



International
Carbon
Registry

DRC REDD+ Carbon Credit Harvesting

VM0009 'Methodology for Avoided Deforestation' v3.0

The REDD+ Carbon Credit Harvesting Group Project, located in central DRC, Africa, will protect approximately 6,793,190 hectares of forest from industrial logging, unsustainable fuel wood extraction and slash and burn agriculture. The project is developed and managed in a joint venture by forest carbon leaders GEC Communities II, Inc. as General Partner to R.E.D.D. Carbon Credit Harvesting LP ("GEC-C") and Global Treat Corporation (GTC). The methodology used for this project will be VM0009 'Methodology for Avoided Deforestation' v3.0, originally validated with VCS in January, 2011 (Version 1.0) with the revised version (version 3.0) receiving validation from VCS in June, 2014. The project is estimated to deliver over 4.3 billion tCO₂-e over 30 years and an average of 141.2 million tCO₂e per year.



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Project Design Description v.2.0

Project Design Description

Basic Information	
ID of Project	ID
Project Name	DRC REDD+ Carbon Credit Harvesting Project
First Date of Submission	7/22/2022
Date of Validation	Click or tap to enter a date.
Version Number of the PDD	1.5
Date of Version	09/15/2022
Project Proponent	GEC Communities II, Inc.
Representative	Charles Cacici
Host Country(ies)	Democratic Republic of Congo
Scope of the Project Activity	Reduced Emissions from Deforestation and Degradation (REDD) and most specifically under the activity Avoiding Planned Deforestation (APD)
Other Requirements Applied	None
Methodology(ies) Applied and Version Number	VM0009 'Methodology for Avoided Deforestation' v2.0
MRV Cycle:	Annual
Other Certifications:	None
Estimated Annual Average GHG Mitigation	139,283,686

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C	Standard Image Interpretation Protocol
D	Deforestation Parameter Calculations
E	Project Proponent Request for Concession
F	Additionality Tool
G	Calculation of NERs
H	Data and Parameters Available at Validation
I	Data and Parameters Monitored
J	Forest Measurement Protocol
K	Non-Permanence Risk Worksheet
L	DRC Political Risk Worksheet
M	Quality Control Procedure

1. Project Description

1.1 Purpose and General Description of the Project

The DRC REDD+ Carbon Credit Harvesting Project, located in central DRC, Africa, is a group project that will protect approximately 6,793,190 hectares of forest from industrial logging, unsustainable fuel wood extraction and slash and burn agriculture. Carbon validation will be undertaken by the International Carbon Registry (ICR). The project is developed and managed in a joint venture by forest carbon leaders GEC Communities II, Inc. as General Partner to R.E.D.D. Carbon Credit Harvesting LP (“GEC-C”) and Global Treaty Corporation (“GTC”). This project will utilize the methodology, 'Methodology for Avoided Deforestation' approved by the VCS in October, 2012.

In 2008, following a governmental revision of the DRC National Forest Code, 91 of 156 logging contracts were suspended in an effort to address corruption in the sector. Minimum legal and environmental standards were not being met, which resulted in severe environmental damage. Furthermore, communities in these areas were largely ignored by the logging companies and received little or no economic benefit.

Given all of the project area is on governmentally controlled lands, the project proponents are the participating National Government, the Provincial Government and project village councils who are responsible for the direction and decision making of priority of project in the protected area while responsibility for implementing the project's core activities lies with GEC-C. However, GTC has signed contracts with all project proponents and assigned them to R.E.D.D. Carbon Credit Harvesting LP. Consequently, GEC as G.P. will serve as the authorized representative in all interactions with ICR on behalf of the project proponents. GEC-C is responsible for submitting the VCS and CCB project description to a VCS validator/verification body, monitoring activity data, compiling and submitting monitoring reports for verification, and marketing any VCU issued to the project on behalf of the project proponents. Therefore, GEC-C is listed as the primary contact.

The project will be developed as a REDD+ project with validation planned under the Verified Carbon Standard (VCS). The VCS methodology used for this project will be Wildlife Works' VM0009 'Methodology for Avoided Deforestation' v2.0, originally validated with VCS in January, 2011 (Version 1.0) with the revised version (version 3.0) receiving validation from VCS in June, 2014.

GTC has been working closely with the villages and communities in the project area to educate, inform, listen, learn and most importantly, to understand and respect their local customs. Both GTC and GEC-C feel that their responsibility is to ensure all parties to this project are willing, freely and gainfully participating and benefiting from its development. The project proponents are thus engaged with each major village and/or seat of traditional authority, and initial consent to develop the project in a participatory manner has been given by all traditional authorities. The community engagement process will continue throughout the life of the project.

1.2 Location

DRC REDD+ Harvesting Project is Grouped Project in which all planned PAIs (and their respective project area), are to be located in the central Democratic Republic of Congo.

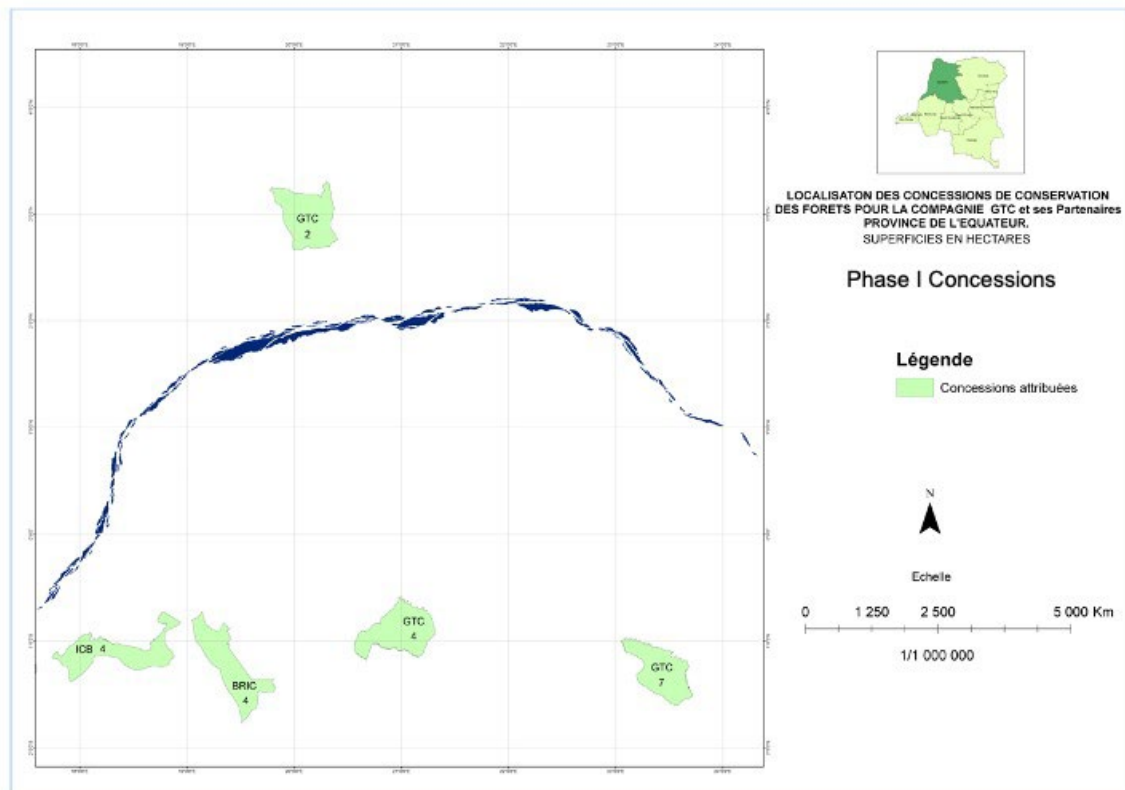


Figure 1: Locations of the first 5 planned PAIs

1.3 Technology Applied

The project quantifies greenhouse gas removals generated from avoiding both planned and unplanned deforestation initiated by a variety of drivers under the baseline scenario.

1.4 Funding

No project funding received.

1.5 Ownership

Though the Democratic Republic of Congo is the sole owner of the project area lands, per the Concession Contracts ('Carbon Credit Project in the Democratic Republic of Congo Agreement') through the related assignment to DRC REDD+ Harvesting Project, GEC-C holds

exclusive rights to sell and monetize the carbon credits for carbon sequestered by the project area. These contracts were signed in 2012 and are in effect for 25 years. The 25-year contract will be renewed to complete the 30-year project crediting period.

Carbon Rights Agreement signed on 09 November 2012 between the entities that assigned the contracts that GEC-C now controls and the DRC government by its representative the Minister of Environment. An additional contract has been executed by the Provincial Government and GTC along with its related Parties

These agreements transfer the carbon rights to GEC-C through the assignment, and states the roles and obligations of the two parties to that agreement, the project time period, revenue sharing with the government, payment to improve the protected area, and tax to be paid by GEC-C to the government, in this case is the only the area tax is to be paid, exempting GEC Communities II, Inc. from other taxes established by the Forestry Code.

Forest Conservation Concession Contract signed on 09 November 2012 by GTC and Partners and the Ministry of Environment representatives, which allocates the conceded lands to GTC, and defines GTCs' social, environmental and management obligations.

1.6 Project Proponent(s)

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1.7 Others Involved in the Project

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1.7.1 Landowner

Signed land contracts to GTC, but not directly involved in the project.

Organization name	The Democratic Republic of Congo
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1.8 Other Certifications

This project has neither applied for nor been rejected from any other GHG programs.

1.9 Participation under Other GHG Programs

This project has neither applied for nor been rejected from any other GHG programs.

1.10 Additional Information

None

1.11 Other Benefits

DRC REDD+ Harvesting Project will execute activities aiming to avoid ecosystem conversion and so the avoidance of the resulting emissions. For each PAI a set of Initiatives are planned and implemented to mitigate ecosystem conversion, addressing the agents and drivers of conversion.

The project adopted the Conservation Measures Partnership Open Standards approach to project planning and the project design process was guided by the Manual for Social Impact Assessment of Land-Based Carbon Projects (Richards & Panfil 2010).

Through the social impact assessment and participatory development of a theory of change as implemented at village and landscape level by the project, the following objectives were identified by the stakeholders and are identified in section 1.1 above.

When asked to prioritize objectives, communities prioritized sustainable forest management first followed by improving agricultural practices and then improving public services. Conservation of threatened and endemic species was not cited as a priority by community members but does reflect national policy objectives and the objectives of the Civil Society Organizations involved in the project design.

Based on these objectives the project aims to bring about the following net-positive climate, community and biodiversity impacts.

Positive Climate Impacts

The positive climate impacts are defined in the VCS Project Design Document.

Communities are less vulnerable and more resilient to climate change; and biodiversity values are better conserved even during times of climate-change related increases in deforestation.

Positive Community Impacts

- Government owned forests will be managed in a participatory, effective and equitable way.
- Forest products will continue to be available and accessible to all community members including the poorest households according to access rules agreed in a participatory way.
- Villages housing will be improved and better governed.
- Communities will have more secure land tenure
- Water sources will be better protected
- Soil erosion will be reduced
- Individual incomes will be boosted and diversified by being trained to manage, oversee and operate the improvements made as part of the monetization of the REDD offsets and will receive salaries from REDD payments.
- Educational and health care facilities will be improved thus providing a new focus for the children of the tribes.
- Women and men farmers, including those from poorer households, will adopt more profitable, sustainable and climate change resilient agricultural practices and will invest in other enterprises and / or value addition initiatives.
- REDD revenues will contribute to improving public services and infrastructure.
- Villages will have village offices.

Community Benefits

Community benefits lie at the heart of this project. Project design has been designed so that community leaders will have significant input into the management of the entire project zone. From its inception, the project has aimed to demonstrate a pro-poor model for REDD.

Positive biodiversity impacts

- Populations of threatened and endemic species persist within the project area (ie: the Bonobo).
- Extensive areas of Central DRC Forests continue to exist within the project area.
- Implementation of the terms of the contracts will create less pressure on the Central DRC Forest from deforestation and degradation drivers.

Communities and other stakeholders will be actively engaged in the management of Central DRC Forest within the project area.

The Project region supports a significant population of bonobos (*Pan paniscus*) which, along with the common chimpanzee, are the genetically closest extant relative to humans. Bonobos are shown as endangered on the IUCN Red List of Threatened Species and likely number less than 50,000 individuals, living only in the DRC. Three characteristics of the Project region enable the bonobo population: (1) the seasonally and permanently inundated forests, which enable bonobos to access fruits and seeds asynchronous with terra firma forests; (2) the food supply of arrowroot herbaceous plants (*Marantaceae* family); and (3) the traditional culture of the Project territory, where the great chief has made hunting bonobos taboo.

The project site contains areas with regular occurrence of Hominidae *Pan paniscus*, or the bonobo, as demonstrated by local knowledge and recent biodiversity surveys (Missouri Botanical Garden, 2012). Habitat provided for the bonobo by the project site consists of mature uplands forest and swamp forest. By protecting these habitats, the Project provides a clear positive benefit for this endangered species.

As the GP of REDD Carbon Credit Harvesting L.P. we have been charged with the management and oversight of 48 land concessions (24 of which are planned to be included in this project) in the Equateur Province of the Democratic Republic of the Congo, consisting of 33 million acres of rainforest and mangroves the Partnership has been granted in the form of contracts. These land concessions have a 25 year term.

In order to obtain these concessions, we have contractually agreed to the following conditions:

- 1) Preserve the sanctity of the rainforest and mangroves, by preventing deforestation caused by logging (legal and illegal) as well as the activities indigenous people living in these areas
- 2) Harvest and sell the carbon credits generated by meeting the additionality requirements to create those credits through the continued carbon sequestration process of the trees, foliage and mangroves by eliminating forest destruction caused by the legal logging that results from granting of concession as were issued in the past. This process will significantly help the country providing an alternative form of recurring income to it rather than the one time payments generated by the sale of the concessions.

- 3) Deploy the funds required to be provided to the country changing the lifestyle of the indigenous people by altering the way they earn an income and live. This will be done through the development of “planned communities” that would include:
 - a. Schools
 - b. Housing
 - c. Hospitals / Clinics
 - d. Roads
 - e. New farming techniques
 - f. Stand alone non-carbon based sources of electrical power
 - g. Water purification and waste disposal processes to protect the natural water sources
 - h. Protection of the wildlife (especially the endangered species)

As part of the process of improving the lifestyle of the indigenous people the GP will make use of traditional methods as well implementing new technologies that can be easily used in the Rain Forest environment. Some examples of what we plan to make use of are as follows:

- 1) On site and remote education - A cornerstone to improving the lives of the people in our targeted regions will be to have an educational process directed at people of all ages in the villages. Conceptually we will not only teach the normal skills of learning (reading, math as well as the use of the written word and technology) we will include life style changing lessons. Conceptually we will have certain aspects of the teaching process include the necessary skills to operate, manage and maintain the systems and technologies we utilize in changing their living conditions. The desired outcome will be to provide opportunities for the people to have ways to earn income in manners that are not destructive to the rain forest as they have traditionally done. As part of this process we have partnered with Unity University out of Maine. This is an environmentally focused university that already has an outreach program targeted at helping Africa through the use of remote learning, cycling training staff and professors into Africa and bringing educators from the African region to the university for a period of targeted training. Working with the GP and the local population the University is crafting a tailored curriculum aimed at achieving the desired outcomes.
- 2) Improve farming and food delivery systems - We have various forms of technology that significantly improve crop yield and root growth of plants by increasing the microbial activity in the soil. These processes are natural, organic or at very least do not make use of any chemicals that would be harmful in any way to the environment. Additionally, we will make use of self contained central (village centric) and local (a system per home that is constructed) hydroponic systems that will provide fresh vegetables and fish on a recurring, self sustaining basis.
- 3) Structural Integrated Panel Hosing. - In the medium term we plan to build a factory in Equateur to construct the panels used in the form of construction allowing housing to be built in a rapid, economical, consistent manner. The plan is provide training to the local population in performing the manufacturing process in the factory as well as the installation process in the villages. This construction process can be used for up to three story buildings and is totally scalable in size so in the long term this form of construction

will be used for housing, medical facilities and schools. We also plan to make this an exportable product for use throughout the region. It is anticipated that the construction cost using this process will be between \$30 and \$40 per square foot.

