



**Verified Carbon
Standard**

FOREST CONSERVATION IN BOUMBA-ET- NGOKO



Document Prepared by Carbonsink Group S.r.l.

Project Title	Forest Conservation in Boumba-et-Ngoko
Version	1.0
Date of Issue	18/03/2022
Prepared By	Carbonsink Group S.r.l.
Contact	Piazza Beverini 4, 19121 La Spezia, Italy +39 055 4574675 info@carbonsink.it www.carbonsink.it

CONTENTS

1	PROJECT DETAILS.....	4
1.1	Summary Description of the Project	4
1.2	Sectoral Scope and Project Type	5
1.3	Project Eligibility	5
1.4	Project Design	5
1.5	Project Proponent	5
1.6	Other Entities Involved in the Project	6
1.7	Ownership.....	6
1.8	Project Start Date	7
1.9	Project Crediting Period	7
1.10	Project Scale and Estimated GHG Emission Reductions or Removals	7
1.11	Description of the Project Activity	9
1.12	Project Location	10
1.13	Conditions Prior to Project Initiation	12
1.14	Compliance with Laws, Statutes and Other Regulatory Frameworks.....	19
1.15	Participation under Other GHG Programs	19
1.16	Other Forms of Credit.....	19
1.17	Additional Information Relevant to the Project	20
2	SAFEGUARDS	21
2.1	No Net Harm	21
2.2	Local Stakeholder Consultation	21
2.3	Environmental Impact	21
2.4	Public Comments	21
2.5	AFOLU-Specific Safeguards	21
3	APPLICATION OF METHODOLOGY.....	22
3.1	Title and Reference of Methodology	22
3.2	Applicability of Methodology	22
3.3	Project Boundary	24

3.4	Baseline Scenario	27
3.5	Additionality	29
3.6	Methodology Deviations	30
4	ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS.....	31
4.1	Baseline Emissions	31
4.2	Project Emissions	31
4.3	Leakage.....	31
4.4	Estimated Net GHG Emission Reductions and Removals.....	31
5	MONITORING	32
5.1	Data and Parameters Available at Validation	32
5.2	Data and Parameters Monitored.....	32
5.3	Monitoring Plan.....	32
6	ACHIEVED GHG EMISSION REDUCTIONS AND REMOVALS.....	32
6.1	Data and Parameters Monitored.....	32
6.2	Baseline Emissions	32
6.3	Project Emissions	32
6.4	Leakage.....	32
6.5	Net GHG Emission Reductions and Removals.....	32

1 PROJECT DETAILS

1.1 Summary Description of the Project

The Forest Conservation in Boumba-et-Ngoko Project (FCBN) is located in one of the densest and most important forest areas in Cameroon, in the southern part of the eastern region, near the border with Congo and the Central African Republic. It is a state-owned forest granted in concession for the exploitation of wood resources, and like all neighboring areas, is of great economic interest due to the presence of high-value timber species. Since 2002, this forest unit has been managed by the company La Filière Bois (LFB), which harvests volumes of commercial timber from it, following the terms of the management plan that was drawn up at the start of management.

The VCS Improved Forest Management (IFM) - Logged to Protected Forest (LtPF) project aims to preserve a part of the forest from the exploitation of forest resources, which would anyway be used in the following years as foreseen in the documents approved by the Ministère des Forêts et de la Faune (MINFOF) - Ministry of Forests and Wildlife. The area that will be exempted from the work is approximately 44'066 ha for an estimated volume of XX m³ of forest not been harvested.

From the cessation of timber harvesting activities, which is present in the baseline scenario, the project aims to avoid emissions generated by logging, transport, processing of raw material as well as collateral damage to vegetation caused by the fall of cut trees on surrounding plants, decomposition of material left in the forest, construction of forest tracks for transport to the storage point, construction of hydraulic engineering works, construction of bridges and other infrastructure. A further advantage that the project will bring to the area is due to the cessation of the disturbance caused by logging activities to the fauna present in this area, which is very rich and varied, thanks also to the proximity of the Lobéké National Park, which includes, among other species, forest elephants (*Loxodonta africana cyclotis*), gorillas (*Gorilla gorilla*), cephalophines (*Cephalophus monticola* and *C. sylvicultor*), chimpanzees (*Pan troglodytes*), red river hog (*Potamochoerus porcus*). The lack of infrastructure will also act as a deterrent to illegal logging and poaching activities, as the absence of an extensive, secure road network that goes deep into the forest will make these activities more difficult to carry out.

Thanks to the absence of logging, the forest will be able to store carbon through the growth and development of trees over the years, as well as eliminating emissions from harvesting, processing and production.

From the implementation of the Project, it is estimated that a net average of 191'321.27 tonnes of GHG emissions will be avoided from entering the atmosphere annually. Over the entire Project Crediting Period, it is estimated that a net total of 2'678'497.78 tonnes of GHG emissions will be avoided through the implementation of the Project.

1.2 Sectoral Scope and Project Type

The project is developed under VCS sectoral scope 14 – Agriculture, Forestry and Other Land Uses (AFOLU). The category is Improved Forest Management (IFM) and the activity type is Conversion from Logged Forest to Protected Forest (LtPF). The project is not a grouped project.

1.3 Project Eligibility

This Project is an eligible IFM project as it reduces GHG emissions in the whole project area from sawn wood and fuelwood, as well as emissions due to the construction of infrastructures both for the operation of machinery and collateral damages caused by forest exploitation. For these reasons, the reduction of carbon emissions will be achieved through the improvement of forest management, avoiding any kind of cutting in the whole project area.

Both the baseline and project scenarios for the project area qualify as forests remaining as forests, such as set out in the IPCC 2006 Guidelines on National GHG Inventories.

The project area falls entirely within a state-owned area defined by law and included in the Cameroonian Permanent Forest Estates. VM0010 methodology used to implement this project is appropriate as La Filière Bois holds the right to exploit the forest stand.

The project corresponds to the "Logged to Protected Forest" (LtPF) activity, which includes practices for converting the forest from a productive state to a conservative one, allowing the natural growth or regrowth of the forest stand, preventing trees from being cut down and ensuring greater carbon storage in the biomass.

For these reasons, the project is considered eligible under the VM0010 procedure.

1.4 Project Design

As defined under the VCS (*VCS Standard 4.1, 2021*), the project has been designed as a single installation of an activity. The proposed project it is not a grouped project.

