



VCS VALIDATION REPORT

THE MAI Ndombe REDD+ Project

REPORT N°2012-9754

REVISION NO. 1

Project Title	The Mai Ndombe REDD+ Project
Version	v1.0
Report ID	Report N° 2012-9754 Revision 1

Report Title	Validation Report for The Mai Ndombe REDD+ Project
DNV Ref:	PRJC-390040-2012-CCS-USA
Client	Wildlife Works and ERA Ecosystems
Pages	109
Date of Issue	6 December 2012
Prepared By	DET NORSKE VERITAS (U.S.A.). INC.
Contact	DNV Climate Change Services AS 155 Grand Avenue, Suite 500 Oakland, CA 94612 Office Phone Number: +1 510 891 0461
Approved By	Weidong Yang
Work Carried Out By	Edwin Aalders, Pablo Reed
Technical review by:	Misheck Chomba Kapambwe

Summary:

DNV Climate Change Services AS (DNV) has performed a validation of the project activity “The Mai Ndombe REDD+ Project ” in the Democratic Republic of Congo to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. The validation was performed on the basis of VCSA requirements for the VCS project, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation was conducted by means of document review, follow-up interviews and site inspection, and the resolution of outstanding issues. The review of the project design documentation and the subsequent follow-up interviews and site inspection have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

The project activity is to leverage carbon finance to avoid mosaic conversion of tropical forests and therefore reduce greenhouse gas emissions. The project employs a Reduced Emissions from Deforestation and Degradation (REDD) project methodology to determine the magnitude of these emissions reductions. Through a combination of forest protection and sustainable development activities, this project is estimated to avoid the emission of 175.8 tonnes of CO₂e over the project lifetime that would have resulted from deforestation of approximately 50% of the project area over the next thirty years. The project has applied the VCS/CDM methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0.

In summary, it is DNV’s opinion that the project activity “The Mai Ndombe REDD+ Project ” as described in the VCS PD, dated 19 November 2012, meets all relevant VCSA requirements for the VCS project and correctly applies the VCS/CDM methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0. Hence, DNV recommends the registration of the project as a VCS project activity.

Table of Contents

1. INTRODUCTION	1
1.1 OBJECTIVE	1
1.2 SCOPE AND CRITERIA	1
1.3 LEVEL OF ASSURANCE	1
1.4 SUMMARY DESCRIPTION OF THE PROJECT	1
2 VALIDATION PROCESS	2
2.1 METHOD AND CRITERIA.....	2
2.2 DOCUMENT REVIEW	2
2.3 INTERVIEWS	5
2.4 SITE INSPECTIONS.....	8
2.5 RESOLUTION OF ANY MATERIAL DISCREPANCY.....	9
3 VALIDATION FINDINGS	9
3.1 PROJECT DESIGN.....	9
3.2 APPLICATION OF METHODOLOGY	14
3.3 ENVIRONMENTAL IMPACT	37
3.4 COMMENTS BY STAKEHOLDERS	37
4 VALIDATION CONCLUSION	38
1. PROJECT DETAILS.....	2
1.1 SUMMARY DESCRIPTION OF THE PROJECT	2
1.2 SECTORAL SCOPE AND PROJECT TYPE	2
1.3 PROJECT PROPONENT	2
1.4 OTHER ENTITIES INVOLVED IN THE PROJECT.....	2
1.5 PROJECT START DATE.....	3
1.6 PROJECT CREDITING PERIOD.....	3
1.7 PROJECT SCALE AND ESTIMATED GHG EMISSION REDUCTIONS OR REMOVALS.....	3
1.8 DESCRIPTION OF THE PROJECT ACTIVITY	3
1.9 PROJECT LOCATION	4
1.10 CONDITIONS PRIOR TO PROJECT INITIATION.....	4
1.11 COMPLIANCE WITH LAWS, STATUTES AND OTHER REGULATORY FRAMEWORKS.....	5
1.12 OWNERSHIP AND OTHER PROGRAMS.....	9
1.13 ADDITIONAL INFORMATION RELEVANT TO THE PROJECT.....	10
2 VCS METHODOLOGY.....	11
2.1 TITLE AND REFERENCE OF THE VCS METHODOLOGY APPLIED TO THE PROJECT ACTIVITY AND EXPLANATION OF METHODOLOGY CHOICES	11
2.2 JUSTIFICATION OF THE CHOICE OF THE METHODOLOGY AND WHY IT IS APPLICABLE TO THE PROJECT ACTIVITY.....	11