- 4) Extruded composite building material - This product makes use of locally sources raw materials such as mud combined with nano-particles extruded from a portable small machine that makes blocks lighter, stronger and consistently sized compared to traditional methods. The drying process and time is much faster and the overall construction more efficient.
- 5) Use of Environmental Balancing Devices ("EBD"). This is a totally passive very economical method of purifying all forms of contaminated water including raw sewage. The product is based on bringing into balance the positive and negative ions in contaminated water resulting in its purification. EBD's have been used all over the world successfully eliminating all forms of pollutants in various water sources. This passive form of remediation (requires no outside power source to operate), works for approximately fifteen years and requires no maintenance once installed.
- 6) Implementation of alternative energy sources - In almost all locations we will impact there is limited or no electrical power transmission from central locations. Part of our program will be to improve the living conditions by providing stand alone power sources to create electricity in every village we work in. This will be achieved through the use of various technologies including but not limited to: solar, wind and water turbines, algae, as well as methane capture systems.
- 7) Proactively train and employ the population to protect the wildlife - The region of the world the rain forest we are protecting is located in is rich with wild life that is not seen in any other parts of the world. This is particularly true for the endangered species such as the Bonobo and the Black Leopard. We plan to both carefully protect their natural habitats and to work with the local wildlife protection groups to create formal preserves for the animals. We also envision creating low impact ecotourism centers (employing the local population) in these areas that will generate additional income and awareness to support these activities.

In addition to the specific items mentioned above, we are continuously searching for new, innovative, more efficient, environmentally friendly methods to achieve our goal of maximizing the improvement of living conditions for the indigenous population in the DRC (as well as other countries we ultimately include in our portfolio) while having long lasting positive effects on the economy of the region.



2. Crediting

2.1 Project Start Date

DRC REDD+ Harvesting Project started on January 1, 2022, the beginning of the year on which GEC Communities II, Inc. paid the registration fee for listing the concessions to the Democratic Republic of Congo in order to start the project activities.

2.2 Expected Operational Lifetime of the Project

Expected lifetime of the project is 30 years from the project start date.

2.3 Crediting Period

The Project start date is January 1, 2022, as stated in Section 1.8 above. The listing of the concessions starts the REDD+ monitoring activities in accordance with the VCS methodology VM0009.

The project crediting period start will coincide with the project start date, January 1, 2022, and the length of the crediting period will be 30 years. Therefore, the crediting end date will be January 1, 2052.

Per the VCS guidelines, a mandatory baseline reevaluation is to be executed at a minimum of every 10 years after project start. Therefore, there will be a mandatory baseline reevaluation on or before January 01, 2032 and on or before January 01, 2042.

2.4 Start Date of Crediting

The project crediting period start will coincide with the project start date, January 1, 2022

2.5 Duration of Crediting

the length of the crediting period will be 30 years. Therefore, the crediting end date will be January 1, 2052.

2.6 Estimation of Mitigations

The DRC REDD+ Carbon Credit Harvesting Project, located in central DRC, Africa, is a group project that will protect 13,586,379 hectares of forest from industrial logging, unsustainable fuel wood extraction and slash and burn agriculture. The group project intends to incorporate 24 concessions into the project. These 24 concessions have been broken up and will be added to the project in 4 phases.

2.6.1 Eligibility Criteria

DRC REDD+ Project was designed as a grouped Project - as per VCS' definition. Each concession is identified as a Project Activity Instance (PAI). Grouped projects are allowed, where each project activity instance (concession) is treated as a project accounting area in a single project area. All project activity instances that are grouped must be in the same region and must each meet all the applicability conditions of this methodology, including applicability

conditions related to the baseline scenario. The Project Unit must be clearly defined and justified by the project proponent. All non-Project Unit items are covered under the heading of facility operation.

To be eligible for this Program, a PAI must meet each of the following requirements:

- New PAI must demonstrate additionality through the most updated VCS' Additionality Tool.
- New PAI must be located in the Democratic Republic of Congo.
- For a land area to join DRC REDD+ Project, the land property must not be involved in disputes around ownership.
- New PAI must provide the following up-to-date documents:
 - a) Enforceable and irrevocable agreement with DRC REDD+ Project, committing the land area to conservation;
- New PAI's end-land use in the baseline scenario must be a non-forest state and/or converted native grassland.
- New PAI's project accounting areas must be in an unconverted state (i.e., forest or native grassland) for more than 10 years prior to the project start date.
- New PAIs with an unplanned baseline type must have a conversion threat for each project accounting area.
- New PAI's project accounting areas must not contain peat soil.
- New PAIs, for the respective project accounting areas, must delineate a reference area meeting requirements including minimum size requirement, see section 6.8.1 of VM0009 methodology.
- For new PAIs, as of the project start date, historical imagery of the reference area(s) must exist with sufficient coverage to meet the requirements of section 6.8.4 of VM0009 methodology.
- PAIs must be developed to mitigate ecosystem conversion by addressing the agents and drivers of conversion as described in section 8.3.1 of VM0009 methodology.

PAI must not result in significant GHG emissions.

2.6.2 Project Scale and Estimated GHG Emission Reductions or Removals

The DRC REDD+ Harvesting Project is of type REDD (Reducing Emissions from Deforestation and Degradation) and as net credits exceed 300,000 / year, it is classified as a VCS "large project". The table in Annex B shows estimated credits generated by the project per vintage year. Note that credits per *vintage year* differ from credits *per monitoring event* (monitoring events do not coincide with calendar years), a table for the latter is listed later in this document.

Vintage Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2022	30,770,606
2023	40,664,646

2024	54,151,846
2025	67,526,546
2026	83,705,797
2027	105,329,640
2028	119,171,851
2029	140,281,644
2030	160,429,058
2031	184,316,807
2032	215,690,927
2033	213,666,583
2034	224,495,646
2035	229,043,426
2036	241,108,789
2037	267,451,041
2038	216,620,817
2039	207,686,407
2040	191,180,066
2041	192,315,163
2042	211,002,896
2043	130,319,849
2044	130,558,504
2045	125,427,912

2046	108,055,877
2047	122,774,957
2048	65,002,618
2049	60,794,156
2050	56,720,248
2051	40,299,517
Total estimated ERs	4,236,563,837
# of vintage years	30
Average annual ERs	141,218,795

2.6.3 Conditions Prior to Project Initiation

The project area, prior to project initiation was subject to the following constraints:

Under the DRC 1973 General Property Law (Law No. 73-021 dated July 20th, 1973), all land water, forests and minerals in the DRC are formally owned *by the state*. As such, local communities technically have no formally recognized title over the land. However customary ‘usufruct’ rights to access the forests and to use land for agricultural purposes are widely recognized, and in practice, customary law continues to constitute the most recognized form of land tenure. This is true in the project area, where previous (timber harvesting) concession holders with resource management rights granted by the state have never held a strong presence, and thus the ownership of land by the state is not widely recognized or even understood by local land users. This uncertainty has led overlapping systems of tenure, and has in fact been the cause of many disputes over resources between the state and citizenry in the DRC.

However, customary land tenure of *local communities* is clearly recognized under articles 388 and 389:

Article 388: Les terres occupées par les communautés locales sont celles que ces communautés habitent, cultivent ou exploitent d’une manière quelconque – individuelle ou collective – conformément aux coutumes et usages locaux.;

Roughly translated: “The lands occupied by local communities are those on which these communities live on, cultivate, or exploit in any way-individually or collectively-in conformity with local customs and usages.”

Article 389: Les droits de jouissance régulièrement acquis sur ces terres seront réglés par une Ordonnance du Président de la République.;

Roughly Translated: “The rights of use as acquired in conformity with the precedent rules will be regulated by Ordinance of the President of the Republic.”

In the case of forest concession that has been allocated to the project proponent the “Code Forestier” clearly defines local community forests [the word ‘Indigenous’ is pejorative in the Congo), and the rights attached to it. The right to attribute forest concessions belongs to the Ministry of the Environment.

However, the concession title holder has to agree with local communities who have the right of usage (*droit de jouissance*) under the provision of the Land Tenure Act (Art. 388) and the Forest Code (completing Art. 389 of the Land Tenure Act). The Forest Code specifically requests the signing of an agreement known as “Cahier de Charge” between the concession Title holder and the local community representatives prior to signing the Concession Contract. In fact, the “Cahier de Charge” is part of the Concession Contract. Therefore, in the case of GTC, a “Cahier de Charges” (refer to Annex B – Cahier de Charges) was signed with representatives of local communities after the Carbon Right Agreement (CRA) (refer to Annex A – Carbon Right Agreement (CRA)) was signed, and before the Concession contract was granted to the company.

The project area concessions were signed in November, 2012. Therefore, it is clear that GTC did not generate previous emissions with the intent of subsequently removing them for gain under any GHG programs. The same can be said for the reference area, where the baseline is measured. As stated in section 2.4.1 of this document, the reference area was exploited by and large by Sodefor, and GTC has not had a presence in the area prior to the project, nor do they currently have a presence in the DRC.

2.6.4 Leakage Management

Project emissions are calculated in F.40 of the VM0009 methodology version 3.0. Project emissions are calculated for any monitoring period and are calculated from the events of biomass consumption through forest fire, burning, logging, or other disturbance.

Activity-shifting leakage is not applicable to this project. In the context of the project's baseline scenario, activity-shifting leakage would apply to the secondary agents of deforestation - members of communities located within or near the project area - and the extent to which there are alternative, accessible forested areas within the range of their mobility.

Market leakage does not apply when the primary agent is known, and the project proponent has demonstrated that there is no possibility for that agent to be awarded a further/replacement concession within the national boundary.

2.6.5 Commercially Sensitive Information

Some annexes contain commercially sensitive information. All necessary supporting information shall be provided to the validator but may not be distributed publicly.

3. Safeguards

3.1 Statutory Requirements

GTC and GEC-C will comply with all applicable local, district and national laws, regulations and standards. Within the Project area, none of the proposed project activities violate any law. The government of the DRC owns the land in the project area. The Project Proponent owns the rights to sequestered carbon in the project area.

Laws and regulation:

Laws regulating the Forestry Conservation Contract and the REDD projects:

Forestry Code “Loi n°011/2002, August 29, 2002” and its related implementation decrees: Decree n°11/27, May 20, 2011 concerning specific rules on the allocation of Forestry Conservation Concession, determine the legal framework under which the Forestry Conservation Concession contract was allocated to ERA-Congo.

Forestry Code and its related Ministerial Order n°024/CAB/MIN/ECN-T/15/JEB/08, August 7, 2008 establishing a procedure for public enquiry prior to the grant of Forests Concessions.

This procedure was followed by GTC prior to the signature of the Carbon Credit Project Agreement.

Ministerial Order n°004/CAB/MIN/ECN-T/012 February 15, 2012, establishing an approval procedure for REDD+ projects.

This procedure didn't apply at the time when GTC's REDD project was approved (see above). Nevertheless, some of these new dispositions apply to the project (Art.21) such as:

- register the REDD project to the DRC National REDD+ Registry

- notify to the Registry carbon transactions according to a recognized standard by the DRC (validation/verification reports), GEC Communities II, Inc. will submit PDD and validation/verification reports in time.
- submit a yearly progress report with audited financial statement at the latest by March 31 the year following the concerned financial year.

The Forestry Code and its related inter-ministerial Order n°006/CAB/MIN/ECN-EF/2007 and n°004/CAB/MIN/FINANCES/2007 establishes the area tax and amount to be paid by forestry concession holders yearly. These taxes were paid in 2011 and 2012 and will continue to be paid as due.

Corporate Laws:

“Loi n° 10/008 February 27, 2010“ modifying and supplementing the King Decree February 27, 1887 relative to commercial corporations and law “Loi n° 10/009, February 27, 2010” modifying and supplementing Decree March 6, 1951 establishing a Commercial and Companies Register.

Investments Code “Loi n°004/2002 of February 21, 2002” establishes the legal and taxes framework for foreign investment in the DRC. It allows some tax exemptions to GTC.

Labor Laws:

Employment law “Loi n°015/2002” and its related Ministerial Decree n°070/0016, August 11, 1970 on working conditions, Ministerial Decree n°68/13, May 1968 relative to women wages and women working conditions, Ministerial Order n° 12/CABMIN/TPS/AR/KF/059/02, Septembre 27, 2002, determining implementing measures of Ministerial Order n° 080/2002 July 3, 2002 establishing a minimum wage, and Ministerial Order n°12/CAB.MIN/116/2005, October 26, 2005 relative to employees dismissal procedure.

National Security Law “Loi n°75/028 September 19, 1975” modifying Decree-Law, June 29, 1961 establishing the National Social Security Institute (I.N.S.S), covering employees’ pension, occupational risks and accidents and family allowances.

For the benefit of the members (employees/employers), It is a compulsory savings scheme into which the employer pays a statutory contribution for every employee who is a member.

Health benefits Decree-Law 67/310 August 9, 1965 states that companies must cover the health care needs of its employees.

International Agreements:

Article 215 of the Democratic Republic of Congo Constitution, February 18, 2006, states “Treaties and international agreements have regularly reached, from their publication, an authority superior to that of laws, provided for each treaty or agreement its implementation by other party.”

DRC is party to the United Nations Convention on Biological Diversity since December 3, 1994, and signed its two related Cartagena and Nagoya Protocols on June 6, 2012 and September 9, 2011 respectively; party to the United Nations Framework Convention on Climate Change on January 9, 1995 and its related Kyoto Protocol March 23, 2005; to the Ramsar Convention on

Wetlands on May 18, 1996, and party to the Treaty on the Conservation and Sustainable Management of Forest Ecosystems in Central Africa and to Establish the Central Africa Forest Commission (COMIFAC) on January 24, 2005.

The REDD project aims the DRC to attain its objectives in term of climate change, biodiversity, fauna, flora and wetlands conservation and sustainable use of forests ecosystems. The Project is within an area listed on September 9, 2008, as Wetlands of International Importance under the Ramsar Convention.

Legal Agreements:

Carbon Rights Agreement signed on November 09, 2012 between GTC and the DRC government by its representative the Minister of Environment.

This agreement transfers the carbon rights to GEC Communities II, Inc., and states the roles and obligations of the two parties to that agreement, the project time period, revenue sharing with the government, payment to communities, and tax to be paid by GEC Communities II, Inc. to the government, in this case only the area tax is to be paid, exempting GEC Communities II, Inc. from other taxes established by the Forestry Code.

3.2 Potential Negative Environmental and Socio-Economic Impacts

The Project Activity is not expected to result in any negative environmental and no negative socio-economic impacts.

3.3 Consultation with Interested Parties

For all PAIs, local stakeholders will be engaged. For on-going communication, clarification and comments it will designated a physical address of easy access in which a stakeholder can meet the PAI representative. Landowners receive updates on periodic meetings.

The primary communication mechanism with the community is on-sight visits, while the main mechanism with landholder is video-conference meetings. The mentioned mechanisms are also used to communicate with stakeholders about any new update. Monitoring results will be communicated to stakeholders upon release of each monitoring report.

Public comments will be addressed by the project proponent after the public comment period to ensure community satisfaction. Updates and Relevant project documents will be shared to landholders and on Verra Registry.

3.4 Mitigations

DRC REDD+ Harvesting Project requires all PAIs to provide details on: 1) Local stakeholder identification process and a description of results, 2) Risks to local stakeholders due to project implementation and how the project will mitigate such risks, 3) Risks to local stakeholder resources due to project implementation and how the project will mitigate such risks, including the plans to ensure the project will not impact local stakeholder's property rights without the free, prior and informed consent and 4) Processes to ensure ongoing communication and



consultation with local stakeholders, including a grievance redress procedure to resolve any conflicts which may arise between the project proponent and local stakeholders.

3.5 Additional Information on Risk Management

Additional information on measures, risk management processes, and methods.

4. Methodology

4.1 Reference to Approved Methodology

The group project made use of:

- VCS Methodology VM0009, Version 3.0
- VT0001, Version 3.0
- VCS Standard, v4.1
- AFOLU Non-Permanence Risk Tool v4.0

4.2 Applicability of Methodology

DRC REDD+ Harvesting Project was developed under the AFOLU VM0009 Methodology. Each PAI must justify applicability. For eligibility is required - for each applicability condition - a statement of whether it applies to the PAI. If the applicability condition does not apply to the PAI, justification for such must be indicated.

Below are details for each of the 15 conditions regarding PAIs:

1. This methodology was developed for avoiding deforestation and assumes that degradation and deforestation occur as a result of land use conversion to non-forest. This methodology may be used if all the drivers and agents of deforestation are consistent with those described in section 6 of this methodology and the end land use in the baseline scenario is non-forest. Accordingly, the project activity must be APD or AUDD.

VM0009 version 3.0 “Methodology for Avoided Deforestation” is applicable to this project because the baseline scenario includes agents of deforestation who carry out forest-clearing activities that result in land use conversion to non-forest. In particular, the primary agent had secured authorization to conduct sanctioned commercial harvest in the project area, demonstrating that the baseline scenario is planned commercial harvest (APD, baseline type P1 under VM0009). The planned commercial harvest enables secondary agents, including members of communities within and near the project area, to perform illegal logging using the infrastructure (e.g., roads, bridges) established by the primary agent. (Refer to section 2.4.1 for more information about agents and drivers of deforestation.)

This sequence of deforestation was confirmed to have occurred in the reference area during the reference period. As confirmed by spatial analysis, the end land use in the reference area is primarily non-forest used for agricultural production.

2. Land in all project accounting areas has qualified as forest on average across the project accounting areas as defined by FAO 2010 or as defined by the residing designated national authority (DNA) for the project country for a minimum of 10 years prior to the project start date.