1.5 Project Proponent

Organization name	CarbonSink Group S.r.l.
Contact person	Tania Cencetti
Title	NBS Manager

Address	Via Madonna del Piano, 6 50019 Sesto Fiorentino - Firenze (Italy)
Telephone	+39 055 4574675
Email	tania.cencetti@carbonsink.it

1.6 Other Entities Involved in the Project

Organization name	La Filière Bois
Role in the project	Project Implementer on the field
Contact person	Angelo Piazzalunga
Title	Head of Certification
Address	146 Rue des Ecoles, Douala (Cameroon)
Telephone	+39 349 3935299
Email	piazzalunga@vastolegno.com

1.7 Ownership

The Cameroonian National Forest Estate (NFE) is divided into Permanent Forest Estate (PFE) and non-Permanent Forest Estate (nPFE). PFE consists of lands designated to remain as either forest or wildlife habitat. By law, PFE must cover 30% of national territory and must be sustainably managed according to management plans approved by the relevant administrative authority. To be managed, forests are divided in Forest Management Units (in French Unité forestière d'Aménagement - UFA) and given in concession by competitive bidding process. As part of the development of a management plan, concessionaires are required to divided into 6 Units of exploitation (Unités Forestières d'Exploitation - UFE), or blocks, realised by average volumes and subdivided again into 5 annual logging areas (Assiettes annueles de coupe – AAC) done by surface, with a maximum difference about 2,5% each other.

The project area falls within UFA 10-064, located in the south-eastern part of Cameroon on the border with the Central African Republic and the Republic of Congo, and has an extension of 115'842 hectares, the UFA Management Plan is effective for 30 years and was implemented in 2002 by La Filière Bois (LFB).

The project is completely owned by LFB, which holds the exploitation rights for UFA 10-064, the logging rights were acquired by LFB from the MINFOF through the order 0974 of 20th November 2007. The proponent will provide original concession license documents upon project validation.

1.8 Project Start Date

The project start date is established as 01/01/2018 as the first year since La Filière Boishas suspended the annual commercial timber harvest within the UFA 10-064 block. On that date, LFB had already begun the process of GHG emission reductions by not performing any logging activities for the year 2017/2018 (and the following years).

1.9 Project Crediting Period

Crediting period start date: 01-01-2018

Crediting period end date: 31-12-2037

Crediting period: 20 years

Crediting period will start from the cessation of logging operations.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	X
Large project	

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2018	191'321.27
2019	191'321.27
2020	191'321.27
2021	191'321.27
2022	191'321.27

2023	191'321.27
2024	191'321.27
2025	191'321.27
2026	191'321.27
2027	191'321.27
2028	191'321.27
2029	191'321.27
2030	191'321.27
2031	191'321.27
2032	191'321.27
2033	191'321.27
2034	191'321.27
2035	191'321.27
2036	191'321.27
2037	191'321.27
Total estimated ERs	3'826'425.4
Total number of crediting years	20
Average annual ERs	191'321.27

1.11 Description of the Project Activity

The project area is entirely located into the UFA 10-064, in the south-eastern region of Cameroon, and is part of the Permanent Forest Estate. The area is classified as a dense forest.

As required by the Cameroonian Law, the forest is divided into 6 Units of exploitation (Unités Forestières d'Exploitation - UFE), or blocks, realised by average volumes and subdivided again into 5 annual logging areas (Assiettes annuelles de coupe – AAC) done by surface, with a maximum difference about 2,5% each other.

Main local species presents in the project area are: Ayous/Obeche (*Triplochiton scleroxylon*); Fraké (*Terminalia superba*); Sapelli (*Entandrophragma cylindricum*); Tali (*Erythrophleum suavolensis*); Emien (*Alstonia bonei*). Forest area was harvested until his acquisition by La Filière Bois, in 2002, following the guidelines in the Management Plan approved by MINFOF.

From 2017/2018 La Filière Bois considered to analyse the opportunity to reduce GHG emission due to harvest activities and turn the logging forest into a protected forest act to improve the carbon sink stocks.

This project aims to prevent the logging GHG emission avoiding any kind of commercial harvest and other linked to logging activities, as decomposition of harvested tree, bark burning, emissions due to carbon fraction sequestered from wood products over time. Avoiding production activities will give benefits even to the biodiversity, removing negative impacts from forest degradation and disturbance.

In the Baseline scenario, forest regrowth contributed to carbon sequestration after timber logging operations. The project scenario aims to avoid logging so that carbon is stored as long as possible by the forest's carbon sink even over project longevity.

Productive surface into the project is about 44'066 ha of forest land, part of UFE bloc 4 and entire UFE blocs 5 and 6, which is corresponding approximately at 38% of the total UFA 10-064 surface. The project surface is at the net of wetlands areas, mandatory protected by Cameroonian forestal laws, as previously mentioned.

Because of the intrinsic conservation nature of this IFM project, there are no specific technologies, services or products involved in its implementation. Beyond the creation and sale of GHG credits, the Forest Conservation Project activities will be focused on property supervision and monitoring. In order to monitor any disturbances that may affect the whole forest, LFB has undertaken to have a permanent control team that monitors the state of the forest with regard to diseases, hunting, fires etc. This ecosystem will then continue to provide its services to all the communities and entities that depend on it.

In the present document, it is demonstrated that the project activity is additional and not the most financially attractive scenario.

The FCB project is located within a jurisdiction that is not covered by a jurisdictional REDD+ program.

1.12 Project Location

The FCB project area is located in the Moloundou district, Boumba-et-Ngoko department, in the Eastern Region of the Republic of Cameroon. The project area is fully located inside UFA 10-064.