2.3	IDENTIFYING GHG SOURCES, SINKS AND RESERVOIRS FOR THE BASELINE SCENARIO AND FOR THE PROJECT	13
2.4	DESCRIPTION OF HOW THE BASELINE SCENARIO IS IDENTIFIED AND DESCRIPTION OF THE IDENTIFIED BASELINE SCENARIO	14
2.5	DESCRIPTION OF HOW THE EMISSIONS OF GHG BY SOURCE IN BASELINE SCENARIO ARE REDUCED BELOW THOSE THAT WOULD HAVE OCCURRED IN THE ABSENCE OF THE PROJECT ACTIVITY (ASSESSMENT AND DEMONSTRATION OF ADDITIONALITY).....	15
2.6	METHODOLOGY DEVIATION	19
3	QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	19
3.1	BASLINE EMISSIONS	19
3.2	PROJECT EMISSIONS	20
3.3	LEAKAGE	21
3.4	GHG EMISSION REDUCTIONS AND REMOVALS.....	21
4	MONITORING	22
4.1	DATA AND PARAMETERS AVAILABLE AT VALIDATION	22
4.2	DATA AND PARAMETERS MONITORED.....	22
4.3	DESCRIPTION OF THE MONITORING PLAN	23
5	ENVIRONMENTAL IMPACT	23
6	STAKEHOLDERS COMMENTS	24
APPENDIX A VCS VALIDATION PROTOCOL		

1. INTRODUCTION

Wildlife Works and ERA Ecosystems have commissioned DNV Climate Change Services AS (DNV) to perform a validation of the The Mai Ndombe REDD+ Project in the Democratic Republic of Congo (the project). This report summarizes the findings of the validation of the project, performed on the basis of VCSA criteria for the VCS project, as well as criteria given to provide for consistent project operations, monitoring and reporting. VCSA criteria refer to VCS program documents and policy announcements.

1.1 Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and compliance with relevant VCSA criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all VCS projects and is necessary to provide assurance to stakeholders of the quality of the project and its intended generation of the Verified Carbon Units (VCUs).

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the VCS project document (VCS PD)/1/. The VCS PD is reviewed against the criteria stated in the VCS Version 3.3 and the relevant documents and policy announcements made by the VCSA, including the VCS/CDM methodology "Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)", version 2.0.

The validation does not include project consulting. However, requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

1.3 Level of assurance

DNV provides reasonable assurance that the "The Mai Ndombe REDD+ Project " meets VCSA criteria. To ensure complete transparency, a validation protocol check list is included in Appendix A. The validation protocol check list addresses all of the criteria that must be met for the VCS project. Any clarification or corrective actions raised have been included in the validation protocol.

In addition, DNV applies materiality of 1 per cent in accordance with the requirements in VCS Standard Version 3.2./10/

1.4 Summary Description of the Project

The project is being developed with the aim to qualify as an REDD+project under both the Verified Carbon Standard and the Climate, Community and Biodiversity Standard. In order to do so the project applies the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0 over a concession that holds 3.5 million cubic meters of merchantable hardwood eligible for commercial logging operations. The project aims to address the halting of logging and the other leading drivers of deforestation - subsistence agricultural practices and aggressive fuelwood/charcoal use. In order to do so the project activities will consist largely of participatory community-based conservation initiatives that will reduce local incentives toward unsustainable land use, with emphasis on agricultural improvements.

The Mai Ndombe REDD+ Project area, located in western DRC, is an ecologically rich and diverse area previously zoned for commercial timber extraction. It is home to Chimpanzees, Bonobos and forest elephants, and includes some of the most important wetlands in the world. It is also home to some 50,000 people, most of whom live on the shores of Lake Mai Ndombe, and along the main roadway leading from the coastal city of Selenge towards the northwest project area boundary.

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. Two timber concessions extending along the western shore of Lake Mai Ndombe, were among those suspended for review. In February 2010, ERA submitted a formal request to the DRC government to manage these concessions for the purpose of protecting the area from destructive logging practices, legal and illegal - using carbon revenues to promote sustainable development. In March 2011, a Memorandum of Understanding was signed between the Ministry of Environment, Conservation of Nature, and Tourism (MECNT) and ERA, in which any carbon rights resulting from the development of the project would be assigned to ERA. In August 2011, the two concession contracts were reassigned to ERA via a Forest Conservation Contract.

Project Proponents (Parties):

Title of project activity:	The Mai Ndombe REDD+ Project
Baseline and monitoring methodology	Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) Version 2.0
Location of the project activity	The Mai Ndombe REDD+ Project area is situated in the Inongo Territory in the Mai-Ndombe Lake District in the Bandundu Province. The project is located on the West shore (to the East) of Lake Mai Ndombe, between the lake itself and the Bolipa Mpe (Boruampe) River to the West, and between the Lokeke River to the South and the Bolog'o Lule River to the North.
Project's crediting period:	14 March 2011 to 13 March 2041
Project Type	Large Project
Average Annual VCUs	5 671 613 VCUs

2 VALIDATION PROCESS

2.1 Method and Criteria

The validation consisted of the following three phases:

- A desk review of the project documents.
- Follow-up interviews with project stakeholders and site inspection where necessary.
- The resolution of outstanding issues and the issuance of the validation report and opinion.