As evidenced through the FAO Africover Land Cover dataset derived from Landsat satellite imagery acquired in 2001 and 2011 (www.africover.org), the Group Project Accounting Area (13,586,379 ha) was forested according to a definition of forest that is based on the FAO definition, but is modified in the following manner: The FAO definition (i.e., areas greater than 0.5 ha, tree heights greater than 5 meters, and canopy cover greater than 10%) is used with the following caveat:

Areas referred to as “forêt secondaire” (secondary forest) which are described by complexes of regrowth, fallow and crops and even small villages; also known as the rural complexes dominating areas located in close proximity to villages, ports and roads with dense undergrowth and regular crown cover (Mayaux et al., 2000; Devred 1958), are considered non-forested, and are not included in the Project Accounting area for this project.

3. In the case of baseline types that are type U, unplanned deforestation, deforestation exists at some point within 120 meters of the perimeter of the project accounting area such that without the implementation of the project activity the project accounting area would be immediately threatened by the agent of deforestation as of the project start date.

Baseline type U (unplanned deforestation) does not apply to this project. Refer to applicability condition 1 above.

4. In the case of baseline type U1, at least 25% of the project area boundary is within 120 meters of deforestation and at least 25% of the project area is adjacent to the reference area.

Baseline type U (unplanned deforestation) does not apply to this project. Refer to applicability condition 1 above.

5. In the case of baseline type U2, at least 25% of the project area boundary is within 120 meters of deforestation.

Baseline type U (unplanned deforestation) does not apply to this project. Refer to applicability condition 1 above.

6. If foreign agents have been identified as an agent of deforestation, they are unlikely to shift their activities outside the activity-shifting leakage area.

Foreign agents have not been identified as agents of deforestation in the project area. Per section 2.4.1 of this document, the primary agents of deforestation are identified to be Commercial Logging Companies, primarily including Sodefor. Secondary agents include local villagers, living in close proximity to the project area, who convert degraded forest into agriculture.

7. The project accounting area(s) shall not contain peat soil.

The Project Accounting Area contains two types of soil, according to the FAO-UNESCO World Soil Map, Feb, 1998: Xanthic Ferrasols and Eutric Gleysols neither of which are classified as Histosols (Peat).

8. For each project accounting area, a reference area can be delineated for each baseline scenario that meets the requirements of section 6.8.1 of this methodology including the minimum size requirement.

See section 2.4.5.1 regarding selection of the reference area and for results of a spatial analysis demonstrating the reference area contained as much forest as the project accounting area at some point during the historic reference period.

The reference area was chosen primarily due to the same primary agent of deforestation acting within both the Project and Reference Areas – namely, planned commercial harvest – and is also similar to the project area in terms of landscape configuration, socio-economic drivers (see section 2.4.5.1) and is furthermore equidistant from the main market –and capital of the DRC - Kinshasa. *As of the project start date, historic imagery of the reference area exists with sufficient coverage to meet the requirements of section 6.7.4 of this methodology*

- Double coverage (at least 90% of the reference area visible in at least two historic images)

Double coverage analysis showed that 98.99% of the reference area meets the double coverage requirement (see section 2.4.5.3 of this document).

- Minimum spatial imagery (30m resolution)

Point interpretation utilized Landsat imagery, which has a spatial resolution of 30 m.

- Stationarity of time series of historic imagery

Refer to the Historical Reference Period Line Plot in section 2.4.5.3 of this document.

- Spatial registration: All imagery shall be spatially registered to the same coordinate system with accuracy less than 10% Root Mean-Squared Error (RMSE) as measured by the error relative to the pixel diagonal of the image being evaluated or relative to the absolute difference between the greatest error and the smallest error, on average across all images (Congalton, 1991). The accuracy of spatial registration is assessed empirically; each image is relative to other collocated images or a ground control point. Oblique imagery should be avoided to maintain accurate spatial registration.

All Landsat images were spatially registered to the same coordinate system and no additional geo-referencing was necessary.

9. As of the project start date, historic imagery of the reference area(s) exists with sufficient coverage to meet the requirements of section 6.8.4 of VM0009 methodology. Section 4.4 provides details of historic imagery of the reference area.
10. Project activities are planned or implemented to mitigate deforestation by addressing the agents and drivers of deforestation as described in section 8.3.1 of the methodology.

Project proponents will implement activities that reduce illegal logging through local administration of extraction activities and prevention of logging. These activities are described in section 1.8 of this document.

11. The project proponent has access to the activity-shifting leakage area(s) and proxy areas(s) to implement monitoring (see sections 8.3.2.1 and 6.4 of the methodology), or has access to monitoring data from these areas for every monitoring event.

The project proponent demonstrated access to the proxy area by collecting data from proxy plots for determination of residual carbon stocks. An activity-shifting leakage area is not applicable to this project (see section 3.3.1 of this document).

12. If logging is included in the baseline scenario and a market-effects leakage area is required per section 8.3, then the project proponent has access to or monitoring data from the market-effects leakage for every monitoring event (see section 8.3.3 of the methodology).

A market-effects leakage area is not applicable to this project (see section 3.3.2 of this document).

13. This methodology is applicable to all geographies, however if SOC is a selected carbon pool and the default value (from section 6.17.1.1 of the methodology) is selected, then the project must be located in a tropical ecosystem.

The project is located in a tropical ecosystem in the Democrat Republic of Congo. Therefore the default value is applicable for the determination of carbon decay in soil.

14. There no manure management taking place on PAI Fazenda Boqueirão.

Project activities do not result in significant GHG emissions.

4.3 Deviation from Methodology

The project does not deviate from the methodology.

4.4 Additionality

A project activity is additional if it can be demonstrated that the activity results in emission reductions or removals that are in excess of what would be achieved under a “business as usual” scenario and the activity would not have occurred in the absence of the incentive provided by the carbon markets.

Each PAI to join the DRC REDD+ Harvesting Project will have to prove additionality.

The carbon emission can be avoided only by implementing the REDD/carbon financing to the community. This is merely because the agent of deforestation, and the authorized actors for the forest management, is the Central Government and the community. With the level of economy, education, and social condition in the community, it is crucial to involve and benefiting the community through the implementation of this carbon trade project. In addition, as part of this project, the DRC has agreed to the elimination of legal permit issuance for logging concessions that did not require reforestation.

The most likely land use scenario is the continuation and proliferation of logging activities which had begun under the terms of the logging concession: In this scenario, a cascade of degradation would have been initiated by planned commercial harvest. The logging concession, which applies to the entire project area and was acquired by the project proponent, would have authorized harvest of 5000-6000 hectares per year in this scenario, encompassing most of the primary terra firma forested area over the 25 year period of the logging concession (2011 to 2036).

The commercial harvest of merchantable trees would employ new roads and bridges that would serve to significantly increase access to the project area. As a result, secondary agents of

deforestation would gain access to the project area and harvest wood for building materials and charcoal production and for preparing land for agricultural production. (This secondary deforestation would occur as characterized by the ‘unplanned’ baseline types described in the VM0009 methodology version 3.0.) The end-state land cover in this land use scenario is characterized by nearly complete deforestation.

4.4.1 Justification for the selected baseline scenario. This justification can include expert knowledge, results from the participatory rural appraisal and ex-ante estimates of avoided emissions.

The selected baseline scenario is based primarily on the imminent deforestation threat posed by logging concessions in the project area. The two concessions constituting the project area were suspended in 2008 as a result of a legal review of all DRC National Forest Titles. The decision to suspend the concessions, held at the time by the logging company Bimpe Agro, was made initially in October 2005 and confirmed on October 6, 2008. Although a moratorium on new concessions had been in place since 2002 and extended by presidential decree in 2005, the possibility existed that the suspended concessions could be re-allocated to any private company for wood production by the Ministry of Environment, Conservation, Nature and Tourism (MECNT). And given the proximity to the markets of Kinshasa and the area’s abundant supply of valuable tropical hardwoods, numerous logging interests were actively seeking the concessions.

This scenario of commercial harvest would have been followed by unplanned deforestation by local agents in search of timber for charcoal, fuel, and building materials. In particular, the roads and bridges constructed in the course of commercial harvest activities would provide improved access to the project area and would even connect the project area to a main highway leading to the population center of Kinshasa, which provides much of the local demand for charcoal and wood. This unplanned deforestation would be carried out by loggers, or *scieurs de long*, who use chainsaws to cut rough-hewn lumber in situ, side by side with charcoal production.

This cascade of degradation – in which commercial harvest creates access for numerous agents to perform unplanned deforestation and ultimately results in nearly complete loss of above-ground biomass in logged areas – has been demonstrated in the analysis of historical deforestation in the reference area, where this cascade of degradation and biomass loss was confirmed to have taken place. (For more information regarding determination of the baseline scenario, refer to section 2.4.5 of this document.)

Refer to section 3.4.4 for ex-ante estimates of GHG emissions occurring as a result of the selected baseline.

4.4.2 An investment or barriers analysis proving that the project is not the most economical option

The project proponent employed an investment analysis as prescribed in the VCS Tool for the Demonstration and Assessment of Additionality (VT0001, version 3.0). (Refer to Annex M – VCS Additionality Tool.) The investment analysis (simple cost analysis – option 1 in the VCS Tool) demonstrated that the project produces no substantial benefits for project proponents other than VCS- related revenue. Although limited revenue is expected from some project activities (e.g., wood energy plantations, various agricultural improvement projects), this revenue is

expected to be very small in comparison to project implementation costs and VCS-related revenue. Even though some project activities will generate revenue for local community members, they do not represent viable stand-alone sources of revenue and would not be initiated in the absence of VCS-related revenues.

Further, the NPV of logging activities in the baseline scenario are far greater than the NPV of project activities, reinforcing that it is unlikely that project activities would have occurred in the absence of VCS-related revenue.

4.4.3 A common practice analysis including a list of project activities and the drivers of deforestation that they address.

There are no activities similar to the activities proposed by this project that are underway in the geographic area of the project. Few efforts have been made in the area to develop ecologically sustainable livelihood alternatives or to improve the management of forests and other common-pool resources. As a result, the area is characterized by low living standards, little infrastructure, and a continued reliance on forest-clearing for subsistence agriculture.

4.4.4 Evident compliance with the minimum requirements of the aforementioned VCS tool. This evidence may be the same as the evidence provided to meet reporting requirements listed in section 4 of the methodology.

The project proponent has demonstrated that the project complies with the applicability conditions of the methodology (see section 2.2 of this document). Further, the project proponent has demonstrated that the project complies with all applicable laws (see section 1.11 of this document). Finally, the method for determining the baseline scenario (described in section 2.4 of this document) is consistent with that prescribed in the VM0009 methodology version 2.0. Thus, the project proponent has complied with the minimum requirements of the VCS tool.

4.5 Boundary

Carbon dioxide (CO₂) was determined to be the primary source of greenhouse gas emissions in the project, given the threat of deforestation from both sanctioned commercial harvest and illegal logging in the baseline scenario. Methane (CH₄) and nitrous oxide (N₂O) are conservatively excluded from the project.

4.5.1 Selected Carbon Pools

A list of the selected carbon pools.

Pool	Required	Included in Project?	Justification
Above-ground merchantable tree	Required	Yes	Major pool considered
Above-ground non-merchantable tree	Required	Yes	Major pool considered
Above-ground non-tree	Optional	No	Conservatively excluded
Below-ground merchantable tree	Optional	Yes	Major pool considered
Below-ground non-merchantable tree	Optional	Yes	Major pool considered

Below-ground non-tree	Optional	No	Conservatively excluded
Litter	No	No	Conservatively excluded
Dead wood	Optional	No	Conservatively excluded
Standing deadwood	Optional	No	Conservatively excluded
Lying deadwood	Optional	No	Conservatively excluded
Soil organic carbon	Optional	Yes	Major pool considered
Wood products	Required	Yes	Major pool considered

The definition and evidence to support the definition of a merchantable tree if the baseline scenario or project activities include logging.

The commercial logging concession in the baseline scenario authorizes harvest of the following species:

Species	Minimum Diameter (cm)
Afzelia	60
Albizia feruginea	50
Amphimas sp	80
Aningeria robusta	80
Anthrocaryon nananii	80
Antiaris toxicaria	80
Autranella congolensis	80
Baillonella toxisperma	80
Brachystegia laurentii	80
Canarium schweinfurthi	80
Ceiba pentandra	80
Celtis sp	60
Copaifera milbraedii	80
Daniella pinaertii	80
Diospyros spp. (crassiflora, et al.)	80
Entandrophragma angolense	80
Entandrophragma cylindricum	80
Entandrophragma utile	80
Entandrophragma candollei	80
Erythrophloeum suaveolens	80
Gambeya lacourtiana	80
Gilbertiodendron dewevrei	80
Gossweilerodendron balsamiferum	80
Guarea spp. (cedrata, laurentii, thompsonii, et al.)	60
Guibourtia demeusei	80

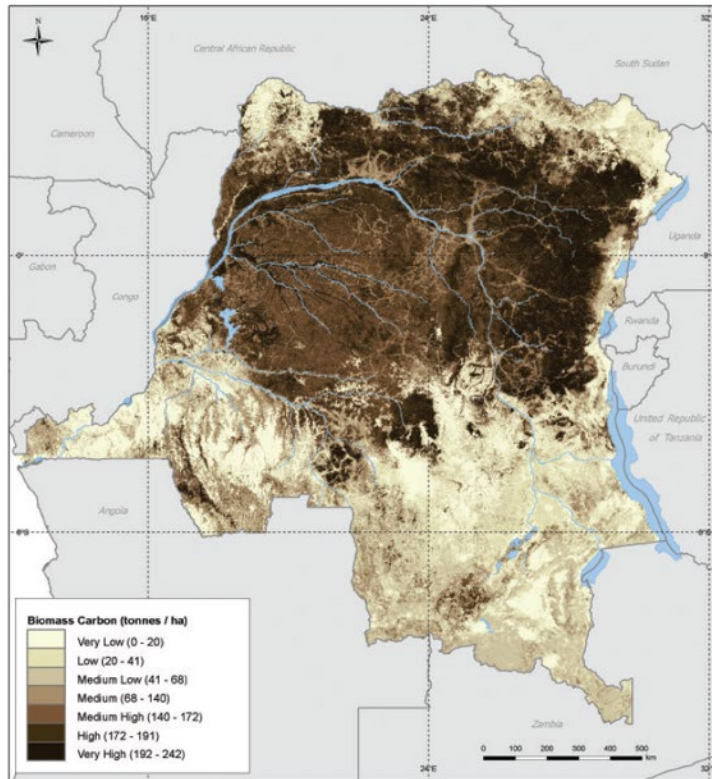
Khaya anthoteca	80
Lovoa trichilioides	80
Mammea africana	60
Miletia laurentii	60
Milicia excelsa	80
Morus mesozygia	60
Nauclea diderrichi	80
Newtonia leucocarpa	60
Ongokea gore	60
Oxystigma oxyphyllum	80
Petersianthus macrocarpus	80
Piptadeniastrum africanum	80
Pterocarpus castelsii (soyauxii)	80
Pychnanthus angolensis	80
Schorodophleus zenkeri	80
Staudtia stipitata	80
Swartzia fistuloides	80
Terminalia superba	80
Tieghemella africana	80
Tieghemella hetkelii	80

Justification for inclusion of various carbon pools.

Accordingly, these species and diameters are used to designate *merchantable biomass* within the project inventory.

4.6 Description of Baseline Scenario

The baseline scenario for a project activity shall be determined for each designated geographic area, in accordance with the methodology applied to the project. VM0009 Methodology indicates a step-wise instructions for definition of the Baseline Types that will be used for each PAI of the DRC REDD+ Harvesting Project. For the project PAIs, the result was Baseline Type G-U1.