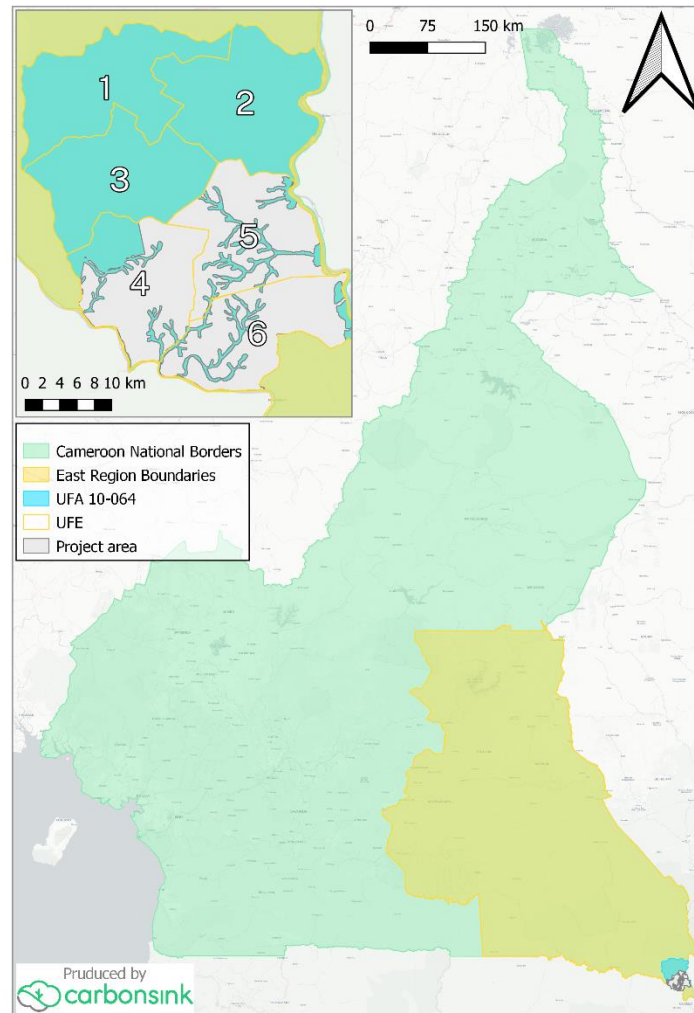


Figure 1: UFA 10-064 localization in Cameroon

This forest area is bordered to the north by the Lobéké National Park, to the east by the Sangha River, the natural border between the Republic of Cameroon and the Republic of Congo, to the south by the Ngoko River, which separates the two above-mentioned nations, and to the west by UFA 10-064.

Moloundou, the largest settlement, is located approximately 60km as the crow flies from the affected area.

The Project Area was delineated based on the areas designated for timber harvesting (Production Areas) for the project crediting period 2002-2031 within UFA 10-064.

WGS 84 - UTM32633		
Name	x	y
1	601.730.185	196.985.301
2	601.446.234	198530.75
3	598.047.983	197.690.732
4	596.331.303	202.614.954
5	594.012.287	202.627.389
6	592.591.191	204.370.945
7	592.358.735	208.101.591
8	599.817.228	210.993.917
9	599067.5	214.643.946
10	602.297.594	214.486.542
11	606.445.839	217866.96
12	610.750.137	221.999.144
13	612.039.696	220.034.755
14	613.607.101	220.485.803
15	616.597.212	219.759.814
16	617.565.893	216.831.772
17	619.880.536	212651.74
18	620.323.342	208.943.656
19	623.082.862	208.823.737
20	622879.96	207.872.113
21	624.208.805	201.522.269
22	621.612.295	200.266.203
23	619691.87	201.391.484
24	615.030.828	201695.07
25	615.361.611	199.108.543
26	613.726.994	195.376.011

Table 1: Vertex coordinates

The total Project Area that will be set aside for Conversion from Logged-to-Protected Forests is 44'066 ha of forest land, part of UFE bloc 4 and entire UFE blocs 5 and 6, which is corresponding approximately at 38% of total UFA 10-064 surface. The project surface is at net of wetlands areas, mandatory protected by Cameroonian forestall laws.

1.13 Conditions Prior to Project Initiation

Prior to the implementation of the project, the forest within the project area was logged annually according to the timber harvest plan.

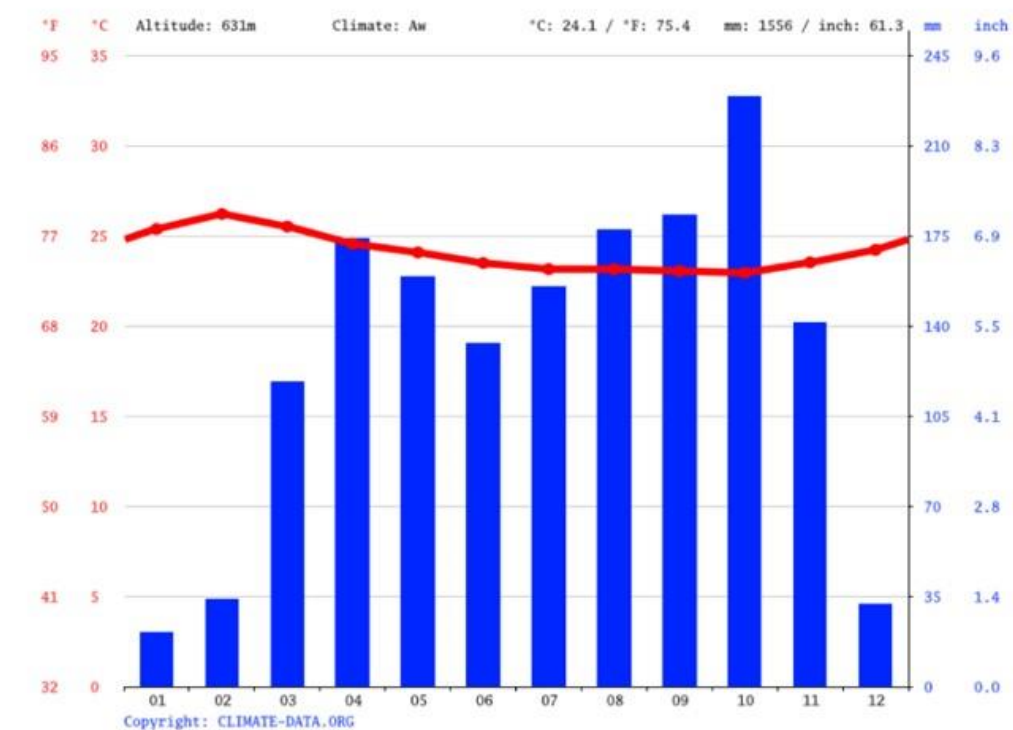
Climate

The climate of the region is equatorial continental. It is influenced by the monsoon and the harmattan wind. There are four seasons during the year:

- the main rainy season from September to November
- the long dry season from December to February
- the short rainy season from March to June
- the short dry season from July to August.