The following sections outline each step in more detail.

2.2 Document Review

The following tables list the documentation that was reviewed during the validation.

2.2.1 Documentation provided by the project participants

- /1/ Wildlife Works Department of Carbon Development: VCS PD for project activity “The Mai Ndombe REDD+ Project ” in the Democratic Republic of Congo, Version 1.59 dated 12 September 2012 and version 1.63 dated 19 November 2012.
- /2/ Wildlife Works Carbon: Lac Mai Ndombe REDD+Monitoring Plan v1.7, 10 September 2012
- /3/ Wildlife Works Carbon: Image Classification Protocol
- /4/ Wildlife Works Carbon: Standard Operating Procedure (SOP) for Non-Destructive Field Measurements For Calculation of Biomass, Version 1.9, 18 July 2012
- /5/ Wildlife Works Carbon: Standard Operating Procedure (SOP) for Biomass Plot Sampling, Version 2.5, 10 September 2012
- /6/ Wildlife Works Carbon: Standard Operating Procedure (SOP) Field Protocol for Core Soil Sampling, version 1.5, 23 may 2012
- /7/ Wildlife Works Carbon: Standard Operating Procedure (SOP) Quality Control Procedure Lac Mai Ndombe REDD+ Project, Version 1.6, 14 November 2012
- /8/ Wildlife Works Carbon: Standard Operating Procedure (SOP) Laboratory Procedures & Calculations For Determining Tree Biomass, Version 1.0, 29 June 2012
- /9/ Wildlife Works Carbon: Standard Operating Procedure (SOP) Non-Destructive Field Measurements For Calculation of Biomass, Version 1.9, 18 July 2012

2.2.2 Standards, methodologies, and other guidance by the VCSA

- /10/ VCSA: VCS Standard, version 3.2.
- /11/ VCSA: VCS Standard, version 3.3.
- /12/ VCSA: VCS Programme Guideline Version 3.3
- /13/ VCSA: VCS AFOLU Requirements version 3.2
- /14/ VCSA: VCS Non-Permanence Risk Tool version 3.1
- /15/ VCSA: VCS Program Definitions version 3.3
- /16/ VCSA: Methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0.
- /17/ VCSA: Additionality Tool
- /18/ VCSA: VCS Guidance - Validation and Verification Manual Version 3.0, 4 October 2012

2.2.3 Documentation used by DNV to validate / cross-check the information provided by the project participants

Annexes to the Project Document

- /19/ Carbon Rights Agreement between the Government of the Democratic Republic of Congo ERA signed on the 14th of March 2011 –*“Avenant N# 01 Au Protocole d'Entente Signee le 14 mars 2011 entre la Republique Democratique du Congo et I Societe Ecosystem Restoration Associates. ”*
- /20/ Forestry Preservation Concession Terms of Reference, 4 March 2011 *“Cahier de charge d'un Contrat de Concession Forestiere de Conservation”*
- /21/ Forest Conservation Contract, 30th of July 2011, *“Contrat de Concession Forestiere de Conservation”*
- /22/ Wildlife Works Carbon : Annex C - Tarif de cubage 1.3.xlsx
- /23/ Ministry of Environment, Conservation of Nature and Tourism:: Letter to SOFORAMA accepting concession exchange
- /24/ Annex E - Reference Area Logging Concession Bas-fleuve
- /25/ EcoPartners LLC and Wildlife Works: Annex F- Internal Audit Report “Lac Mai Ndombe Site Visit”
- /26/ Ministry of Environment, Conservation of Nature and Tourism:: - Suspension of Bimpe Agro Concessions
- /27/ ERA Congo: Request to Ministry of Environment, Conservation of Nature and Tourism: requesting the rights of the Concession of the Lac Mai Ndombe
- /28/ Assemblée Provinciale du Bandundu: Petition to the Ministry of Environment, Conservation of Nature and Tourism:
- /29/ Agreement for the Management Rights of the Concession of Lac Mai Ndombe, 14 march 2011, “Protocol d'entente” du 14 mars 2011
- /30/ Wildlife Works Carbon: Annex N - NER Worksheet 2.13.xlsm
- /31/ Annex O - Data and Parameters Available at Validation v1.4.docx
- /32/ Annex P - Data and Parameters Monitored.docx
- /33/ Annex U - WWC VCS Additionality Tool VT0001.docx
- /34/ Annex V - Non-Permanence Risk Worksheet v1.0.xlsx
- /35/ Annex W - DRC Political Risk.xlsx

