fifth of the blocks is monitored.

Currently, there are During the first years monitoring plots will be 20 x 20 until trees have reached a diameter of 20 cm then plots will be 35 x 35 m. For each tree the following parameters will be noted: diameter, height, species, mortality, and disintegration if it is dead.

SDG 2 zero hunger

Number, type, and diversity of agricultural businesses in the region, will be monitored once every two-year using a structured interview. We set a goal to interview at least 20% of all the households in each village and an equal number of men and women.

We will follow up the same households every two years to evaluate the progress.

SDG 3 good health and well-being

The number of health centers and the type of facilities will be reported annually.

SDG 4 quality education

Number of schools provided with better facilities will be reported annually.

Number of students enrolling in the schools will be reported annually, based on the attendance lists of the schools. Data will be disaggregated by gender and age.

Number of students finishing primary school will be reported annually, based on the lists of the schools. Data will be disaggregated by gender and age.

SDG 8 decent work and economic growth

Most parameters are monitored continuously thanks to the data that we will acquire within market and business development activities foreseen in P2 and P3. This data monitoring is part of the usual work.

The socio-economic analysis at the household level focuses on the project's general impact, not only within the businesses. We will follow households in different villages in and around the concession. We set a goal to interview at least 20% of all the households in each village and an equal number of men and women (table 5). We will follow up with the same households every two years to evaluate the progress.

Table 8 monitoring plan socio-economic interviews at the households

Village	Groupement	# ménage	travaille d	sampling	hommes	femmes
Bethanie	Swa Kasongo	25	5%	6	3	3
Kikosi	Swa Kahumba	31		8	4	4
Kingungu	Swa Kahumba	59		12	6	6
Kinzusu	Swa Kasongo	70	3%	14	7	7
Malundu	Swa Kahumba	40		8	4	4
Mbeko	Swa Kasongo	142	60%	30	15	15
Miboti	Swa Kasongo	207		42	21	21
Mulaku	Swa Kahumba	79		16	8	8
Ngunguntambu	Swa Kasongo	82	2%	18	9	9
Payi	Swa Kahumba			0	0	0
Swa Kahumba	Swa Kahumba	99		20	10	10
Swa Kasongo	Swa Kasongo	94	5%	20	10	10
Tembe	Swa Kasongo	87	30%	18	9	9

SDG 15 life on land

Number of hectares planted with a mix containing indigenous species will be monitored 5-yearly along with the monitoring for carbon sequestration.

B.7.3 Other elements of monitoring plan

>>

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1 Start date of project

>> 01 September 2021

C.1.2 Expected operational lifetime of project

>> 50 years, the concession of 25 years will be prolonged with another 25 years.

C.2. Crediting period of project

C.2.1 Start date of crediting period

>> 01 September 2021

C.2.2 Total length of crediting period

>> 50 years

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1 Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in [Appendix 1](#), ongoing monitoring is summarized below.

Principles	Mitigation Measures added to the Monitoring Plan
Principle 4.3 Land tenure rights	Conflict procedure
Principle 9.4 Release of pollutants	During planting, the plastic bags from the tree nursery are collected and reused if possible. Otherwise, they are collected and disposed to a waste collection company

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	<p>A gender sensitive approach will be included in the project pillars.</p> <p>Women are not excluded for work and receive equal payment for the same work.</p>
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	<p>The project complies to DRCs national gender Policies and strategies</p> <ul style="list-style-type: none"> - National Policy on Gender Mainstreaming, Family and Child Promotion, MGFE, Kinshasa, July 2008 - National strategy to combat Gender-Based Violence (SNVBG), MGFE, Kinshasa, Novembre 2009 - Action plan of the government of the DRC for the United Nations Security Council Resolution 1325, MDFE, Kinshasa, January 2010
Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	A legal expert assists the project with regard to Gender Safeguarding Principles and requirements, among others.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	No

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

Below is a summary of the 2 step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

E.1 Summary of stakeholder mitigation measures

>> Alterations based on feedback from experts

The tree species composition has been changed based on feedback from experts, ending with a mix of fast-growing species and endemic species. Possibly invasive species have been let out. Fast growing Acacias have been chosen as a safe alternative to plantation species, whereas Eucalyptus was omitted. A mix of tree species from the region has been involved in the project.