The average rainfall for a 10-year period is 1'556 mm per year.

CLIMATE GRAPH // WEATHER BY MONTH MOLOUNDOU



The least amount of rainfall occurs in January. The average in this month is 21 mm | 0.8 inch. Most precipitation falls in October, with an average of 229 mm | 9.0 inch.

Figure 2: Rainfall and Temperature records¹

¹ Source <https://en.climate-data.org/> reference date 26/10/2021

The average monthly temperatures range from 22.9°C to 26.2°C. The average annual temperature is 24.5°C. The average relative air humidity is about 80% over the year.

AVERAGE TEMPERATURE MOLOUNDOU

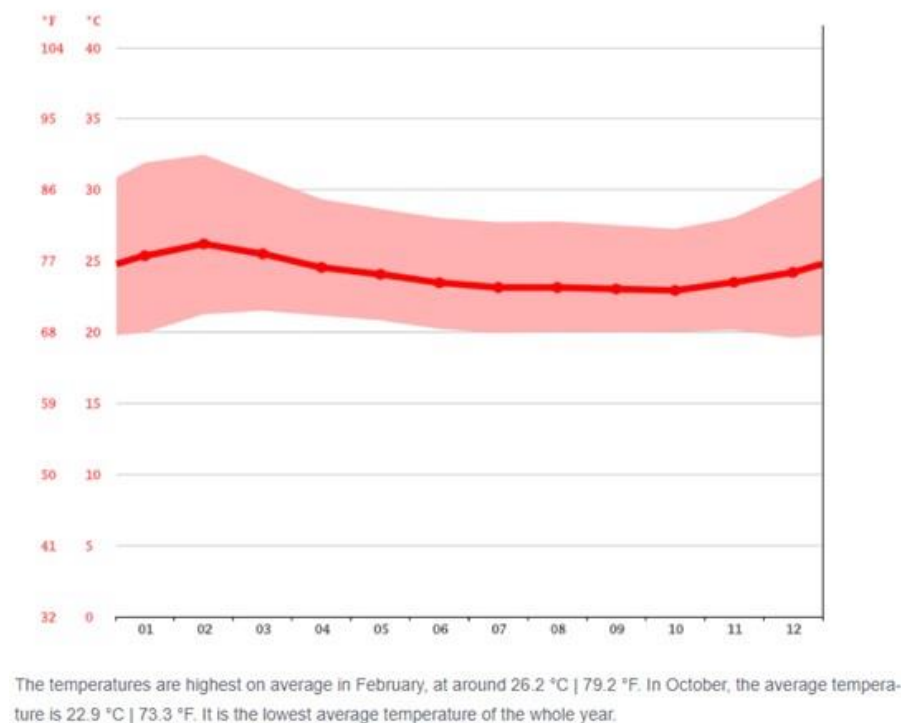


Figure 3: Average Temperature Graph²

Meteorological data (rainfall, temperature and relative air humidity) collected from the departmental delegation of agriculture in Yokadouma over a 10-year period.

² Source <https://en.climate-data.org/> reference date 26/10/2021

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C	25.4 °C	26.2 °C	25.5 °C	24.5 °C	24.1 °C	23.5 °C	23.1 °C	23.1 °C	23 °C	22.9 °C	23.5 °C	24.2 °C
(°F)	(77.7) °F	(79.2) °F	(77.9) °F	(76.2) °F	(75.3) °F	(74.3) °F	(73.7) °F	(73.6) °F	(73.5) °F	(73.3) °F	(74.3) °F	(75.6) °F
Min. Temperature °C (°F)	20 °C (67.9) °F	21.3 °C (70.3) °F	21.5 °C (70.7) °F	21.2 °C (70.1) °F	20.8 °C (69.5) °F	20.2 °C (68.4) °F	19.9 °C (67.9) °F	20 °C (68.1) °F	20 °C (68) °F	20 °C (68) °F	20.1 °C (68.3) °F	19.6 °C (67.3) °F
Max. Temperature °C	31.9 °C	32.5 °C	30.9 °C	29.4 °C	28.7 °C	28 °C	27.7 °C	27.8 °C	27.5 °C	27.3 °C	28.1 °C	29.9 °C
(°F)	(89.5) °F	(90.5) °F	(87.7) °F	(84.8) °F	(83.6) °F	(82.5) °F	(81.9) °F	(82) °F	(81.5) °F	(81.1) °F	(82.5) °F	(85.8) °F
Precipitation / Rainfall	21	34	118	174	159	133	155	177	183	229	141	32
mm (in)	(0.8)	(1.3)	(4.6)	(6.9)	(6.3)	(5.2)	(6.1)	(7)	(7.2)	(9)	(5.6)	(1.3)
Humidity(%)	57%	60%	74%	84%	86%	85%	83%	83%	86%	89%	86%	71%
Rainy days (d)	3	5	12	16	18	17	18	19	19	20	13	5
avg. Sun hours (hours)	9.3	8.6	7.6	6.7	6.7	6.2	5.7	5.1	4.9	5.0	6.3	8.8

Figure 4: Climate data per month³

Hydrology

In hydrographic terms, UFA 10-064 belongs to the Congo Basin. Its hydrographic network is relatively dense. It is watered by the tributaries of the Sangha and Ngoko rivers. The main watercourses are the Bolou, Mikongo, Moboussamba and Mokoto to the west of the UFA, Ngoko to the south, Moko-paka, Ndjoke, Kimou, Bolima, Nadimaguina and Ndjangué to the north, and the River Sangha to the east.

These rivers form complexes of floodable and marshy forests, the main ones being situated along the River Sangha. The hydrological regime of the watercourses is closely linked to the rainfall pattern. The maximum water levels are observed from October to November, and the minimum levels from January to February.