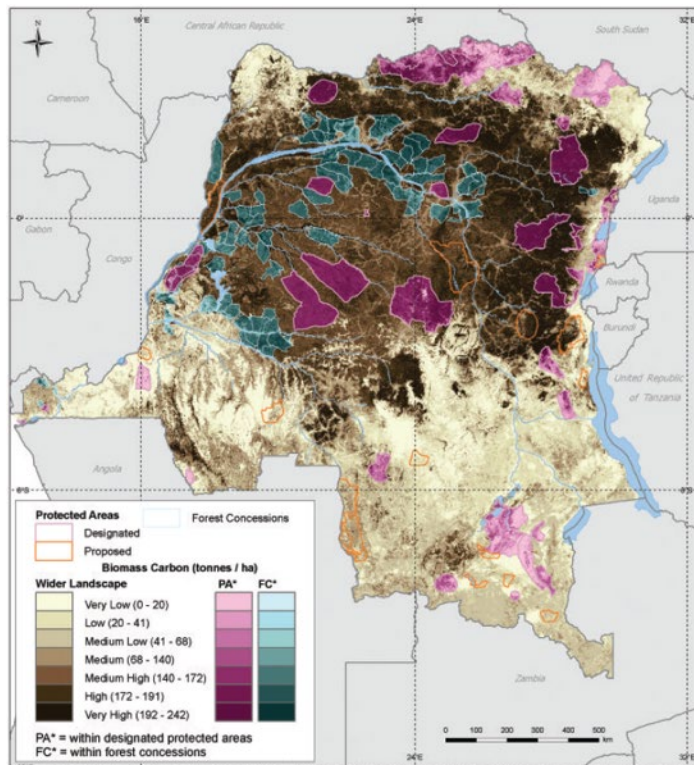
Preliminary biomass carbon map for the Democratic Republic of the Congo (data sources: Baccini et al. 2008, FAO 2001, FAO 2006, Gibbs and Brown 2007, Ruesch and Gibbs 2008, see Annex I for technical detail)

4.6.1 A list of the agents and drivers of deforestation, including quantitative descriptions of agent mobilities.

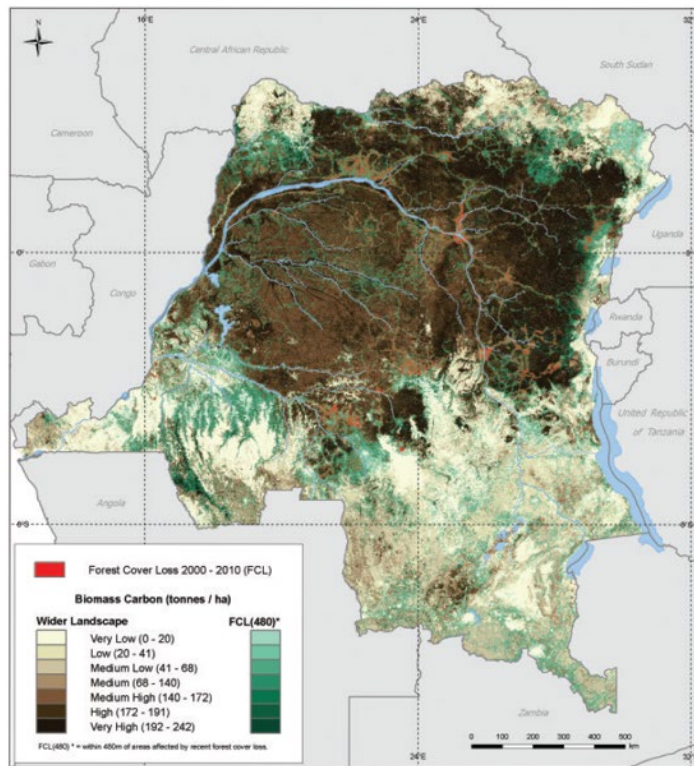
A list of the agents and drivers of deforestation, including quantitative descriptions of agent mobilities.

- **Primary Agents: Commercial Logging Companies.** Primary agent mobility is assumed to be 500-3000km, per year due to mechanized transport and a vast infrastructure system, as well as the capacity to harness natural infrastructure systems (rivers).
- **Secondary Agents: local villagers** who convert heavily degraded forest into agriculture for subsistence and market sale. Mobility of the secondary agents is typically limited to that which can be traveled on-foot or by crude means of transport (~5-25km) except in the case where trucks or boats are used to transport cash crops to market (~100-500km)
- **Drivers of Deforestation:**
 - a) Ease of transport/travel (infrastructure)
 - b) Proximity to major river
 - c) Proximity to major market
 - d) Access to deforestation tools

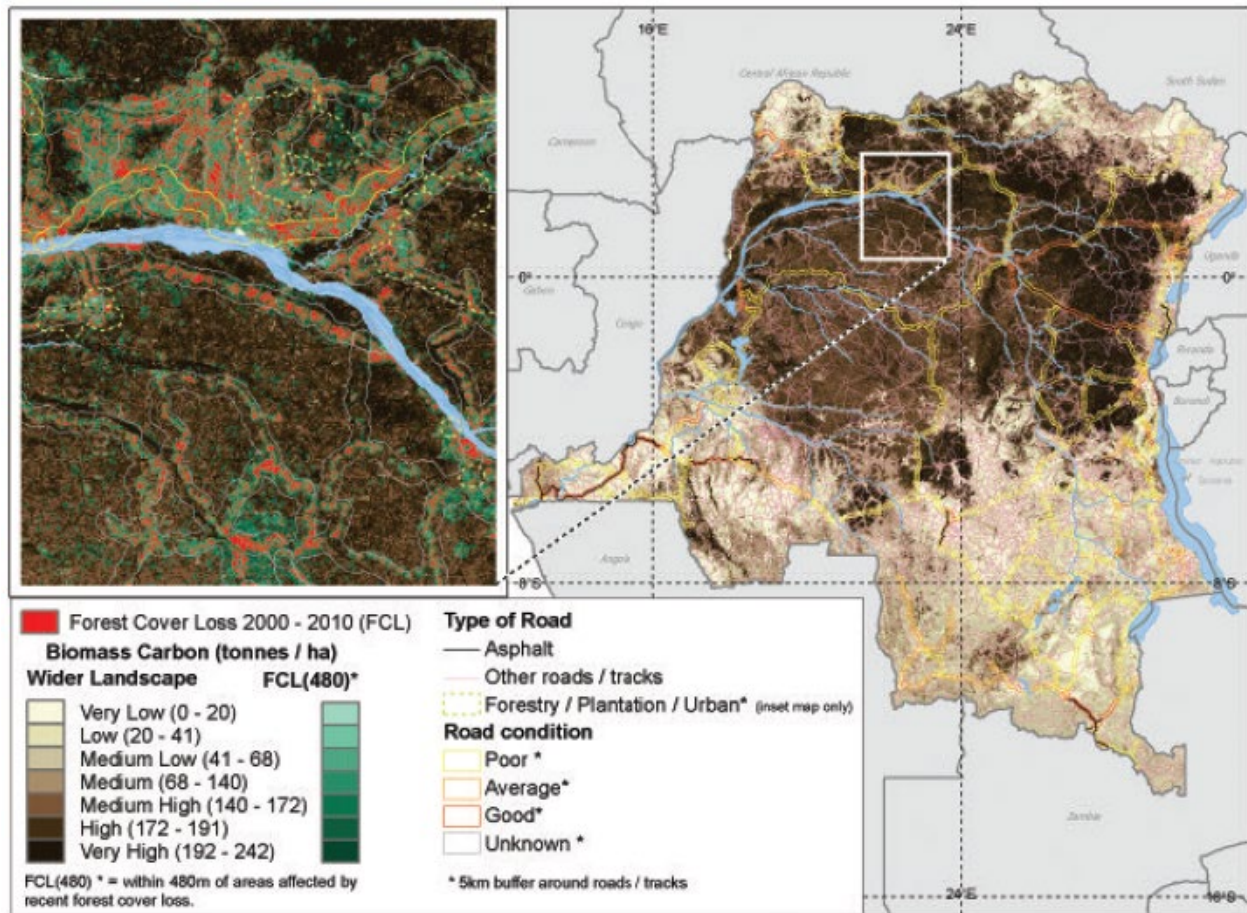
The Baseline Emission Model (BEM) and the Soil Emissions Model (SEM) were used to characterize emissions in the baseline scenario. The BEM predicts cumulative emissions from biomass as a result of deforestation and degradation and includes a linear component for emissions from planned commercial harvest and a logistic component for subsequent degradation. The SEM is based on a logistic model of deforestation and assumes that soil organic carbon begins to decay in the project accounting area when the area is cleared to non-forest. This approach dramatically simplifies baseline accounting. Complete documentation of the approach is provided in sections 6.5-6.19 and 8.1 of the VM0009 methodology version 3.0. The baseline emissions accounting for this project is provided in the documentation of monitoring events.



Biomass carbon, protected areas and forest concessions in the DRC (data sources: ICCN *et al.* 2009 and DIAF and WRI 2011)



Forest cover loss between 2000 and 2010 (red) and areas within 480m of areas affected by forest cover loss (green) (Forêts d'Afrique Centrale Évaluées par Télédétection (FACET) 2010)



Road system by road type and condition. Inset shows the link between road access and forest cover loss (data sources: Cellule Infrastructures 2007; Forêts d'Afrique Centrale Évaluées par Télédétection (FACET) 2010; World Resources Institute and Ministère de l'Environnement, Conservation de la Nature et Tourisme de la République Démocratique du Congo 2010).

4.7 Baseline and Projection

The baseline scenario for a project activity shall be determined for each designated geographic area, in accordance with the methodology applied to the project. VM0009 Methodology indicates a step-wise instructions for definition of the Baseline Types that will be used for each PAI of the DRC REDD+ Harvesting Project. For the project PAIs, the result was Baseline Type G-U1.Grouped Projects.

Each project activity instance is treated as a project accounting area in a single project area. All project activity instances are in the same region and have been verified to meet all the applicability conditions of the methodology, including applicability conditions related to the baseline scenario.

All project activity instances are exactly the same with regard to common reference areas, baseline scenarios, proxy areas, activity-shifting leakage areas and market leakage areas.

Each project activity instance has a project activity instance start date and project activity instances that share the same project activity instance start date and baseline type are grouped into a single project accounting area.

Baseline Scenario			
Source	GHGs	Amount	Justification/Explanation
Flux in Carbon Pools	CO ₂	5,648,751,783	Major pool considered in the project scenario
	CH ₄	0	Conservatively excluded
	N ₂ O	0	Conservatively excluded
	Other	0	Conservatively excluded
	Total tCO ₂ -e	5,648,751,783	
Burning of biomass	CO ₂	0	Conservatively excluded
	CH ₄	0	Conservatively excluded
	N ₂ O	0	Conservatively excluded
	Other	0	Conservatively excluded
	Total tCO ₂ -e	0	
Total	CO ₂	5,648,751,783	Click or tap here to enter text.
	CH ₄	0	Conservatively excluded
	N ₂ O	0	Conservatively excluded
	Other	0	Conservatively excluded
	tCO ₂ -e	5,648,751,783	

Project Scenario

Source	GHGs	Amount	Justification/Explanation
Flux in Carbon Pools Burning of biomass	CO ₂	1,412,187,946	Major pool considered in the project scenario
	CH ₄	0	Conservatively excluded
	N ₂ O	0	Conservatively excluded
	Other	0	Conservatively excluded
	Total tCO ₂ -e	1,412,187,946	
Burning of biomass	CO ₂	0	Major pool considered in the project scenario
	CH ₄	0	Conservatively excluded
	N ₂ O	0	Conservatively excluded
	Other	0	Conservatively excluded
	Total tCO ₂ -e	0	
Total	CO ₂	1,412,187,946	Major pool considered in the project scenario
	CH ₄	0	Conservatively excluded
	N ₂ O	0	Conservatively excluded
	Other	0	Conservatively excluded
	tCO ₂ -e	1,412,187,946	

4.8 Leakage

4.8.1 Estimating Emissions from Activity-Shifting Leakage

Activity-shifting leakage is not applicable to this project. In the context of the project's baseline scenario, activity-shifting leakage would apply to the secondary agents of deforestation - members of communities located within or near the project area - and the extent to which there are alternative, accessible forested areas within the range of their mobility.

Without access to the project area that would have been provided by logging infrastructure, it is possible that secondary agents could be displaced to other forested areas within the range of their

mobility (up to 25 km per section 2.4.1 of this document). However, such forested areas do not exist within this range of mobility. The region already has experienced significant deforestation and conversion to agricultural land use. In other words, the project area represents the last remaining forest that is accessible to the secondary agents living within or near the project area. Because there is no forested area (except for the project area) that is accessible to the secondary agents within the range of their mobility, these agents are unable shift their deforestation activity to nearby forests, and therefore activity-shifting leakage would not occur. Cumulative emissions from activity-shifting leakage are set to zero for carbon accounting purposes.

4.8.2 Determining Emissions from Market-Effects Leakage

Under Baseline scenario P1 - applicable to this project - market leakage does not apply when the primary agent is known, and the project proponent has demonstrated that there is no possibility for that agent to be awarded a further/replacement concession within the national boundary. The primary agent, Sodefor, holds historical concessions far in excess of the DRC legal maximum concession holdings, and therefore is deemed ineligible for a replacement legal concession award. Cumulative emissions from market-effects leakage are therefore set to zero for carbon accounting purposes.

4.9 Net GHG Emission Mitigations

According to VM0009 Methodology, cumulative emissions reductions and/or removals are quantified as those since the project crediting period start date up to the end of the current monitoring period. Current gross emissions reductions and/or removals (GERs) are quantified as the difference between cumulative emissions up to the end of the current monitoring period and cumulative emissions up to the end of the previous monitoring period, minus any project emissions that have occurred during the current monitoring period, emissions from leakage and carbon not decayed in certain decay pools. Net emissions reductions and/or removals (NERs) are GERs minus a confidence deduction (if any) and buffer pool allocation. NERs are determined for each project accounting area and if the project area contains multiple project accounting areas, summed across project accounting areas.

NERs are calculated by subtracting the buffer allocation from the gross emissions reductions, using equation [F.50] of the VM0009 methodology version 2.0:

$$\Delta NER^{[m]} = \Delta GER^{[m]} - BA^{[m]}$$

NERs are calculated at each monitoring event.

4.9.1 Determining Deductions for Uncertainty

Deductions for uncertainty are determined using equation [F.53] of the VM0009 methodology version 2.0:

$$F_{U,GER}^{[m]} = F_{\Delta}^{[m]} + 1.64 \sqrt{F_{B,\Delta}^{[m]^2} + F_{P}^{[m]^2} + F_{B}^{[m]^2} + F_{EM}^{[m]^2} + F_{P}^{[m]^2} + F_{B}^{[m]^2}} - 0.133$$

Uncertainty deductions are documented for each monitoring event.

4.9.2 Determining Buffer Account Allocation

Allocation to the buffer pool is determined using the AFOLU tool for non-permanence risk and buffer determination.

4.9.2.1 Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination

The project proponent has assessed the non-permanence risks that are applicable to this project, and judged the overall risks to the permanence of the project's benefits to be moderate. In most cases, these risks are mitigated to some extent either by the project proponent's management actions or by project activities. The assessment was conducted as prescribed in the VCS AFOLU Non-Permanence Risk Tool, version 3.1.

For the sake of brevity and because the risk of reversal assessment is subject to change for each monitoring event, the risk assessment is presented in Annex R, 'Annex R - Non-Permanence Risk Worksheet v1.1.xlsx'.

Natural Risks

- Fire: The project area is comprised mostly of wet tropical rainforest and swamp forest and the risk of reversals from natural fires is deemed to be low. Although human-caused fires are observed in the vicinity of the project area, the absence of commercial logging will dramatically decrease the extent of human access to the project area. Project activities which maintain or reduce the prevalence of human activities (e.g., forest monitoring and enforcement) mitigate the risk of human-caused fires. (Source: Amsallem 2002 (<ftp://ftp.fao.org/docrep/fao/008/Y8127e/Y8127e.pdf>)).
- Insect pests: The project area is comprised principally by dense, diverse, mostly intact, humid, primary equatorial rainforest. Because of the Congo basin's moist climatic regime and high biodiversity levels, these forests inherently have low susceptibility to catastrophic losses due to insect pests.
- Extreme weather: The risk of extreme weather affecting carbon stocks is deemed to be very low. Tropical cyclones and hurricanes do not have serious effects on the region and

the majority of the project area is low slope, eliminating the risk of landslide. The most significant severe weather risk is flooding, as much of the swamp forests flood seasonally. However, this seasonal flooding poses a very low risk to carbon stocks.

- Geologic events: The risk of geologic events affecting carbon stocks is deemed to be very low. There is no volcanic activity near the project area. Major earthquakes have occurred near the eastern border of the DRC in the western African Rift Valley, and although there is a continuing small risk of earthquakes in the Mai Ndombe region, such an event poses no risk to carbon stocks.

(Source: <http://earthquake.usgs.gov/earthquakes/world/africa/seismicity.php>)

Total Non-Permanence Risk

Risk Category	Score
Internal Risks	10
External Risks	14
Natural Risks	1
Total Score	25
Overall Risk Rating	25%

Table: Total non-permanence risk rating.

Parameters

VM0009 Methodology indicates that the baseline emissions models for each project accounting area is parameterized differently depending on the associated baseline type. Each PAI and PAA has distinct Parameters values. Below follow details of parametrization of project PAIs.