Alterations based on feedback from NGO's

CADIM has clarified the importance of involving local communities to prevent forest fires and unsustainable exploitation of the forest. A pillar about social sensitization and fire prevention (P2) has been integrated in the project, as well as pillar for agro-economic development (P3).

Alterations based on feedback from local communities

Local communities have stressed their dependence for food (wildlife) of the Savannah. This has led to the introduction of pillar 3, the development of agro-economic *filières* to provide income to the local communities.

E.2 Final continuous input / grievance mechanism

Method	Include all details of Chosen Method (s) so that they may be understood and, where relevant, used by readers.
	Complaints and Appeals Mechanism (translated from French)
Continuous Input / Grievance Expression Process Book (mandatory)	Twelve brigadiers are actively scouting in the region and are known in the whole concession. Their telephone numbers are communicated to the chefs de villages and employees of the projects. Whenever someone wants to address or give his comments on the project, the brigadier serves as a contact point and anonymously files the comment to the project.
GS Contact (mandatory)	help@goldstandard.org
Other	

TEMPLATE

REFERENCES

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APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into [SECTION D](#) above. Please refer to the instructions in the [Guide to Completing](#) this Form.

Assessment Questions/ Requirements	Justification of Relevance (Yes/potentially/no)	How Project will achieve Requirements through design, management or risk mitigation.	Mitigation Measures added to the Monitoring Plan (if required)
Principle 1. Human Rights			
<ol style="list-style-type: none"> 1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights 2. The Project shall not discriminate with regards to participation and inclusion 		<p>The rights of employers are respected following the Universal Declaration of Human Rights and the national legislation.</p> <p>The project follows the Universal Declaration of Human rights.</p> <p>All employers from the age of 16 can be employed, they will not be discriminated based on gender, religion, age, origin, sexual orientation, or political opinions.</p>	
Principle 2. Gender Equality			

<ol style="list-style-type: none"> 1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women 2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work 3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks 4. (Where required) Summary of opinions and recommendations of an Expert Stakeholder(s) 		<ol style="list-style-type: none"> 1. A gender sensitive approach is included in the project pillars. 2. Women are not excluded for work and receive equal payment for the same work 3. The project complies to DRCs national gender Policies and strategies <ul style="list-style-type: none"> - National Policy on Gender Mainstreaming, Family and Child Promotion, MGFE, Kinshasa, July 2008 - National strategy to combat Gender-Based Violence (SNVBG), MGFE, Kinshasa, Novembre 2009 - Action plan of the government of the DRC for the United Nations Security Council 	
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		Resolution 1325, MDFE, Kinshasa, January 2010	
Principle 3. Community Health, Safety and Working Conditions			
1. The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community		The project does the maximal to avoid dangerous situations and prevent incidents. In case of an incident, this is listed and evaluated if it could be avoided in the future.	
Principle 4.1 Sites of Cultural and Historical Heritage			
Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional, or religious values or intangible forms of culture?	No, The area has been selected with land occupation as a first selection criterium. Sites, structures, and objects with historical, cultural, artistic, traditional, or religious values or intangible forms of culture are excluded from the planting area.		
>>			
Principle 4.2 Forced Eviction and Displacement			

Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full, or partial)?	No, There are no displacements of people or villages by the project.		
>>			
Principle 4.3 Land Tenure and Other Rights			
a. Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership? b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership?	Yes, Parts of the region are under administered with regards to land tenure rights. There are some (non-serious) uncertainties about land use, related to conflicts between land grantors and spoliators, which are manifested only by the excitement of the Nsitu Pelende Project activities.	<u>Conflict procedure</u> The project will try to find a solution that goes with both parties. That could mean: 1) Work with provincial government and <i>Chefferie</i> to resolve issues; 2) not planting the areas of land in question until resolved, even though it is legally under concession of the project, 3) if negotiations do not lead to any solution, the court of Kenge will solve legal disputes about land-tenure rights.	Effective planting area is part of the monitoring plan
>>			