³ Source <https://en.climate-data.org/> reference date 26/10/2021

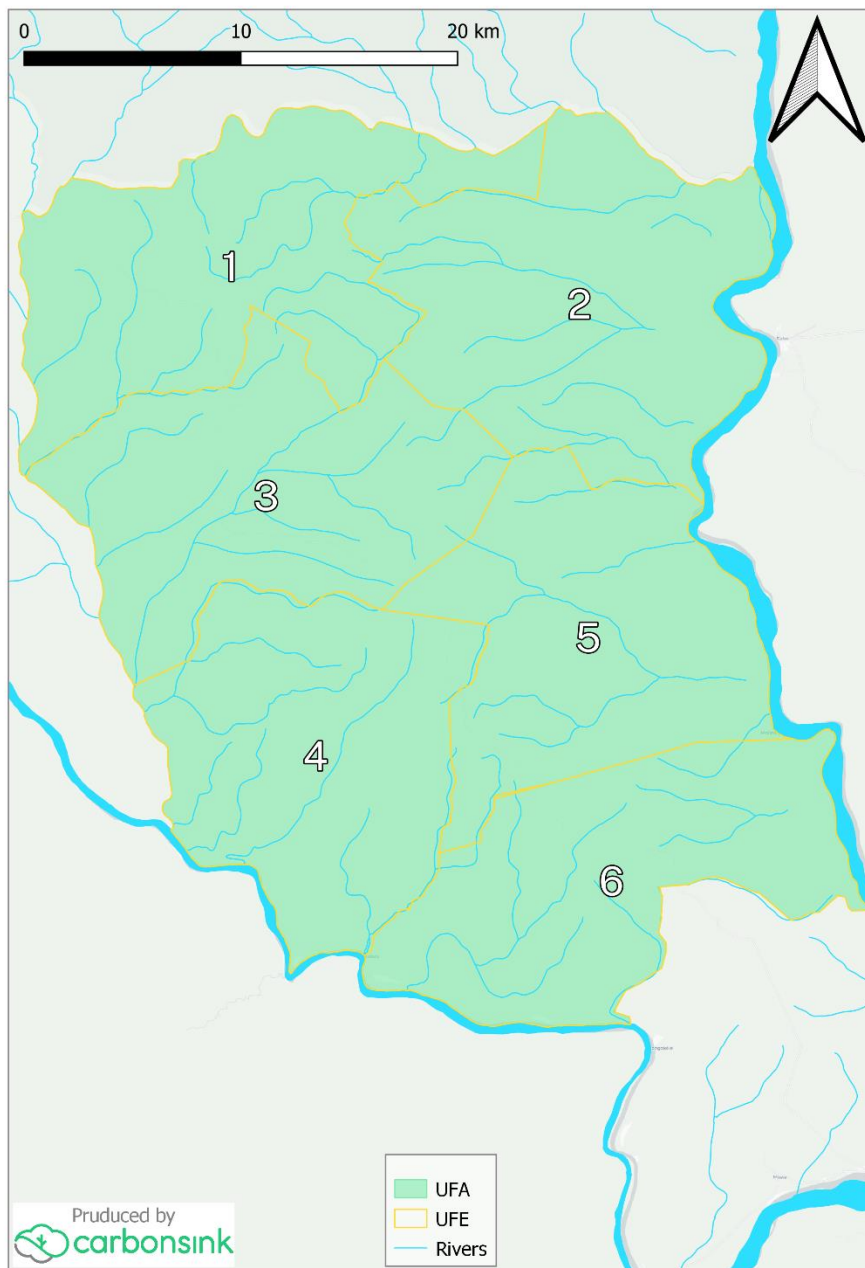


Figure 5: Water streams in UFA 10-064

Topography

UFA 10-064 is located on the north-west side of the Congo basin. Its landform is relatively flat, with a few hills. Its altitude ranges between 400 and 520 meters. The altitude decreases from north to south.

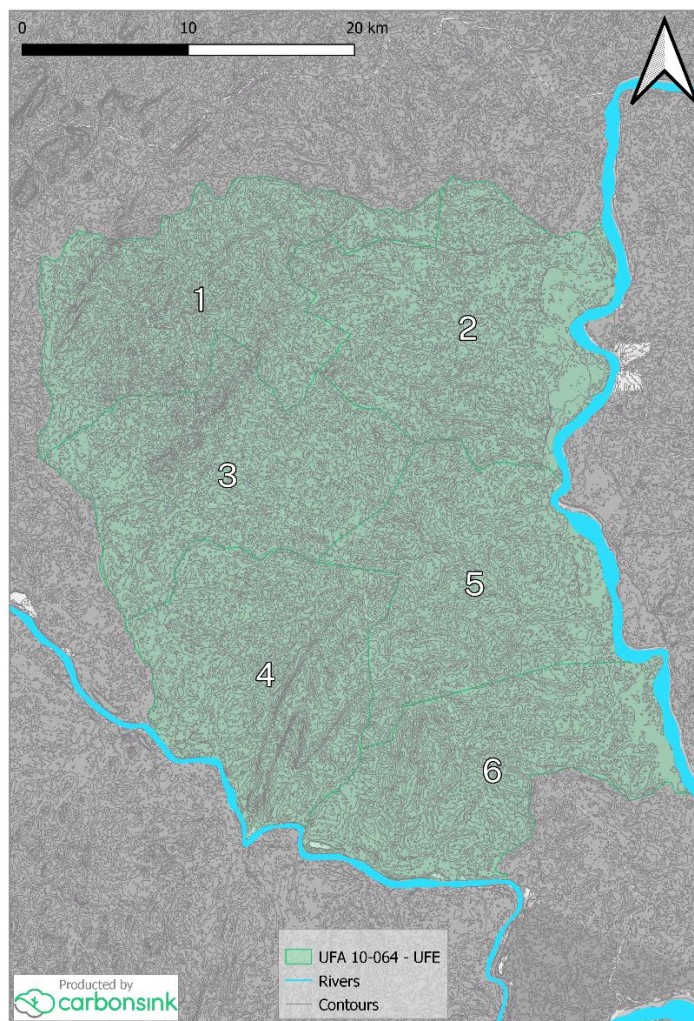


Figure 6: Topography contours in UFA 10-064

Geology and Pedology

The area of UFA 10-064 consists of metamorphic formations from the Precambrian to Cambrian eras belonging to the lower Dja series, mainly consisting of tillites, quartzites, shale, limestone and dolerite. In the low-laying areas, these geological formations are covered with alluvium dating from the quaternary era. The soils are hardened and covered in places by ferruginous duricrust. They are lateritic soils deriving from ancient metamorphic rocks. They are acid and clayey, with a low content of nitrogen and exchangeable bases. Their humus layer is relatively thin. Hydromorphic soils are also found in some places.