Parameters		PAI
α	Average effects of time and other covariates on degradation, deforestation and conversion (conversion parameters)	-0.77048357
β	Effect of time on degradation, deforestation and conversion (conversion parameters)	0.00058764
$\theta 1$	Effect of covariates on degradation, deforestation and conversion (conversion parameters)	-1.44402070
$\theta 2$	Effect of covariates on degradation, deforestation and conversion (conversion parameters)	-0.18956740
X1	Covariates as of the project start date	0.434
X2	Covariates as of the project start date	4.416
tPAI	Time of project activity instance start date relative to project start date for a project activity instance in a grouped project (days)	0
q	Time shift between start of degradation and conversion (days)	0

The parametrization of α , β , and θ is based on observation of conversion of the reference area over the historical reference period. With this end, it was developed a sample size of 3000 random points within the limits of the Reference Area, then it was visually interpreted all images at each point, which was recorded as 0 or 1 (0 = native vegetation; 1 = converted area). Such registration was done for each of all 3000, year-by-year, throughout the reference period (2011 - 2021). It was discarded those points for which the first conversion entry in the table is 1, leaving a total of 2846 points on the analysis.

VM0009 Methodology indicates that analyses must have “double coverage” for at least 90% of the reference area over the entire reference period. In the case of the project PAIs, it was achieved 100% “double coverage”, and no point had lower than 8 coverages.

The procedure was also executed by independent verification. On average, there was 94.5% alignment. No systematic errors were identified in the accuracy assessment. Methodology VM0009 does not provide a limit of accuracy, but the overall accuracy of 94.5% exceeds the limits of other VCS methodologies

The covariates considered were Water Resources and Roads, the respective data were obtained through a spatial analysis.

Four models were developed to assess the effect of covariates. The variables evaluated during model selection were:

- Model 1: CONVERSION ~ TIME
- Model 2: CONVERSION ~ TIME + RIVER
- Model 3: CONVERSION ~ TIME + ROAD
- Model 4: CONVERSION ~ TIME + RIVER + ROAD

In all four estimated models, the coefficients associated with the effect of covariates on conversion were statistically significant (existing, different from zero) in the corresponding hypothesis tests (perceived through low p-values, close to zero - see Table 8). It means that in all tested scenarios, the covariates used are associated with conversion, and therefore the best models are those that consider these covariates in their structure, as they are thus able to better predict the outcome (conversion) in corresponding situations. In addition and very importantly, the AIC adjustment quality criterion calculated for each of the four estimated models indicated the lowest value for model 4. Thus, model 4 has the best fit and was the source of α , β , θ_1 and θ_2 .

For the parameter q was applied the conservative value of Zero, suggested by VM0009 Methodology.

For λ_{soc} , it was applied the default value of 0.2), derived from E. Davidson & Ackerman (1993) and suggested by VM0009 Methodology.

Year	Baseline scenario (tCO ₂ e)	Estimated project mitigations (tCO ₂ e)	Estimated leakage (tCO ₂ e)	Estimated net GHG emission mitigations (tCO ₂ e)
1	41,027,474	10,256,869	-	30,770,606
2	54,219,528	13,554,882	-	40,664,646
3	72,202,461	18,050,615	-	54,151,846
4	90,035,394	22,508,849	-	67,526,546
5	111,607,730	27,901,932	-	83,705,797
6	140,439,520	35,109,880	-	105,329,640

7	158,895,801	39,723,950	-	119,171,851
8	187,042,192	46,760,548	-	140,281,644
9	213,905,410	53,476,353	-	160,429,058
10	245,755,743	61,438,936	-	184,316,807
11	287,587,902	71,896,976	-	215,690,927
12	284,888,778	71,222,194	-	213,666,583
13	299,327,528	74,831,882	-	224,495,646
14	305,391,234	76,347,809	-	229,043,426
15	321,478,386	80,369,596	-	241,108,789
16	356,601,388	89,150,347	-	267,451,041
17	288,827,756	72,206,939	-	216,620,817
18	276,915,209	69,228,802	-	207,686,407
19	254,906,755	63,726,689	-	191,180,066
20	256,420,217	64,105,054	-	192,315,163
21	281,337,194	70,334,299	-	211,002,896
22	173,759,798	43,439,950	-	130,319,849
23	174,078,005	43,519,501	-	130,558,504

24	167,237,217	41,809,304	-	125,427,912
25	144,074,502	36,018,626	-	108,055,877
26	163,699,942	40,924,986	-	122,774,957
27	86,670,157	21,667,539	-	65,002,618
28	81,058,875	20,264,719	-	60,794,156
29	75,626,997	18,906,749	-	56,720,248
30	53,732,689	13,433,172	-	40,299,517
Total	5,648,751,783	1,412,187,946	0	4,236,563,837

Figure: Estimated net GHG emission mitigations (tCO₂e) for all planned PAIs

5. Monitoring

5.1 Monitoring Plan

The monitoring plan is provided as a self-contained Annex document accompanying the monitoring report, 'Annex A – DRC REDD+ Harvesting Project Monitoring Plan v1.0.docx'. The monitoring plan contains a plan for all MRV activities associated with the DRC REDD+ Harvesting Project, including a full sampling protocol for the Project Accounting Area and Proxy Area, a soil sampling protocol, Identification of Disturbance protocol and a description of data collection, storage and QA/QC procedures. The following PDRs provide some additional specific information about particular sections within the monitoring report.

5.2 Data and Parameters Monitored

5.2.1 Data and parameters available at validation

Data Unit / Parameter:	$\alpha\alpha$
Data unit:	Unitless
Description:	Combined effects of $\beta\beta$ and $\theta\theta$ at the start of the historic reference period for the Project Accounting Area
Source of data:	Reference area and historic reference period
Value applied:	0.9488756
Justification of choice of data or description of measurement methods and procedures applied:	Time and place in which the logistic model is fit
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	$\beta\beta$
Data unit:	Unitless
Description:	Effect of time on the cumulative proportion of conversion over time for Project Accounting Area
Source of data:	Reference area and historic reference period
Value applied:	0.0006167

Justification of choice of data or description of measurement methods and procedures applied:	Time and place in which the logistic model is fit
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	γ
Data unit:	days
Description:	Time shift from beginning of historic reference period to Project Start Date
Source of data:	Historic reference period
Value applied:	-8720
Justification of choice of data or description of measurement methods and procedures applied:	Time in which the logistic model is fit. The start of the historic reference period is 9 May 1984 and the Project Start Date is 19 September, 2013.
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	$\theta\theta$
Data unit:	unitless
Description:	Effect of certain covariates on the cumulative proportion of conversion over time
Source of data:	Reference area and historic reference period
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Time and place in which the logistic model is fit
Purpose of the data	Determination of baseline scenario.
Any comment:	Parameter not used

Data Unit / Parameter:	λ SSSSS
Data unit:	proportion (unitless)
Description:	Exponential soil carbon decay parameter
Source of data:	Value from the literature. Davidson, E., and Ackerman, I. 1993. Changes in soil carbon inventories following cultivation of previously untilled soils. Biogeochemistry, 20(3), 161-193.
Value applied:	0.2
Justification of choice of data or description of measurement methods and procedures applied:	Default value from VCS methodology VM0009 V2.0
Purpose of the data	Determination of baseline emissions.
Any comment:	

Data Unit / Parameter:	σ EEEE
Data unit:	standard deviation (unitless)
Description:	The estimated standard deviation of the state observations used to fit the logistic function for the Forest Project Accounting Area BEM
Source of data:	Remote sensing image interpretation
Value applied:	0.00892887
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline emissions.
Any comment:	

Data Unit / Parameter:	BB
Data unit:	set
Description:	The set of all selected carbon pools in biomass. This is a subset of CC
Source of data:	PD

Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline emissions.
Any comment:	

Data Unit / Parameter:	<i>cc</i>
Data unit:	set
Description:	The set of all selected carbon pools
Source of data:	Monitoring records
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline emissions.
Any comment:	

Data Unit / Parameter:	<i>jj</i>
Data unit:	set
Description:	The set of all observations of conversion. When superscripted with a monitoring period, the conversion observations are taken for leakage analysis.
Source of data:	Remote sensing image interpretation or field observations in the leakage area.
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline emissions.

Any comment:	
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Data Unit / Parameter:	<i>MM</i>
Data unit:	set
Description:	The set of all monitoring periods
Source of data:	Monitoring records
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline emissions.
Any comment:	

Data Unit / Parameter:	<i>TT</i>
Data unit:	ha
Description:	The set of all species/categories of livestock
Source of data:	Monitoring records
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of project emissions.
Any comment:	Parameter not used

Data Unit / Parameter:	<i>AAPPAAAA</i>
Data unit:	ha
Description:	Area of Project Accounting Area
Source of data:	GIS analysis prior to sampling

Value applied:	248,956
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>AApppp</i>
Data unit:	ha
Description:	Area of proxy area for the Project Accounting Area
Source of data:	GIS analysis prior to sampling

Value applied:	29,361.2
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>ccLL pp</i>
Data unit:	tCO ₂ e/ha
Description:	Carbon stocks in project leakage area
Source of data:	Leakage area sampling
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Direct measurement
Purpose of the data	Calculation of leakage.

Any comment:	Parameter not used
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Data Unit / Parameter:	<i>ffLLSS ii</i>
Data unit:	kg CH ₄ head ⁻¹ yr ⁻¹
Description:	Emission factor for the defined livestock population, <i>ii</i>
Source of data:	IPCC default values
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Obtained directly from IPCC default values
Purpose of the data	Calculation of project emissions.
Any comment:	Parameter not used

Data Unit / Parameter:	<i>mm</i>
Data unit:	tCO ₂ e/ha
Description:	Average carbon in merchantable trees cut each year as a result of legally-sanctioned commercial logging
Source of data:	Timber harvest plans or measurement of carbon stocks in merchantable trees in the Project Accounting Area.
Value applied:	1,288,795.4
Justification of choice of data or description of measurement methods and procedures applied:	the most accurate of the two data sources should be used if both are available
Purpose of the data	Calculation of baseline emissions.
Any comment:	

Data Unit / Parameter:	<i>nndd</i>
Data unit:	unitless

Description:	Number of spatial points in the Project Accounting Area reference area
Source of data:	Remote sensing image interpretation
Value applied:	1,572
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>ooij</i>
Data unit:	unitless
Description:	State observation for the <i>ijth</i> sample point in the Project's reference area
Source of data:	Remote sensing image interpretation
Value applied:	See the document BEM Export Grid PAA, available on request
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>ppLL EEEE</i>
Data unit:	unitless
Description:	Portion of leakage related to market
Source of data:	VCS methodology VM0009 V2.0 Section 8.3.3
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	No market leakage from the Project

Purpose of the data	Calculation of leakage.
Any comment:	Parameter not used

Data Unit / Parameter:	qq
Data unit:	days
Description:	Lag between start of degradation and conversion
Source of data:	Expert knowledge, results from the PRA or reports from peer-reviewed literature
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Commonly accepted methods in the social sciences, choice determined and justified by Project Proponent
Purpose of the data	Determination of baseline scenario.
Any comment:	Parameter not used

Data Unit / Parameter:	r_{SSCC}^{bb}
Data unit:	unitless
Description:	Carbon fraction of biomass for burned wood or herbaceous material bb
Source of data:	Literature estimates or direct measurement
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	No burning of wood or herbaceous material in the Project.
Purpose of the data	Calculation of project emissions.
Any comment:	Parameter not used

Data Unit / Parameter:	r_{RRSS}
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Data unit:	unitless
Description:	Expansion factor for above-ground biomass to below-ground biomass (root/shoot ratio)
Source of data:	IPCC Guidelines for National Greenhouse Gas Inventories, 2006, Volume 4: Agriculture, Forestry and Other Land Use, Chapter 4: Forest Land, Table 4.4
Value applied:	0.37
Justification of choice of data or description of measurement methods and procedures applied:	IPCC default value for Wet Tropical Forest Ecosystems.
Purpose of the data	Calculation of baseline emissions.
Any comment:	

Data Unit / Parameter:	<i>rr_{UU}</i>
Data unit:	unitless
Description:	Onset proportion of conversion immediately adjacent to Project Area
Source of data:	GIS analysis and image interpretation
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Positions the baseline emissions models relative to the instantaneous rate of deforestation
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>tt</i>
Data unit:	days
Description:	Time since Project Start Date
Source of data:	Monitoring records
Value applied:	N/A

Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>tti</i>
Data unit:	days
Description:	The point in time of the observation made at point <i>ii</i>
Source of data:	Remote sensing image interpretation
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Indicate one of the following: • Determination of baseline scenario (AFOLU projects only). • Calculation of baseline emissions. • Calculation of project emissions. • Calculation of leakage.
Any comment:	

Data Unit / Parameter:	<i>ttPPAA</i>
Data unit:	days
Description:	Time prior to the Project Start Date when the primary agent began commercial logging in the Project Accounting Area.
Source of data:	Harvest plans prepared for the Project Accounting Area, or by public record
Value applied:	-2,901

Justification of choice of data or description of measurement methods and procedures applied:	Should use the most accurate of the two data sources if both are available
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>ttmm</i>
Data unit:	days
Description:	Length of project or logging in baseline scenario
Source of data:	PD
Value applied:	9,125
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>ttPPL</i>
Data unit:	days
Description:	Length of project crediting period
Source of data:	PD
Value applied:	10,957
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	$ttPPAAPP$
Data unit:	days
Description:	Number of days after the Project Start Date for the start of a Project Activity instance in a grouped project
Source of data:	PD
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	$wwij$
Data unit:	unitless
Description:	weight applied to the ij^{th} sample point in the Forest Project Accounting Area reference area
Source of data:	Remote sensing image interpretation
Value applied:	See the document BEM Export Grid, available upon request
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	xx
Data unit:	unitless
Description:	Covariate values
Source of data:	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery

Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Should use the most accurate of the data sources if both are available
Purpose of the data	Determination of baseline scenario.
Any comment:	Parameter not used

Data Unit / Parameter:	<i>xxii</i>
Data unit:	geographic coordinates
Description:	Latitude of the <i>iith</i> sample point
Source of data:	Remote sensing image interpretation
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

Data Unit / Parameter:	<i>xx00</i>
Data unit:	unitless
Description:	Covariate values as of the Project Start Date
Source of data:	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Should use the most accurate of the data sources if both are available
Purpose of the data	Determination of baseline scenario.
Any comment:	Parameter not used

Data Unit / Parameter:	xxPPPPPP
Data unit:	unitless
Description:	Covariate values as of a project activity instance start date
Source of data:	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Should use the most accurate of the data sources if both are available
Purpose of the data	Determination of baseline scenario.
Any comment:	Parameter not used

Data Unit / Parameter:	xxSSAA
Data unit:	unitless
Description:	Covariate values as of the arrival of the secondary agents
Source of data:	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	Should use the most accurate of the data sources if both are available
Purpose of the data	Determination of baseline scenario.
Any comment:	Parameter not used

Data Unit / Parameter:	yyii
Data unit:	geographic coordinates
Description:	Longitude of the ii^{th} sample point
Source of data:	Remote sensing image interpretation

Value applied:	N/A
Justification of choice of data or description of measurement methods and procedures applied:	N/A
Purpose of the data	Determination of baseline scenario.
Any comment:	

5.2.2 Data and Parameters Monitored

Data Unit / Parameter:	$ww[mm]$
Data unit:	set
Description:	The set of all burned wood or herbaceous material
Source of data:	Monitoring records
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	N/A
Any comment:	Parameter not used

Data Unit / Parameter:	$AA[mm]$ $BB \Delta\Delta PPAAAA$
Data unit:	ha
Description:	Area of avoided conversion
Source of data:	Generated from equation
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.3.4

Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.52]
Any comment:	Parameter not used

Data Unit / Parameter:	AA ^[mm=00] PP 11
Data unit:	ha
Description:	Area of Forest Project Accounting Area stratum 1 prior to first verification event – Semi-deciduous forest, Logged FORESCOM
Source of data:	GIS analysis prior to sampling
Description of measurement methods and procedures to be applied:	GIS analysis of best available data
Frequency of monitoring/recording:	First monitoring period
Value applied:	55,244.75
Monitoring equipment:	GIS
QA/QC procedures to be applied:	Cross-check of GIS analysis
Purpose of the data	Calculation of baseline emissions.
Calculation method:	GIS analysis
Any comment:	

Data Unit / Parameter:	AA ^[mm=00] PP 22
Data unit:	ha
Description:	Area of Forest Project Accounting Area stratum 2 prior to first verification event – Semi-deciduous forest, Logged SOFORMA
Source of data:	GIS analysis prior to sampling

Description of measurement methods and procedures to be applied:	GIS analysis of best available data
Frequency of monitoring/recording:	First monitoring period
Value applied:	23,205.02
Monitoring equipment:	GIS
QA/QC procedures to be applied:	Cross-check of GIS analysis
Purpose of the data	Calculation of baseline emissions.
Calculation method:	GIS analysis
Any comment:	

Data Unit / Parameter:	AA ^[mm=00] PP 33
Data unit:	ha
Description:	Area of Forest Project Accounting Area stratum 3 prior to first verification event – Semi-deciduous forest, Unlogged
Source of data:	GIS analysis prior to sampling
Description of measurement methods and procedures to be applied:	GIS analysis of best available data
Frequency of monitoring/recording:	First monitoring period
Value applied:	49,476.66
Monitoring equipment:	GIS
QA/QC procedures to be applied:	Cross-check of GIS analysis
Purpose of the data	Calculation of baseline emissions.
Calculation method:	GIS analysis
Any comment:	

Data Unit / Parameter:	AA ^[mm=00] PP 44
Data unit:	ha

Description:	Area of Forest Project Accounting Area stratum 4 prior to first verification event – Swamp Forest
Source of data:	GIS analysis prior to sampling
Description of measurement methods and procedures to be applied:	GIS analysis of best available data
Frequency of monitoring/recording:	First monitoring period
Value applied:	121,030.00
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Cross-check of GIS analysis
Purpose of the data	Calculation of baseline emissions.
Calculation method:	GIS analysis
Any comment:	

Data Unit / Parameter:	$bb[mm]$ bb
Data unit:	tonnes
Description:	Biomass in burned wood or herbaceous material bb
Source of data:	Measurements of biomass
Description of measurement methods and procedures to be applied:	Scale
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	Summation
Any comment:	Parameter not Used

Data Unit / Parameter:	$cc[mm]$
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	<i>BB</i>
Data unit:	tCO ₂ e/ha
Description:	Baseline carbon stocks at the end of the current monitoring period for the Forest Project Accounting Area
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 6.4 and Appendix B.4
Frequency of monitoring/recording:	At Project Start
Value applied:	100.64
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [B.33]
Any comment:	

Data Unit / Parameter:	<i>ss[mm]</i> <i>BB BBBBBB</i>
Data unit:	tCO ₂ e
Description:	Carbon not decayed in BGB at the end of the current monitoring period
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.7
Frequency of monitoring/recording:	Every monitoring period
Value applied:	479,303
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.32]
Any comment:	

Data Unit / Parameter:	<i>SS</i> [<i>mm</i>] <i>BB DDDD</i>
Data unit:	tCO ₂ e
Description:	Carbon not decayed in DW at the end of the current monitoring period
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.6
Frequency of monitoring/recording:	Every monitoring period
Value applied:	5,182,903
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.36]
Any comment:	

Data Unit / Parameter:	<i>SS</i> [<i>mm</i>] <i>BB SSSSSS</i>
Data unit:	tCO ₂ e
Description:	Carbon not decayed in SOC at the end of the current monitoring period
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.5
Frequency of monitoring/recording:	Every monitoring period
Value applied:	249,051
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.