<p>The Project Developer shall identify all such sites/matters potentially affected by the Project. For all such sites/matters identified the Project shall respect and safeguard:</p> <ul style="list-style-type: none"> (a) Legal rights, or (b) Customary rights, or (c) Special cultural, ecological, economic, religious or spiritual significance of people shall be demonstrably promoted/protected. 		<p>Locations of farms are mapped in Fermes.shp</p>	
<p>Changes in legal arrangements must be in line with relevant law and must be carried out in strict adherence with such laws. All legal disputes must be resolved prior to the Project being carried out in such areas. All such changes must be demonstrated as having been agreed with free, prior and informed consent</p>		<p>In case doubt about land-tenure rights is raised, the project will first address and negotiate with the government and the landowners as well as with the <i>Chefferie</i>, <i>chef coutumier</i> and <i>chef de villages</i>. The minister of the province of Kwango can assist to clarify land-tenure rights.</p>	

		Planting does not start before legal disputes have been resolved.	
The Project Developer must hold uncontested land title for the entire Project Boundary to complete Project Design Certification.		The concession contract is an uncontested land title for the entire project boundary.	1.
Principle 4.4 - Indigenous people			
Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	No, People in the area are not considered indigenous.		
>>			
Principle 5. Corruption			
1. The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects		The project follows the subsidiarity principle. Negotiations for land run with regional politicians on the lowest level possible. The closer politicians are to their	

		people, the lower the risk of corruption.	
Principle 6.1 Labour Rights			
<ol style="list-style-type: none"> 1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions 2. Workers shall be able to establish and join labour organisations 3. Working agreements with all individual workers shall be documented and implemented and include: <ol style="list-style-type: none"> a) Working hours (must not exceed 48 hours) 		<p>The project respects all employer's rights, with regards to health and safety. All employers are contracted with a description of working hours, duties and tasks, remuneration, modalities over contract termination and provision of annual leave.</p> <p>No child labour is allowed.</p> <p>Laborers get appropriate equipment for their work and safety.</p>	

<p>per week on a regular basis), AND</p> <p>b) Duties and tasks, AND</p> <p>c) Remuneration (must include provision for payment of overtime), AND</p> <p>d) Modalities on health insurance, AND</p> <p>e) Modalities on termination of the contract with provision for voluntary resignation by employee, AND</p> <p>f) Provision for annual leave of not less than 10 days per year, not including sick and casual leave.</p> <p>4. No child labour is allowed (Exceptions for children working on their families' property requires an <u>Expert Stakeholder</u> opinion)</p>			
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5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures			
Principle 6.2 Negative Economic Consequences			
1. Does the project cause negative economic consequences during and after project implementation?	No, Economic development is part of pillar 3 in the project		
>>			
Principle 7.1 Emissions			
Will the Project increase greenhouse gas emissions over the Baseline Scenario?	No, Fires are common in the region, causing baseline N ₂ O and CH ₄ and CO ₂ emissions. A fire prevention and fire sensitisation program are		
>>			

	part of the project pillar 2 and will reduce emissions over the baseline scenario.		
Principle 7.2 Energy Supply			
Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	No, The project has installed solar panels and batteries to provide its own energy. Fuel is purchased in the nearest city. No local fuel resource is used.		
>>			
Principle 8.1 Impact on Natural Water Patterns/Flows			
Will the Project affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	No, The plantation is rainfed. Only the tree nurseries use very limited amounts of river water, well within the boundaries of the natural capacity.		
>>			

Principle 8.2 Erosion and/or Water Body Instability			
a. Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion? b. Is the Project's area of influence susceptible to excessive erosion and/or water body instability?	Potentially, The landscape is sloped and the rains are heavy tropical rains. The soils are sandy, reducing the risk of erosion. There is a low to moderate risk of erosion, especially on the slopes of the river valley.	The project only ploughs and plants on the weak slopes. Heavy slopes are either left untouched or manually laboured. When ploughing on weak slopes, there is left a grass ridge between the laboured strips. Once forested, the soil will be less prone to erosion. Also, the fire prevention measures will prevent erosion in the region.	
>>			
Principle 9.1 Landscape Modification and Soil			
Does the Project involve the use of land and soil for production of crops or other products?	Yes, There is a limited area of land (about 250 ha) set aside for the development of agricultural activities under pillar 3.		
>> The Project shall identify the functions and services provided by the landscape and	Functions of the Savannah are	The forest will equally	