Vegetation

Forest formations on dry land

According to Letouzey's classification (1985), UFA 10-064 belongs to the semi-deciduous sector sensu stricto of the Guinean-Congolian dense humid semi-deciduous forest domain represented by two types of forest formation:

- semi-deciduous forests with sterculiaceae and ulmaceae;
- mixed, semi-deciduous and evergreen forests of the Dja, with predominantly semi - deciduous forest elements.

These semi-deciduous forests differ from the evergreen forest by the presence of more numerous large trees with more rectilinear shafts and greyer bark, rare tabular tops, and the foliage of many tree species that are deciduous for a few weeks or days during the dry season. The main species encountered that are of interest for forestry are: Ayous (*Triplochyton scleroylon*), Sapelli (*Entandrophagma cylindricum*), Fraké (*Terminalia superba*), Tali (*Erytrophleum ivorense*), Kotibé (*Nesogordia papaverifera*), Kossipo (*Entandrophragma candolei*), Dibetou (*Lovoa trichilioides*), Padouk rouge (*Pterocarpus soyauxii*), Eyong (*Eribloma oblogum*), Diana Z (*Celtis zenkeri*).

Forest formations on flooding subject land

In the southern and eastern parts of the UFA, there are important swamp forests, especially along the tributaries of the Sangha and Ngoko rivers. In the central and northern parts of the UFA, there are also numerous sites with special vegetation formations such as raphiales, marshy clearings, salines and bauges. All these raphiales' formations, swamp forests or periodically flooded forests with raphiales are formations consisting of clumps of palms and variable areas dominated by palms.

Fauna

UFA 10-064 is home to a rich and diverse fauna. The fauna inventory carried out by the WWF Jengi South-East project on behalf of the Société Filière Bois on the status of large and medium-sized mammals (Nzouh Dogmo et al. 2002) in the UFA 10-064 shows that it contains a fairly high number of forest elephants (*Loxodonta africana cyclotis*), lowland gorillas (*Gorilla gorilla*), red duikers and blue duikers (*Cephalophus monticola*). However, animals such as bongos (*Tragelaphus euryceros*), buffalo (*Syncerus caffer nanus*), bushpigs (*Potamochoerus porcus*), chimpanzees (*Pan troglodytes*) and yellow-backed duikers (*Cephalophus sylvicultor*) are less numerous in this forest.

Other studies in the Lobéké National Park adjacent to the northern part of UFA 10-064 (Ekobo, 1994; WCS, 1996; Makazi et al., 1998) show that the area contains several different species of large and medium-sized mammals, birds, reptiles, amphibians, fish, shrimps and lepidopterans.

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

The Cameroon legislature on forest regulation is identified by law n° 94/01 of 20th January 1994, which defines the different types of forest that are part of the State Forest domain, which also includes production forests. These are then divided into forest management units (Unité Forestière d'Aménagement - UFA), and as specified by the aforementioned law, they require a forestry concession to be exploited. The law indicates that, once this concession has been obtained, it is necessary to produce a Management Plan for the whole UFA for the period of the authorization according to the guidelines set out in order No. 222/A/MINEF/ 25 May 2002, which also designates the approval, observation and control procedures. Once approved, the management plan of a UFA is thus effectively in compliance with the legislative requirements of the Republic of Cameroon.

The management plan of UFA 10-064 was approved by MINFOF in 2007 for the forestry concession allocated to La Filière Bois, thus complying with all the requirements of legality as regards the exploitation of wood resources.

Further synonymous with good forestry conduct on the part of the concessionaire, are the certificates of origin of the wood (Origine et Légalité du Bois - OLB), which attest to the legality and traceability of the timber through an official certificate issued by an independent third party, which have been recognised at La Filière Bois since 2010 and which cover all the timber harvested in this UFA for 2018, the year in which this project began, until 2020 (those documents are available if requested).

1.15 Participation under Other GHG Programs

1.15.1 Projects Registered (or seeking registration) under Other GHG Program(s)

The project is neither registered nor intended to be registered for other GHG programs.

1.15.2 Projects Rejected by Other GHG Programs

The project activity has not been rejected by any other GHG programs.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

The project is not involved in trade or binding limits programs.

1.16.2 Other Forms of Environmental Credit

Project activities are not addressed to generate any type of environmental credit for GHG removal or reduction declared in the VCS program.

1.17 Additional Information Relevant to the Project

Leakage Management

Refer to section 4.3 of the document.

Commercially Sensitive Information

No commercial information is contained in this document. If otherwise indicated or if requested during validation, any useful document will be made available to the VVB.

Sustainable Development

Given the ecosystem importance of this type of forest, its protection for both forestlands and wetlands through the implementation of the project will make a major contribution to the enhancement of biodiversity (forest canopy) and the habitat biocenosis, which are extremely rich in this area of Cameroon. The FCB project, will result in additional benefit to the environment, as well as increasing carbon sequestration in a very significant way.

Further Information

There are no any other additional relevant information.

2 SAFEGUARDS

2.1 No Net Harm

Information will be made available at validation/registration

2.2 Local Stakeholder Consultation

Information will be made available at validation/registration

2.3 Environmental Impact

Information will be made available at validation/registration

2.4 Public Comments

Information will be made available at validation/registration

2.5 AFOLU-Specific Safeguards

Information will be made available at validation/registration

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

The PROJECT uses the Verified Carbon Standard – Approved VCS Methodology VM0010 – Methodology for Improved Forest Management: Conversion from Logged to Protected Forest (v 1.3, 28 April 2016, Sectoral Scope 14).

Listed below there are the latest versions of the modules and tools indispensable for the application of the methodology:

- *VCS tool VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (v3.0, February 2012, Sectoral Scope 14)*
- *VCS AFOLU Non-Permanence Risk Tool (v4.0)*
- *CDM Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities (v2.1.0)*
- *CDM Tool for testing significance of GHG emissions in A/R CDM Project Activities*

3.2 Applicability of Methodology

The project meets all the applicability requirements of the methodology VM0010, as summarised in the table below:

Table 1. VM0010 methodology applicability conditions

Applicability Conditions	Project Justification
Forest management in the baseline scenario must be planned timber harvest	When the project was implemented, the entire UFA was managed through a forest management plan, which divided the entire forest into five-year logging blocks, addressing the forest to productive activity.
Under the project scenario, forest use must be limited to activities that do not result in commercial timber harvest or forest degradation	In the project scenario all logging activities in the forest are suspended, so there will be no exploitation of products from this UFA.