Calculation method:	Subtraction
Any comment:	

Data Unit / Parameter:	<i>SS^[mm]</i> <i>BB DDPP</i>
Data unit:	tCO ₂ e
Description:	Carbon not decayed in WP at the end of the current monitoring period
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix C
Frequency of monitoring/recording:	Every monitoring period
Value applied:	600,011
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [C.1]
Any comment:	

Data Unit / Parameter:	<i>SS^[mm]</i> <i>BB AABBEAA</i>
Data unit:	tCO ₂ e/ha
Description:	Baseline carbon stocks in above-ground merchantable trees at the end of the current monitoring period
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	1.52

Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Weighted per ha average
Any comment:	

Data Unit / Parameter:	<i>SS[mm]</i> <i>BB BBBEEAA</i>
Data unit:	tCO ₂ e/ha
Description:	Baseline carbon stocks in below-ground merchantable trees at the end of the current monitoring period
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	0.56
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Weighted per ha average
Any comment:	

Data Unit / Parameter:	<i>SS[mm=00]</i> <i>PP AABBEAA</i>
Data unit:	tCO ₂ e
Description:	Project carbon stocks in above-ground merchantable trees at Project Start
Source of data:	Project accounting area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.1

Frequency of monitoring/recording:	At Project Start
Value applied:	24,755,965
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Summation across plots
Any comment:	

Data Unit / Parameter:	<i>ss^[mm=00]</i> <i>PP BBBBEEAA</i>
Data unit:	tCO ₂ e
Description:	Project carbon stocks in below-ground merchantable trees at Project Start
Source of data:	Project accounting area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.3
Frequency of monitoring/recording:	At Project Start
Value applied:	9,159,707
Monitoring equipment:	Equipment list in Annex 11
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Summation across plots
Any comment:	

Data Unit / Parameter:	<i>cc^[mm]</i> <i>BB bb</i>
Data unit:	tCO ₂ e/ha
Description:	Baseline scenario average carbon stock in selected carbon pools
Source of data:	Proxy area sampling

Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.1.5
Frequency of monitoring/recording:	At Project Start
Value applied:	See Annex 16 – Proxy Area Carbon Model
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Weighted per-ha average
Any comment:	

Data Unit / Parameter:	$cc[mm]$ <i>BB BBEE</i>
Data unit:	tCO ₂ e/ha
Description:	Baseline carbon stocks in biomass at the end of the current monitoring period for the Project Accounting Area
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	At Project Start
Value applied:	100.64
Monitoring equipment:	Equipment list in Annex 11
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.18]
Any comment:	

Data Unit / Parameter:	$cc[mm]$ <i>BB SSSSSS</i>
Data unit:	tCO ₂ e/ha

Description:	Baseline soil carbon stocks at the end of the current monitoring period for the Project Accounting Area
Source of data:	Proxy area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.6
Frequency of monitoring/recording:	At Project Start
Value applied:	57.0
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.32]
Any comment:	

Data Unit / Parameter:	$c_c^{[mm]}$ pp
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks at the end of the current monitoring period for the Project Accounting Area
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Every monitoring period
Value applied:	1039.34
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [B.31]
Any comment:	

Data Unit / Parameter:	$cc^{[mm-1]}$ <i>PP</i>
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks at the beginning of the current monitoring period
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior monitoring period
Value applied:	1,061.1
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Already reviewed
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [B.31]
Any comment:	

Data Unit / Parameter:	$cc^{[mm=0]}$ <i>PP</i>
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks prior to first verification event for the Project Accounting Area
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior monitoring period
Value applied:	1,061.1
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Already reviewed
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [B.31]

Any comment:	
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Data Unit / Parameter:	$cc^{[mm=00]}$ PP 11 BBEE
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks in biomass in Project Accounting Area stratum 1 at project start – Semi-deciduous forest, Logged FORESCOM
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	1,087.15
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$cc^{[mm=00]}$ PP 22 BBEE
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks in biomass in Project Accounting Area stratum 2 at project start – Semi-deciduous forest, Logged SOFORMA
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	917.37

Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$cc[mm=00]$ PP 33 BBEE
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks in biomass in Project Accounting Area stratum 3 at project start – Semi-deciduous forest, Unlogged
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	1,049.49
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$cc[mm=00]$ PP 44 BBEE
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks in biomass in Project Accounting Area stratum 4 at project start – Swamp Forest
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2

Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	1,036.75
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$cc^{[mm=00]}$ <i>PP AABBEAA</i>
Data unit:	tCO ₂ e/ha
Description:	Project carbon stocks in above-ground merchantable trees prior to first verification event
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	99.44
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$cc^{[mm=00]}$ <i>PP BBEE</i>
Data unit:	tCO ₂ e
Description:	Project carbon stocks in biomass prior to first verification event
Source of data:	Project Accounting Area sampling

Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	264,166,731
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.17]
Any comment:	

Data Unit / Parameter:	$c_c^{[mm]}$ $PP\ bb$
Data unit:	tCO ₂ e/ha
Description:	Average carbon in biomass in the Project Accounting Area
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2
Frequency of monitoring/recording:	Prior to first monitoring event
Value applied:	1,036.75
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$c_c^{[mm=00]}$ $PP\ SSSSSS$
Data unit:	tCO ₂ e/ha

Description:	Project soil carbon stocks prior to first verification event in the Forest Project Accounting Area
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.6
Frequency of monitoring/recording:	At Project Start
Value applied:	79.8
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Average of plot measurements in a given stratum
Any comment:	

Data Unit / Parameter:	$SS^{[mm]}$ $PP \Delta \Delta DDP$
Data unit:	tCO ₂ e
Description:	Project carbon stocks in wood products at the end of the current monitoring period
Source of data:	Project Accounting Area sampling
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix C
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [C.2]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ $\Delta\Delta BBEERR$
Data unit:	tCO ₂ e
Description:	GERs for the current monitoring period
Source of data:	Area measurements
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.4.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	11,970,624
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of GER calculations
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.53]
Any comment:	

Data Unit / Parameter:	$EE^{[ii]}$ $\Delta\Delta BBEERR$
Data unit:	tCO ₂ e
Description:	GERs for monitoring period <i>ii</i>
Source of data:	Area measurements
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.4.1
Frequency of monitoring/recording:	Prior monitoring period
Value applied:	11,970,624
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of GER calculations
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.53]
Any comment:	

Data Unit / Parameter:	$EE^{[ii]}$ $\Delta\Delta NNEERR$
Data unit:	tCO ₂ e
Description:	NERs for monitoring period ii
Source of data:	Area measurements
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.4.3
Frequency of monitoring/recording:	prior monitoring period
Value applied:	10,773,562
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of GER calculations
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.55]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ BB
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions at the end of the current monitoring period
Source of data:	Proxy area measurements
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	19,919,574
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.

Calculation method:	Equation [F.16]
Any comment:	

Data Unit / Parameter:	$EE^{[mm-1]}$ BB
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions at the beginning of the current monitoring period
Source of data:	Proxy area measurements
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1
Frequency of monitoring/recording:	Prior monitoring period
Value applied:	3,401,416
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.16]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ $BB \Delta\Delta$
Data unit:	tCO ₂ e
Description:	Change in baseline emissions
Source of data:	Proxy area measurements
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	16,518,158

Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.15]
Any comment:	

Data Unit / Parameter:	$EE[i]$ $BB \Delta BBBBBB$
Data unit:	tCO ₂ e
Description:	Change in baseline emissions from below-ground biomass during monitoring period ii
Source of data:	Monitoring the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.3
Frequency of monitoring/recording:	Already Monitored
Value applied:	5,182,903
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.30]
Any comment:	

Data Unit / Parameter:	$EE[i]$ $BB \Delta DDDD$
Data unit:	tCO ₂ e
Description:	Baseline emissions from dead wood in monitoring period ii
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.2.4 and B.2.5

Frequency of monitoring/recording:	Already Monitored
Value applied:	479,187
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.34]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ $BB \Delta \Delta SSSSSS$
Data unit:	tCO ₂ e
Description:	Baseline change in emissions from soil carbon
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.2.1, 8.1.2.2, 8.1.2.3 and Appendix B.2.6
Frequency of monitoring/recording:	Every monitoring period
Value applied:	375,640
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions
Calculation method:	Equation [F.26]
Any comment:	

Data Unit / Parameter:	$EE^{[ii]}$ $BB \Delta \Delta SSSSSS$
Data unit:	tCO ₂ e
Description:	Baseline emissions from soil carbon in monitoring period <i>ii</i>
Source of data:	Measurements in the proxy area

Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.2.1, 8.1.2.2, 8.1.2.3 and Appendix B.2.6
Frequency of monitoring/recording:	Every monitoring period
Value applied:	375,640
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.26]
Any comment:	

Data Unit / Parameter:	<i>EE</i> ^[mm] <i>BB AABBEAA</i>
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions from above-ground commercial trees at the end of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.6.1, 8.1.6.2, 8.1.6.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	7,395,725
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.37]
Any comment:	

Data Unit / Parameter:	<i>EE</i> ^[mm] <i>BB BBBBBB</i>
Data unit:	tCO ₂ e

Description:	Cumulative baseline emissions from below-ground biomass at the end of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	5,182,903
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.30]
Any comment:	

Data Unit / Parameter:	$EE^{[mm-11]}$ <i>BB BBBBBB</i>
Data unit:	tCO _{2e}
Description:	Cumulative baseline emissions from below-ground biomass at the beginning of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	1,330,110
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.30]
Any comment:	

Data Unit / Parameter:	<i>EE^[mm]</i> <i>BB BBEE</i>
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions from biomass at the end of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.1, 8.1.1.5.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	26,053,941
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.22]
Any comment:	

Data Unit / Parameter:	<i>EE^[mm]</i> <i>BB DDDD</i>
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions from dead wood at the end of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	495,334
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.34]
Any comment:	

Data Unit / Parameter:	$EE^{[mm-1]}$ <i>BB DDDD</i>
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions from dead wood at the beginning of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.3
Frequency of monitoring/recording:	Already monitored
Value applied:	174,056
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.34]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ <i>BB SSSSSS</i>
Data unit:	tCO ₂ e
Description:	Cumulative baseline emissions from soil carbon at the end of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.2.1, 8.1.2.2, 8.1.2.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	375,640
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.27]
Any comment:	

Data Unit / Parameter:	<i>EE</i> [<i>mm</i> -11] <i>BB</i> <i>SSSSSS</i>
Data unit:	tCO _{2e}
Description:	Cumulative baseline emissions from soil carbon at the beginning of the current monitoring period
Source of data:	Measurements in the proxy area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.2.1, 8.1.2.2, 8.1.2.3
Frequency of monitoring/recording:	Already monitored
Value applied:	65,546
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.27]
Any comment:	

Data Unit / Parameter:	<i>EE</i> [<i>mm</i>] <i>BBAA</i>
Data unit:	tCO _{2e}
Description:	Cumulative emissions allocated to the buffer account at the end of the current monitoring period
Source of data:	N/A
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.4.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	2,047,416
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Multiplication

Any comment:	
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Data Unit / Parameter:	$EE^{[mm]}$ LL
Data unit:	tCO _{2e}
Description:	Cumulative emissions from leakage at the end of the current monitoring period
Source of data:	Measurements in the leakage area(s)
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Equation [F.45]
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE^{[mm-1]}$ LL
Data unit:	tCO _{2e}
Description:	Cumulative emissions from leakage at the beginning of the current monitoring period
Source of data:	Measurements in the leakage area(s)
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3
Frequency of monitoring/recording:	Already monitored
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records

Purpose of the data	Calculation of leakage.
Calculation method:	Equation [F.45]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ $LL \Delta\Delta$
Data unit:	tCO _{2e}
Description:	Change in emissions due to leakage
Source of data:	N/A
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Equation [F.44]
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE^{[mm]}$ $LL \text{ AASS } CC$
Data unit:	tCO _{2e}
Description:	Cumulative emissions from activity-shifting leakage in forested strata at the end of the current monitoring period
Source of data:	Measurements in the activity-shifting leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A

Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Equation [F.46]
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE^{[mm]}$ $LL\ AASSBB$
Data unit:	tCO ₂ e
Description:	Cumulative emissions from activity-shifting leakage in native grassland strata at the end of the current monitoring period
Source of data:	Measurements in the activity-shifting leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.3.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Equation [F.47]
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE^{[mm]}$ $LL\ EEEE$
Data unit:	tCO ₂ e
Description:	Cumulative emissions from market leakage at the end of the current monitoring period
Source of data:	Measurements in the market leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3

Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Equation [F.51]
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE^{[mm]}$ $PP \Delta\Delta$
Data unit:	tCO ₂ e
Description:	Change in project emissions
Source of data:	Monitoring records for forest fire, burning, logging, wood products, and natural disturbance events
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.2
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	Equation [F.41]
Any comment:	
Data Unit / Parameter:	$EE^{[mm]}$ $PP \Delta\Delta B B R R N N$
Data unit:	tCO ₂ e
Description:	Cumulative project emissions due to burning at the end of the current monitoring period
Source of data:	Monitoring plots in the project

Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.2.2
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	Equation [F.42]
Any comment:	

Data Unit / Parameter:	$EE^{[mm]}$ $PP \Delta \Delta LSS$
Data unit:	tCO ₂ e
Description:	Cumulative project emissions due to livestock grazing within the Project Area.
Source of data:	Monitoring in the Project Area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.2.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	Equation [F.43]
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE^{[mm]}$ $PP \Delta \Delta SSCC$
Data unit:	tCO ₂ e

Description:	Cumulative project emissions due to the use of synthetic fertilizers within the project area.
Source of data:	Monitoring in the Project Area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.2.5
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	CDM A/R methodological tool Estimation of direct and indirect (e.g. leaching and runoff) nitrous oxide emission from nitrogen fertilization
Any comment:	Parameter not used.

Data Unit / Parameter:	$EE_{UU}^{[mm]}$
Data unit:	tCO ₂ e
Description:	Cumulative confidence deduction at the end of the current monitoring period
Source of data:	N/A
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.4.1.1
Frequency of monitoring/recording:	Every monitoring period
Value applied:	0
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.57]
Any comment:	

Data Unit / Parameter:	$m_{LLSS\ ii}$
Data unit:	count
Description:	The number of head of livestock species/ category <i>ii</i> in the Project Area
Source of data:	Monitoring in the Project Area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.2.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	Use of literature or expert knowledge
Any comment:	Parameter not used.