demonstrate no net degradation in existing landscape function and services.	<ul style="list-style-type: none"> - providing food - Providing fuel wood - preserving rainwater by infiltration 	<ul style="list-style-type: none"> - provide food - provide fuel wood - allow for rainwater infiltration 	
>> To ensure healthy soils the following aspects shall be identified, and appropriate measures shall be put in place to protect them: (a) Soil types, AND (b) Biota, AND (c) Erosion	<ul style="list-style-type: none"> (a) Soil type: ferralic arenosol (b) biota: Savannah grasslands (c) erosion: under baseline scenario, erosion takes place in the transition between the plateau and river valleys 	<ul style="list-style-type: none"> (a) litter deposition from trees will enrich the soil and fire prevention will prevent the degradation of soil fertility under baseline scenario. (b) litter will increase the soil organic carbon and soil biota (c) erosion: tree roots will prevent erosion 	Soil organic carbon is part of the monitoring plan
Measures shall be incorporated to minimise soil degradation (e.g., through crop rotation, composting, no use of heavy machinery, use of N-fixing plants, reduced tillage, no use of ecologically harmful substances)	Agriculture is preferred on non slopy areas. N-fixing plants such as beans and peanuts are used in rotation.		
Projects that involve the production, harvesting, and/or management of living natural	Agricultural activities are developed in close cooperation with local		

resources by small-scale landholders and/or local communities shall adopt the appropriate and culturally sensitive sustainable resource management practices.	communities. P2 and P3 adopt appropriate and culturally sensitive sources.		
Principle 9.2 Vulnerability to Natural Disaster			
Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	No, Trees will reduce vulnerability to wind and will provide shade in the sun. The tree roots will slow the runoff of rainwater on sloped hills and allow for better infiltration.		
>>			
Principle 9.3 Genetic Resources			
Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms	No, Endemic unmodified tree seeds are used. Seeds for agricultural crops are sourced locally and are non GMO.		

that include GMOs in their processes and production)?			
>>			
Principle 9.4 Release of pollutants			
Could the Project potentially result in the release of pollutants to the environment?	Yes, Plastic bags from the tree nursery	During planting the plastic bags from the tree nursery are collected and reused, if possible. Otherwise, they are collected and disposed to a recognised waste collection company.	Follow up of waste collection
>>			
Principle 9.5 Hazardous and Non-hazardous Waste			
Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	No, No hazardous or non-hazardous chemicals are used.		
>>			
Principle 9.6 Pesticides & Fertilisers			

Will the Project involve the application of pesticides and/or fertilisers?	Potentially, Application of pesticides and fertilisers is allowed, only if necessary, in the tree nurseries.		
>>			
Principle 9.7 Harvesting of Forests			
Will the Project involve the harvesting of forests?	No, Forest is planted for biodiversity only goals		
>>			
Principle 9.8 Food			
Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	Yes, The project will be developing agricultural activities in P2 and P3 to promote economic growth. Development of agricultural activities will diversify the diet and improve nutritional quality.	Development of agricultural activities will diversify the diet and improve nutritional quality.	
>> The Project activity shall not negatively influence access to and availability of food for people affected.			
Principle 9.9 Animal husbandry			

Will the Project involve animal husbandry?	Potentially, The project will stimulate smallholder farmers to grow animals to replace bushmeat from the Savannah.	In P2 activities smallholder farmers will be sensitized about animal growing and animal welfare	
Principle 9.10 High Conservation Value Areas and Critical Habitats			
Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats, landscapes, key biodiversity areas or sites identified?	No, The Savannah grasslands in the Kwango province are not identified as High Conservation Value ecosystems, critical habitats, landscape, or key biodiversity area. They are not part of a national government or WWF program.		
Principle 9.11 Endangered Species			
a. Are there any endangered species identified as potentially being present within the Project boundary (including	No, The area is not part of any conservation of biodiverse		

those that may route through the area)? b. Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	area. It is not part of a national government or WWF program. As far as known, species within the project boundary are not endangered. No transboundary effects are expected.		
>>			