Planned timber harvest must be estimated using forest inventory methods that determine allowable off take as volume of timber (m3/ha)	The forest inventory is carried out when the UFA Management Plan is drawn up. All logging activities are conducted once they have been approved by MINFOF, which authorises the exploitation of an AAC (Assiettes annueles de coupe) within the limits of the permitted cubage (m3/ha).
The boundaries of the forest land must be clearly defined and documented	As part of the Cameroonian Republic's forest domain, the boundaries of the UFA are defined by law, identified in the management plan, and clearly visible in the field. Are shown here in Figure 1.
The baseline scenario cannot include conversion to managed plantations	Land use conversions are forbidden by law in the concession forest domain. ⁴
The baseline scenario, project scenario and project case cannot include wetland or peatland	Cameroonian law protects wetlands within production forests by including them in the HVC (Haute valor de conservation) High Conservation Values, so all wetlands, swamps, or areas with watercourses and surrounding areas within 30 meters of them are excluded from production areas and therefore excluded a priori from project areas. ⁵
All applicability conditions of VCS and CDM tools used in conjunction with this methodology must be met.	The project description document meets all applicability conditions of VCS and CDM tools used in conjunction with the VM0010 methodology.

Table 2. Applicability conditions of VCS and CDM tools used in conjunction with the VM0010

VCS/CDM Tools	Applicability Conditions	Justifications
VCS tool VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities	AFOLU activities similar to the proposed Project Activity on the proposed Project Activity performed with or without being registered as the VCS AFOLU project shall not lead to violation of any applicable law even if the law is not enforced.	Project activities are in line with Cameroon's forestry regulations.
	The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise	The tool was used to determine the most plausible baseline scenario through a stepwise approach.

⁴ Décision n° 0108/D/MINEF/CAB du 09 février 1998 – Normes d'intervention en milieu forestier – Chapitre X

⁵ Décision n° 0108/D/MINEF/CAB du 09 février 1998 – Normes d'intervention en milieu forestier – Art. 15

	approach justifying the determination of the most plausible baseline scenario. Project Proponents proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a Project Activity.	
CDM Tool for testing significance of GHG emissions in A/R CDM Project Activities	To determine which decreases in carbon pools and increases in emissions of the greenhouse gases measured in CO2 equivalents that result from the implementation of the A/R Project Activity, are insignificant and can be neglected.	Negligible values are reported in the determination of GHG emissions.
	To ensure that it is valid to neglect decreases in carbon pools and increases in GHG emissions by sources stated as being insignificant in the applicability conditions of an A/R CDM methodology	Motivations of negligibility have been explained.

Therefore, the Forest Conservation in Boumba-et-Ngoko project is fully compliant with all the listed applicability conditions in the selected methodology.

3.3 Project Boundary

The geographical boundaries of the project area are to be identified in the south of UFA 10-064, in UFE 4 there are the AAC 4-2 , 4-3 , 4-4 , 4-5 , and the entire UFEs 5 and 6 which are located in the south-eastern part of Cameroon, as presented in *Figure 1*. The project area boundaries are well defined and will not change as the project evolves and are outlined in *Section 1.12* of this document. Regarding the temporal boundaries of the project, we can refer to the credit period from 1/1/2018 to 31/12/2037.

Carbon pools

The carbon pools included or excluded from the project boundary are shown in the table below:

Table 3. Carbon pools as identified in methodology

Carbon pools	Included?	Justification / Explanation of choice
Aboveground trees	Included	The stock change in the above ground tree biomass must be estimated
Above ground non-tree	Excluded	Exclusion is always conservative when forests remains as forest
Belowground	Excluded	Unlikely to change significantly in forests remaining as forests and is difficult to measure-omission is conservative
Deadwood (logging slash)	Included in the baseline	The dead wood (logging slash) carbon pool is expected to be larger in the baseline than in the project scenario, and therefore this pool must be included
Dead wood (naturally accumulated)	Excluded	Following IPCC guidelines ¹ , it is assumed that carbon stocks in the naturally occurring dead wood pool (both standing and lying) are equivalent in both the project and baseline scenario, and therefore this pool is conservatively excluded. It is not conservative to account for this pool in the baseline scenario only.
Harvested wood products	Included	Will be greater in baseline than project scenario and significant
Litter	Excluded	Insignificant and exclusion is conservative
Soil organic carbon	Excluded	Exclusion is always conservative when forests remains as forest

Emission Sources

The emission sources included or excluded from the project boundary are shown in the table below:

Table 4. GHG emission sources

Source		Gas	Included?	Justification/Explanation
Baseline	Combustion of fossil fuels (in vehicles, machinery and equipment)	CO ₂	Excluded	Conservative as emissions will be greater in the baseline scenario than in the project scenario.
		CH ₄	Excluded	
		N ₂ O	Excluded	
		Other	Excluded	
	Burning of biomass	CO ₂	Excluded	Not applicable in the project area region, the practice of burning after logging is not commonly applied.
		CH ₄	Excluded	
		N ₂ O	Excluded	
		Other	Excluded	
Project	Combustion of fossil fuels (in vehicles, machinery and equipment)	CO ₂	Excluded	Excluded from the calculation as the estimate is conservative.
		CH ₄	Excluded	
		N ₂ O	Excluded	
		Other	Excluded	
	Burning of biomass	CO ₂	Excluded	Not applicable in the project area region, the practice of burning after logging is not commonly applied.
		CH ₄	Excluded	
		N ₂ O	Excluded	
		Other	Excluded	

3.4 Baseline Scenario

As required by the methodology, the *VT0001: Tool for the Demonstration and Assessment of Additionality in AFOLU Project Activities* is used to assess which of the baseline alternatives must be excluded from further consideration. In particular, this section responds to the:

Step 1. Identification of alternative land use scenarios to the proposed VCS AFOLU project activity of the abovementioned tool.