Data Unit / Parameter:	$pp^{[mm]}$ $LL\ DDEEBB$
Data unit:	proportion (unitless)
Description:	Portion of leakage due to degradation in forest at the end of the current monitoring period
Source of data:	Monitoring in the leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.2.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Summation across leakage plots
Any comment:	Parameter not used.

Data Unit / Parameter:	$pp^{[mm=00]}$ <i>LL DDEEBB</i>
Data unit:	tCO ₂ e
Description:	proportion (unitless)
Source of data:	Portion of leakage due to degradation prior to first verification event
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.2.3
Frequency of monitoring/recording:	At Project Start
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Project verification
Purpose of the data	Calculation of leakage.
Calculation method:	Summation across leakage plots
Any comment:	Parameter not used.

Data Unit / Parameter:	$pp^{[mm]}$ <i>LL SSSSNN BB</i>
Data unit:	proportion (unitless)
Description:	Portion of leakage due to native grasslands conversion at the beginning of the current monitoring period
Source of data:	Monitoring in the leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.2.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Summation across leakage plots
Any comment:	Parameter not used.

Data Unit / Parameter:	$pp^{[mm=00]}$ <i>LL SSSSNN BB</i>
Data unit:	proportion (unitless)
Description:	Portion of leakage due to native grasslands prior to the first verification event
Source of data:	Monitoring in the leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.2.4
Frequency of monitoring/recording:	At Project Start
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Project verification
Purpose of the data	Calculation of leakage.
Calculation method:	Summation across leakage plots
Any comment:	Parameter not used.

Data Unit / Parameter:	$pp^{[mm=11]}$ <i>LL SSSSNN BB</i>
Data unit:	proportion (unitless)
Description:	Portion of leakage due to native grasslands conversion at the end of the current monitoring period
Source of data:	Monitoring in the leakage area
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.3.2.4
Frequency of monitoring/recording:	Every monitoring period
Value applied:	N/A
Monitoring equipment:	Equipment list in Annex 20
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of leakage.
Calculation method:	Summation across leakage plots
Any comment:	Parameter not used.

Data Unit / Parameter:	$pp^{[mm]}$ <i>SSL</i>
Data unit:	proportion (unitless)
Description:	Proportion of AGMT that is not merchantable and goes into slash estimated from inventory
Source of data:	Estimated from inventory
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 8.1.6.3
Frequency of monitoring/recording:	Every monitoring period
Value applied:	0.0905
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of project emissions.
Calculation method:	Conservatively used volume of a cone
Any comment:	

Data Unit / Parameter:	$tt^{[ii-11]}$
Data unit:	days
Description:	Time from Project Start Date to beginning of monitoring period <i>ii</i>
Source of data:	Monitoring records
Description of measurement methods and procedures to be applied:	Monitoring records
Frequency of monitoring/recording:	Already monitored.
Value applied:	597
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records.
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Subtraction
Any comment:	

Data Unit / Parameter:	$tt^{[mm]}$
Data unit:	days
Description:	Time from project start date to end of current monitoring period
Source of data:	Monitoring records
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	Every monitoring period
Value applied:	2,119
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Subtraction
Any comment:	

Data Unit / Parameter:	$tt^{[mm-11]}$
Data unit:	days
Description:	Time from Project Start Date to beginning of current monitoring period
Source of data:	Monitoring records
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	Every monitoring period
Value applied:	597
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Subtraction
Any comment:	

Data Unit / Parameter:	$uv^{[mm]}$ BB
------------------------	---------------------

Data unit:	tCO ₂ e
Description:	Total uncertainty in Proxy Area carbon stock estimate
Source of data:	N/A
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.1.5
Frequency of monitoring/recording:	Every monitoring period
Value applied:	15.62
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [B.32]
Any comment:	

Data Unit / Parameter:	UU^{EE} $EEEE$
Data unit:	tCO ₂ e/ha
Description:	Total uncertainty in Baseline Emissions Models for the Project Accounting Area
Source of data:	N/A
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Section 6.8.10
Frequency of monitoring/recording:	Every monitoring period
Value applied:	0.0089
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [F.13]
Any comment:	

Data Unit / Parameter:	UU^{mm} PP
Data unit:	tCO ₂ e/ha

Description:	Total uncertainty in the Project Accounting Area carbon stock estimate
Source of data:	N/A
Description of measurement methods and procedures to be applied:	VCS Methodology VM0009 V2.0 Appendix B.1.5
Frequency of monitoring/recording:	Every monitoring period
Value applied:	32.17
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	Equation [B.32]
Any comment:	

Data Unit / Parameter:	$wwcc^{[mm=00]}$ $PPii$
Data unit:	tCO ₂ e
Description:	Weighted average carbon stocks for biomass or SOC in the Project for the set of selected strata
Source of data:	Biomass inventory
Description of measurement methods and procedures to be applied:	Inventory or GIS
Frequency of monitoring/recording:	Every monitoring period
Value applied:	See Annex 21 – Soil Carbon Model
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	N/A
Any comment:	

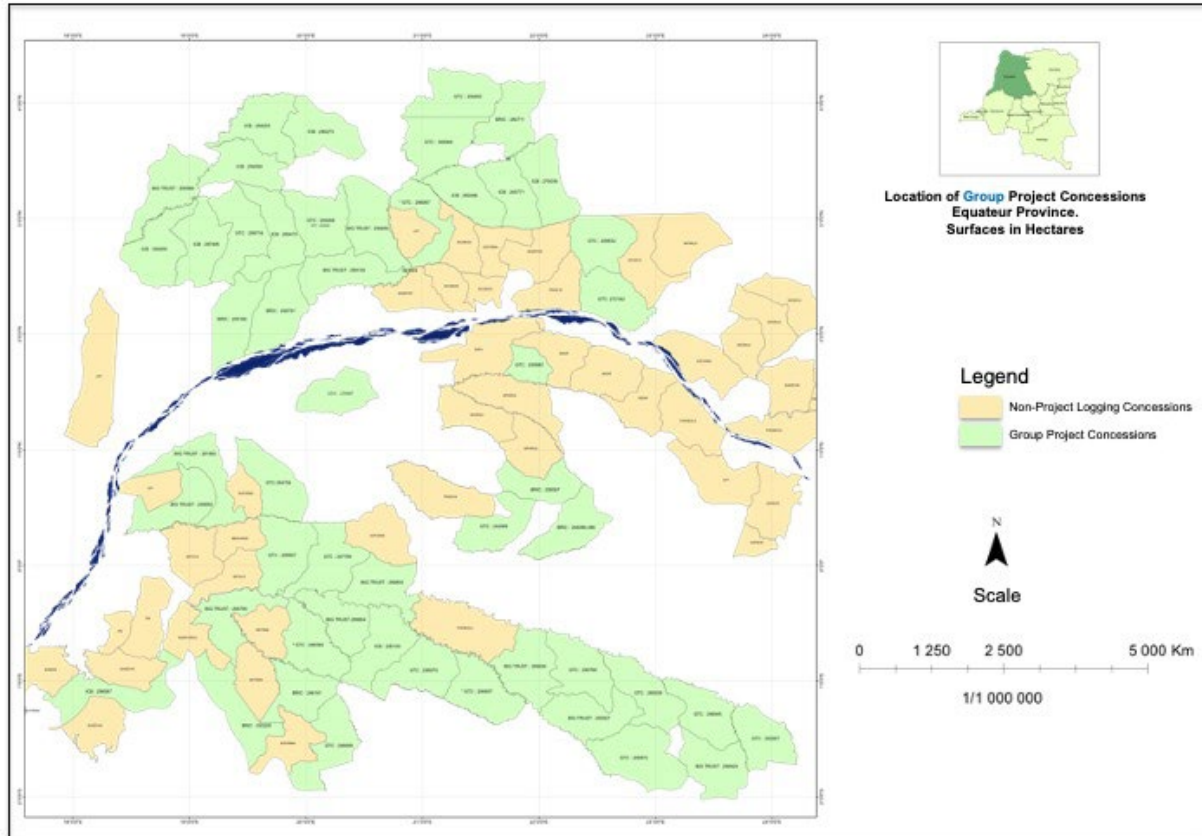
Data Unit / Parameter:	$xx^{[mm]}$
Data unit:	varies
Description:	Covariate values

Source of data:	Participatory Rural Appraisal, analysis of public records, and/or expert interpretation of inventory data or remotely sensed imagery
Description of measurement methods and procedures to be applied:	N/A
Frequency of monitoring/recording:	Every monitoring period
Value applied:	
Monitoring equipment:	N/A
QA/QC procedures to be applied:	Review of monitoring records
Purpose of the data	Calculation of baseline emissions.
Calculation method:	N/A
Any comment:	Parameter not used.

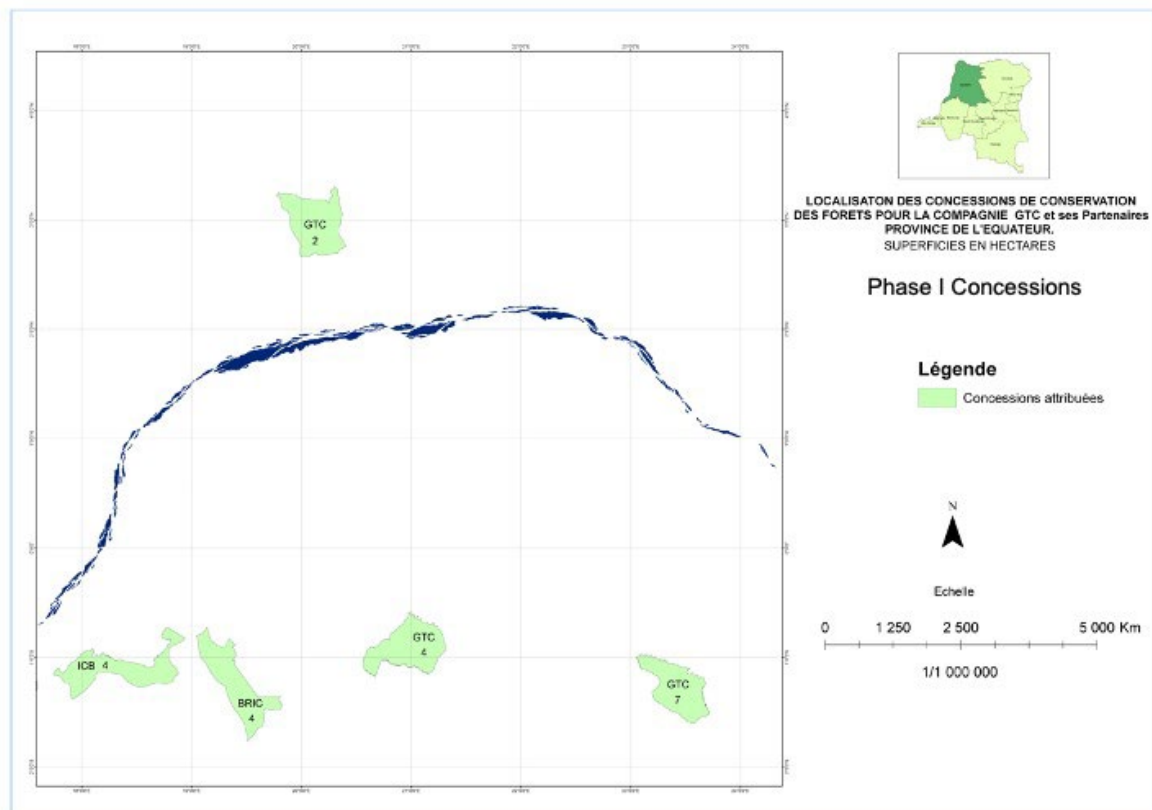
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7. Appendix A. Map of Project Area



8. Appendix B. Phase 1 Project Area

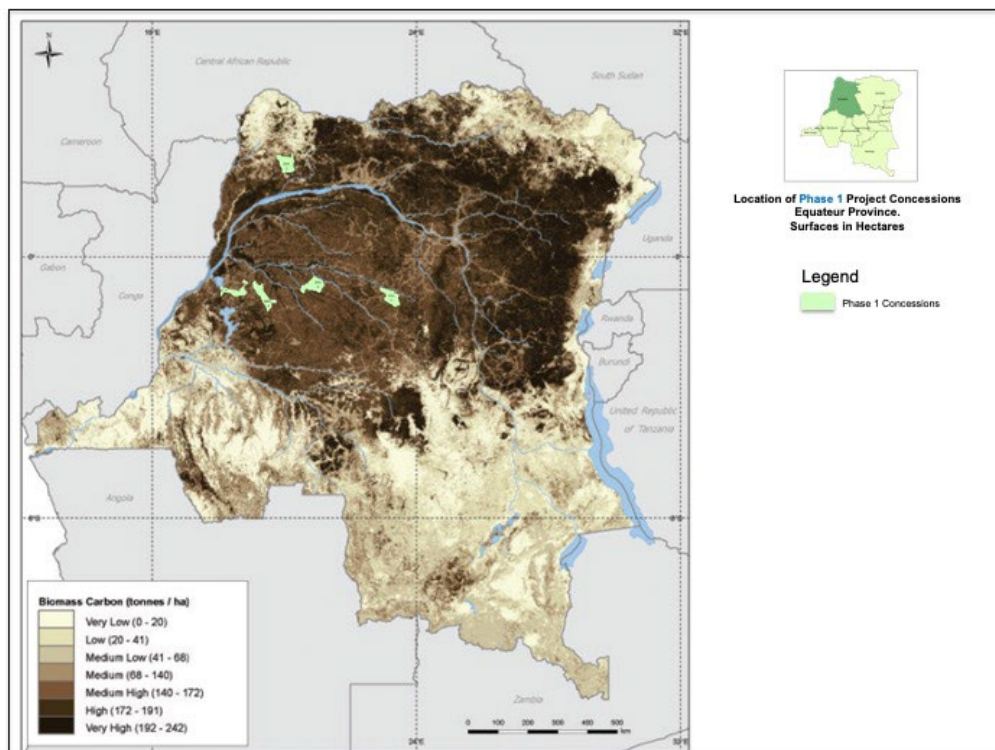


9. Appendix C. Phase 1 Estimated GHG emission reductions or removals (tCO₂e)

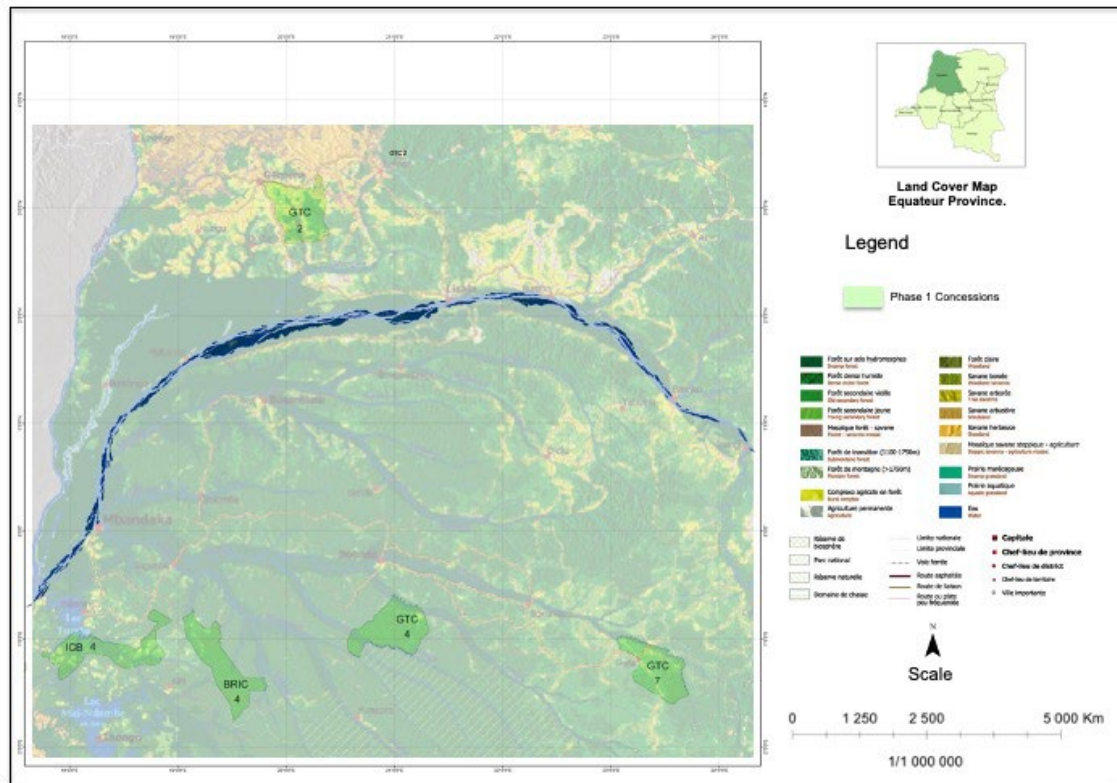
Phase I - ICR		GTC2	GTC4	GTC7	ICB4	BRIC4
Vintage: 30 Years		Budjala, Gemena et Businga	Boende, Monkoto	Bonkungu et Ikela	Bikoro	Ingende, Monkoto
Hectar es						
	1,475,369	294,058	295,070	296,945	296,067	293,229
2022	6,682,869	1,331,973	1,336,557	1,345,050	1,341,073	1,328,218
2023	8,831,692	1,760,258	1,766,316	1,777,540	1,772,284	1,755,295
2024	11,760,890	2,344,081	2,352,148	2,367,094	2,360,095	2,337,472
2025	14,665,655	2,923,034	2,933,093	2,951,731	2,943,004	2,914,793
2026	18,179,522	3,623,388	3,635,858	3,658,961	3,648,143	3,613,173
2027	22,875,865	4,559,423	4,575,114	4,604,186	4,590,573	4,546,569
2028	25,882,165	5,158,613	5,176,366	5,209,259	5,193,857	5,144,070
2029	30,466,865	6,072,396	6,093,295	6,132,014	6,113,883	6,055,277
2030	34,842,552	6,944,521	6,968,421	7,012,701	6,991,966	6,924,943
2031	40,030,578	7,978,554	8,006,013	8,056,886	8,033,064	7,956,061
2032	46,844,521	9,336,651	9,368,784	9,428,317	9,400,439	9,310,330
2033	46,404,867	9,249,023	9,280,854	9,339,828	9,312,213	9,222,949
2034	48,756,761	9,717,783	9,751,227	9,813,190	9,784,175	9,690,387
2035	49,744,464	9,914,643	9,948,765	10,011,983	9,982,380	9,886,692
2036	52,364,862	10,436,919	10,472,838	10,539,386	10,508,224	10,407,495
2037	58,085,966	11,577,201	11,617,044	11,690,863	11,656,296	11,544,563
2038	47,046,478	9,376,904	9,409,174	9,468,964	9,440,967	9,350,469
2039	45,106,071	8,990,158	9,021,098	9,078,422	9,051,579	8,964,814