APPENDIX 2- CONTACT INFORMATION OF PROJECT PARTICIPANTS

Organization name	N'situ Pelende SASU
Registration number with relevant authority	Société commerciale de droit Congolais, enregistrée sous le RCCM : CD/KNG : RCCM/21-B-01787
Street/P.O. Box	17 C Pierre Mulele avenue ex 24 nov. C/Gombe Kinshasa RDC
Building	Infinity Center
City	Kinshasa
State/Region	Kinshasa
Postcode	
Country	RDC
Telephone	+ 32 478 339115
E-mail	j.theys@codevco-rdc.com
Website	
Contact person	Helena Vanrespaille
Title	Carbon verification engineer
Salutation	Ms.
Last name	Vanrespaille
Middle name	Eva
First name	Helena
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Personal e-mail	h.vanrespaille@codevco-rdc.com

Organization name	OSIPE asbl
Registration number with relevant authority	Association sans but lucratif de droit Congolais, enregistrée sous le numéro F.92/49.949
Street/P.O. Box	17 C Pierre Mulele avenue ex 24 nov. C/Gombe Kinshasa RDC
Building	Infinity Center
City	Kinshasa
State/Region	Kinshasa
Postcode	
Country	DRC
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Middle name	
First name	Hélène
Department	
Mobile	+243 973 977 589
Direct tel.	
Personal e-mail	h.mbangu@codevco-rdc.com

APPENDIX 3- LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	Negligible risk, plantation is 1.5 years old
Risk of change to the Project activities during Project Certification Period:	Negligible risk
Land-use history and current status of Project Area:	Grasslands with history of slash and burn Status: conversion to forest
Socio-Economic history:	Limited subsistence agriculture, hunting for bushmeat
Forest management applied (past and future)	Past: slash and burn Future: biodiversity, no burning
Forest characteristics (including main tree species planted)	Mixed deciduous forest with 50% fast growing acacia and 50% endemic species <i>Acacia mangium x auriculiformis</i> <i>Acacia mangium</i> <i>Albizia lebbeck</i> <i>Canarium schweinfurthii</i> <i>Cassia fistula</i> <i>Cassia siamea</i> <i>Dacryodes edulis</i> <i>Dichrostachys cinerea</i> <i>Harungana madagascariensis</i> <i>Hevea brasiliensis</i> <i>Leucaena leucocephala</i> <i>Maesopsis eminii</i> <i>Millettia laurentii</i> <i>Pentaclethra macrophila</i> <i>Pentaclethra eetveldeana</i> <i>Ricinodendron heudelotii</i> <i>Schizolobium parahyba</i> <i>Terminalia superba</i>
Main social impacts (risks and benefits)	Benefits: <ul style="list-style-type: none"> - Creating long-term employment - Social Infrastructure: bridge over Konzi river, 2 schools, 1 medical centre, 15 manioc mills

	<p>Risks:</p> <ul style="list-style-type: none"> - Social instability
Main environmental impacts (risks and benefits)	<p>Benefits:</p> <ul style="list-style-type: none"> - Reducing emissions from fire - Increasing CO₂-sequestration - Biodiversity: Using local, endemic species <p>Risks</p> <ul style="list-style-type: none"> - Biodiversity: Land use change from natural Savannah to forest
Financial structure	Prefinancing by Colruyt Group
Infrastructure (roads/houses etc):	See figure 3, roads
Water bodies:	See figure 3, river Konzi between groupement Swa Kasongo and Swa Kahumba
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	Graveyards and natural elements or objects referring to ancestors have been respected
Where indigenous people and local communities are situated:	See figure 3, villages
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	See figure 3, fermes

APPENDIX 4-SUMMARY OF APPROVED DESIGN CHANGES

Please refer to Design Change [Requirements](#) for more information on procedures governing Design Changes

Revision History

Version	Date	Remarks
1.2	14 October 2020	<p>Hyperlinked section summary to enable quick access to key sections</p> <p>Improved clarity on Key Project Information</p> <p>Inclusion criteria table added</p> <p>Gender sensitive requirements added</p> <p>Prior consideration (1 yr rule) and Ongoing Financial Need added</p> <p>Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity</p> <p>Improved Clarity on SDG contribution/SDG Impact term used throughout</p> <p>Clarity on Stakeholder Consultation information required</p> <p>Provision of an <u>accompanying Guide</u> to help the user understand detailed rules and requirements</p>
1.1	24 August 2017	Updated to include section A.8 on 'gender sensitive' requirements
1.0	10 July 2017	Initial adoption