The project developer has identified two (2) plausible baseline scenarios as alternatives land uses for the project area:

Alternative 1. Continuation of the pre-project land use

The VM0010 Methodology requires the project proponent as an Eligibility aspect, to demonstrate 1) the legal right to harvest, and 2) the intent to harvest. As mentioned in *Section 3.2* of this PDD, LFB holds the legal forestry exploitation rights for the entire UFA 10-064, in accordance with the provisions drawn up when the management plan is implemented, as laid down in the Cameroon forestry law and approved by MINFOF. Since 2002, the forest has been actively logged and, in accordance with the Forest Management Plan, an average gross volume of around 35 m³/ha would have been removed from the AAC causing also substantial collateral damage through logging operations, fall damage, clearing, opening of forest tracks, creation of storage parks, creation of forest infrastructure, etc. Therefore, in the absence of the Project, the forests in the Production Areas of the UFA would have been logged according to the Forest Management Plan approved by the local government.

Alternative 2. No Harvest

In this scenario, it is proposed that forest management would be abandoned by LFB and this would be an alternative that does not generate revenues from wood sales. The consequence will be the withdrawal of all monitoring activities, including land patrolling and general surveillance, control on poaching activities, illegal logging and periodical check on the phytosanitary status.

Outcome of Step 1: The most suitable baseline scenario would be the continuation of the planned timber harvest according to the governmental approved management plan.

Modelling the Baseline Scenario

For Baseline Scenario modelling, as explicated in section 6.2 of the methodology, it was selected the Historical Baseline Scenario approach, referring to the Management Plan of UFA 10-064 considering the existence of the following documents:

1. *Historical records of forest management exist for a minimum of 5 or more years preceding the project start date.*

The UFA 10-064 management plan was approved by the MINFOF in 2007. Moreover, every year an annual operation plan is realised, in accordance with an “annual operations permission” which indicates, in addition to the number of the AAC to be exploited, the volumes of timber to be cut for the operating year. The UFA has been exploited, as reported from the management plan, since 2002.

2. Historical records indicate that the management practices have surpassed the legal requirements (provided by conforming to all local and regional forest legislation).

According to Cameroon law, the forest management plan, to be valid, must be approved by MINFOF. Regarding UFA 10-064, the approval of the management plan took place on MINFOF 20th November 2007 through the order 0974.

3. Historical records that indicate that the historical management surpasses financial barriers by providing above average financial returns.

The following data refers to the economic benefits that LFB has recorded in its financial statement in the management of UFA 10-064. The following data were included in the forest management plan, subsequently approved by MINFOF with order 0974 already mentioned in Section 1.7.

The monetary currency has been converted to €. ⁶

Table 5. Financial statement of UFA 10-064 Management Plan

Expenses	288'199'951.42 €
Earnings	149'995'175.51 €
Revenues	438'195'126.93 €

The management plan for UFA 10-064 fully complies with the requirements described in “Box 1: Timber Harvest Plan” of the VT0001: Tool for the Demonstration and Assessment of Additionality in AFOLU Project Activities and will be made available if requested.

⁶ Exchange rate is calculated on 17/01/2022 from <https://www.beac.int/>

Stratification

The management plan proposes a subdivision of the forest according to its component forest types⁷. Using this existing stratification, in order to improve the efficiency and estimation of calculations, the strata were agglomerated into groups that shared the main descriptive characteristic, so as to obtain the following final strata:

- moist dense forest (DHC)
- secondary forest (S)
- temporarily flooded forest (MIT)

Identify and justify the baseline scenario, in accordance with the procedure set out in the applied methodology and any relevant tools. Where the procedure in the applied methodology involves several steps, describe how each step is applied and clearly document the outcome of each step.

Explain and justify key assumptions, rationale and methodological choices. Provide all relevant references.

3.5 Additionality

According to the VCS methodology, the *VCS Tool VT0001* is the procedure to be used for determining the baseline scenario and for demonstrating additionality. The flowchart reproduced below is extracted from the VT0001 document:

Step 1 – Selection of the baseline scenario

In the previous section, it was determined that the most plausible baseline scenario is the continuation of the planned timber harvest according to the governmental approved management plan

Step 2. Investment analysis:

As the entire forest is managed for productive purposes, even in the project area the only income would be derived from logging operations and timber sales. There are no other types of financial income that this region could generate as the only land use allowed in these areas is forestry. For this reason, the cost-benefit analysis approach adopted is Sub-step 2b. – Option I. Apply simple cost analysis from the VCS Tool VT0001.

The project generates revenue only by putting the related GHG credits on the market. The costs that the project has to face are inherent to the drafting of the Project Description Document (PDD) in compliance with the Verified Carbon Standard and through the validation/verification process for the registration of Verified Carbon Units (VCU). By implementing the project, LFB is depriving itself of the income that would be generated by the exploitation of the remaining 14 AAC, relating to part of UFE 4 and the entire UFEs

5 and 6. This analysis is available to the validation agent (cost analysis). In short, it shows that the harvest level scenario procures annual revenue to La Filière Bois, whereas the no harvest scenario procures no revenue.

Therefore, the project activity satisfies the investment analysis for additionality.

Step 3. Barrier Analysis:

As mentioned in VCS Tool VT0001 “Barrier analysis maybe performed instead of or as an extension of investment analysis”, so because there aren’t other revenues generated by the VCS AFOLU Project, relevant assumptions such as financial indicators, input values, benchmark, investment analysis and sensitivity analysis are deemed unnecessary. This step is therefore not applicable.

Step 4. Common Practice Analysis:

A search carried out both in-situ through direct LFB contacts and remotely through the Verra registry and the web, demonstrated that, regarding the geographical boundaries of Cameroon there are no active projects of the same type in place or in the process of doing so.

3.6 Methodology Deviations

Information will be made available at validation/registration

4 ESTIMATED GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

Information will be made available at validation/registration

4.2 Project Emissions

Information will be made available at validation/registration

4.3 Leakage

Information will be made available at validation/registration

4.4 Estimated Net GHG Emission Reductions and Removals

Information will be made available at validation/registration

5 MONITORING

5.1 Data and Parameters Available at Validation

Information will be made available at validation/registration

5.2 Data and Parameters Monitored

Information will be made available at validation/registration

5.3 Monitoring Plan

Information will be made available at validation/registration

6 ACHIEVED GHG EMISSION REDUCTIONS AND REMOVALS

6.1 Data and Parameters Monitored

Information will be made available at validation/registration

6.2 Baseline Emissions

Information will be made available at validation/registration

6.3 Project Emissions

Information will be made available at validation/registration

6.4 Leakage

Information will be made available at validation/registration

6.5 Net GHG Emission Reductions and Removals

Information will be made available at validation/registration