2040	41,521,165	8,275,645	8,304,126	8,356,894	8,332,185	8,252,315
2041	41,767,690	8,324,781	8,353,430	8,406,512	8,381,655	8,301,312
2042	45,826,358	9,133,720	9,165,153	9,223,393	9,196,121	9,107,970
2043	28,303,327	5,641,178	5,660,593	5,696,562	5,679,719	5,625,275
2044	28,355,159	5,651,509	5,670,959	5,706,994	5,690,120	5,635,577
2045	27,240,879	5,429,420	5,448,106	5,482,725	5,466,514	5,414,114
2046	23,467,959	4,677,434	4,693,531	4,723,356	4,709,390	4,664,247
2047	26,664,701	5,314,581	5,332,871	5,366,759	5,350,890	5,299,599
2048	14,117,499	2,813,780	2,823,463	2,841,405	2,833,004	2,805,847
2049	13,203,491	2,631,607	2,640,664	2,657,444	2,649,587	2,624,188
2050	12,318,705	2,455,259	2,463,709	2,479,365	2,472,034	2,448,338
2051	8,752,392	1,744,452	1,750,456	1,761,579	1,756,370	1,739,534
Total estimated ERs	920,111,967	183,388,891	184,020,024	185,189,365	184,641,801	182,871,886
Average annual ERs	30,670,399	6,112,963	6,134,001	6,172,979	6,154,727	6,095,730

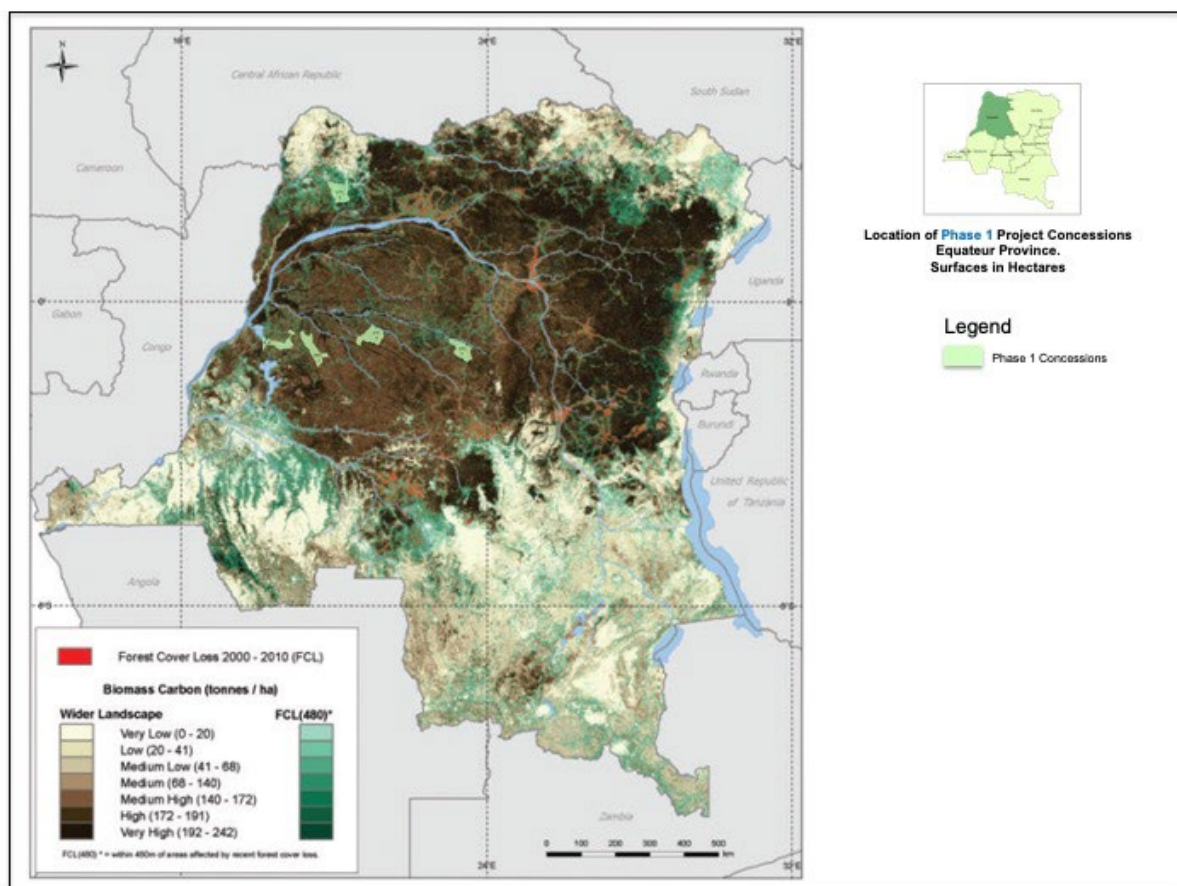
10. Appendix D. Biomass carbon



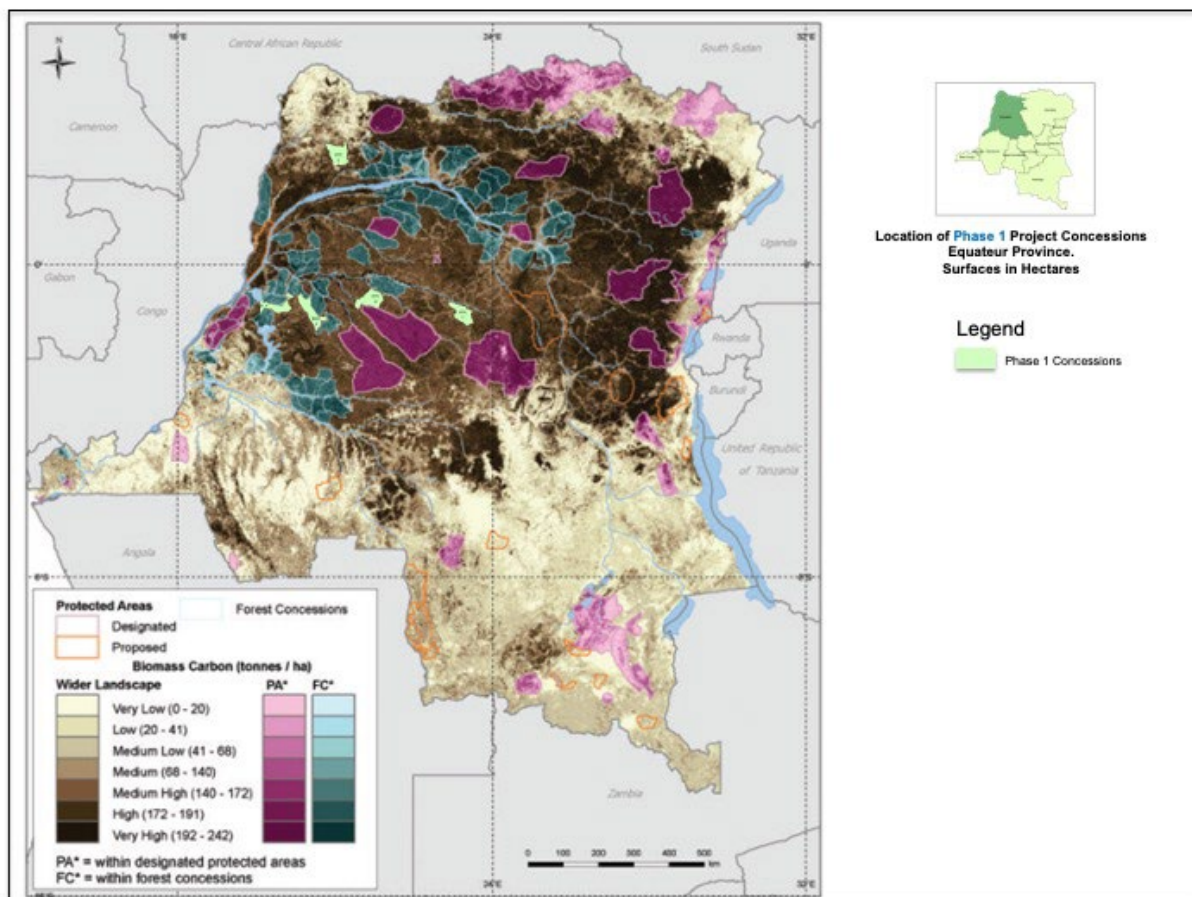
11. Appendix E. Land Cover Map



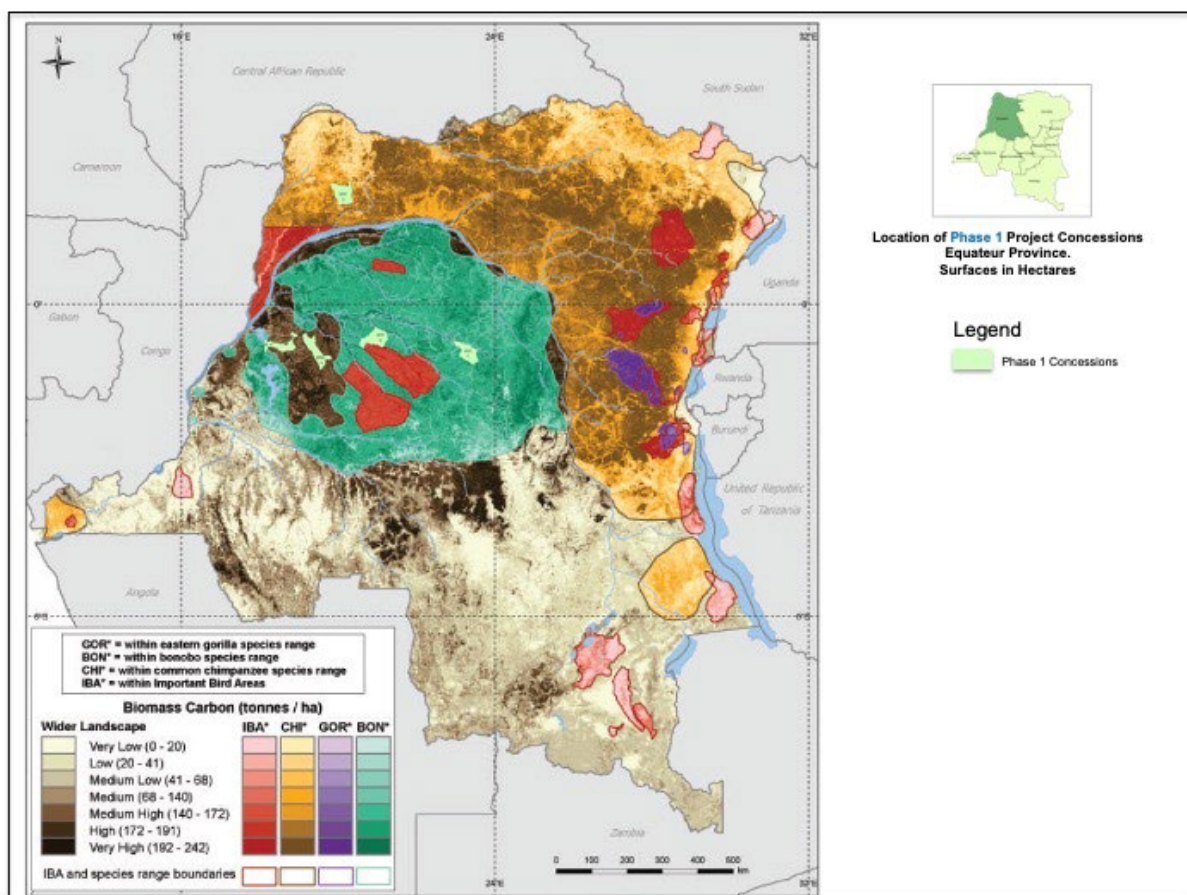
12. Appendix F. forest cover loss



13. Appendix G. protected areas and forest concessions



14. Appendix H. endangered Animals



15. Appendix I. Soil map

**Bodems van DR Congo,
Rwanda en Burundi**

**Les sols de la RD Congo,
du Rwanda et du Burundi**

Legende / Légende

Stad / Ville

— Rivier / Rivière

Meer / Lac

Bodemgroep / Groupe de sols

Acrisols (AC)

Andosols (AN)

Arenosols (AR)

Cambisols (CM)

Ferralsols (FR)

Fluvisols (FL)

Gleysols (GL)

Histosols (HS)

Nitisols (NT)

Leptosols (LP)

Lixisols (LX)

Phaeozems (PH)

Regosols (RG)

Solonchaks (SC)

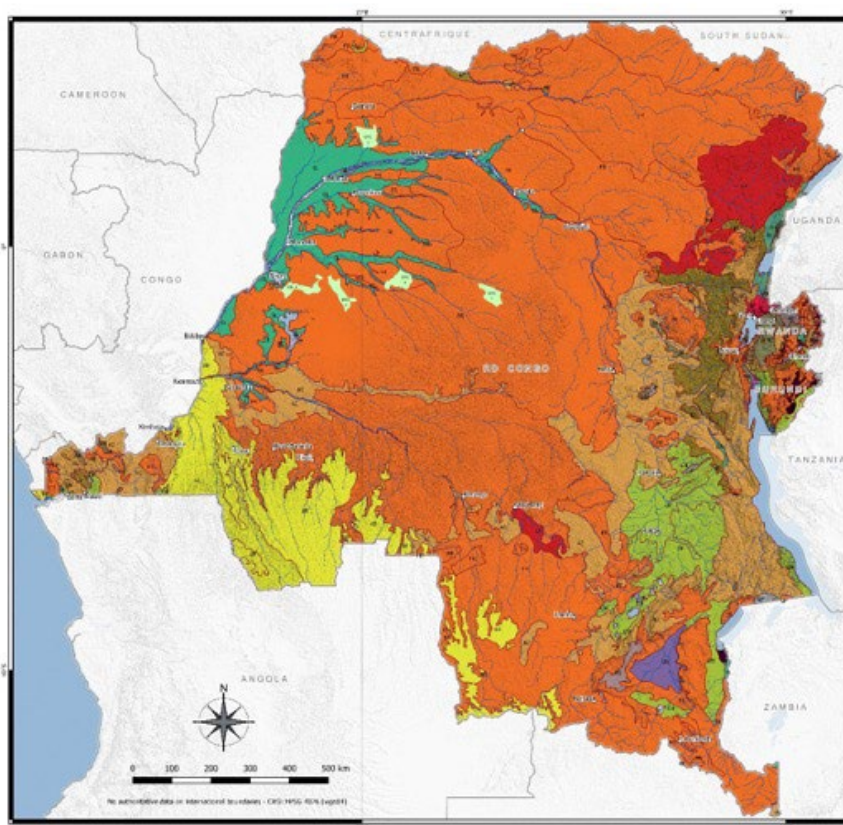
Vertisols (VR)

Umbrisols (UM)

Phase 1 Concessions

Map prepared by S. Stekelenik, O. Devito and J. Deckers
(2018)

Adapted from: Devito et al. 2013, Guidelines with legend
compiled for ICR (2013)



16. Appendix J. Road network