Annexes to the Monitoring Report

- /36/ Wildlife Works Carbon: Annex C - Data and Parameters Monitored v1.1
- /37/ Wildlife Works Carbon: Annex D - Development of Lac Mai Ndombe Allometry Version 2.43
- /38/ Wildlife Works Carbon: Annex E - Allometry Sampling Plot List
- /39/ Wildlife Works Carbon: Annex J - Lac Mai Ndombe PAA Inventory v2.19.xlsm

- /40/ Wildlife Works Carbon: Annex L - Lac Mai Nombe Proxy Inventory v3.0.xlsm
- /41/ Wildlife Works Carbon: Annex M - Map of Project Area
- /42/ Wildlife Works Carbon: Annex N - Allometry Sampling Map
- /43/ Wildlife Works Carbon: Annex P - Soil Analysis Results.xlsx

Other supportive documents

/44/	Draft CLD Capacity Building Module_English.pdf
/45/	Ministry of Environment, Conservation of Nature and Tourism: Forestry Code “Loi n°011/2002, August 29, 2002”
/46/	Ministry of Environment, Conservation of Nature and Tourism 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
/47/	Ministry of Environment, Conservation of Nature and Tourism: Ministerial Order n°004/CAB/MIN/ECN-T/012 February 15, 2012, establishing an approval procedure for REDD+ projects.
/48/	Ministry of Environment, Conservation of Nature and Tourism: Inter-ministerial Order n°006/CAB/MIN/ECN-EF/2007 and n°004/CAB/MIN/FINANCE S/2007 establishes the area tax and amount to be paid by forestry concession holders yearly.
/49/	Davidson, E., and Ackerman, I. 1993. Changes in soil carbon inventories following cultivation of previously untilled soils. Biogeochemistry, 20(3), 161-193.
/50/	Lebrun and Gilbert, 1954: A ecological classification of the forest of Congo (Une classification écologique des forêts du Congo). Publications INEAC, série sci 63, 1-89
/51/	Mayaux, et al 2000: Central Africa forest cover revisited: a multisatellite analysis. Remote Sensing of Environment, 71, 183-96
/52/	Devred, R., 1958: The vegetation of Belgium Congo and Rwanda (La végétation du Congo Belge et du Ruanda-Urundi), Bulletin de la Société Royale Botanique de Belgique, (65), 409-468

2.3 Interviews

On 23 – 30 September 2012 DNV visited the different project areas (Reference Area, Project Area) and Kinshasa and performed interviews with project stakeholders.

	Date	Name	Organization	Topic
/53/	24-Sept-2012	Emmanuel Kipola – <i>Coordinator Urban and Environment</i>	Ministry of Environment, Conservation of Nature and	• Concession Rights, • Forestry Legislation, • Logging History and

		<i>Boma</i>	Tourism	Logging Practices
/54/	24 to 30 Sept-2012	John Block	ERA – Director of Operations	•
/55/	24 to 30 Sept-2012	Jennifer Holland	ERA – Operations Manager	• Project Design • Environmental & Social aspects of projects
/56/	24 to 30 Sept-2012	Jeremy Freund	Wildlife Works Carbon (WWC) – Climate Component Lead	• Carbon Inventory • Carbon Module • Project Design
/57/	24 to 30 Sept-2012	Jean-Robert Bwangoy-Bankanza	ERA – Project Director	• Carbon Inventory • Project Design • Forestry Practices • Local circumstances
/58/	24 to 30 Sept-2012	Anne Marie Bwangoy-Bankanza	ERA – Translator Operations Assistant	• Operations • Stakeholders
/59/	24 to 30 Sept-2012	Rob Friberg	ERA – Coordinator for CCB PD Development	• Project Design • Environmental & Social aspects of projects
/60/	24 to 30 Sept-2012	Henri Bokote	ERA – Managing Director	• Operations • Project Design
/61/	24 to 30 Sept-2012	Dodo Kasonge	ERA – Technical Support / GIS	• Mapping & GIS
/62/	24 to 30 Sept-2012	Anatole Bokolo	ERA – Technical Support / GIS	• Mapping & GIS
/63/	24 to 30 Sept-2012	Donat Koko	ERA – Logistics and Accounting	• Operations
/64/	24 to 30 Sept-2012	Jose Ikoko	ERA - Human Resources and Community Relations	• Social • Operations
/65/	24 to 30 Sept-2012	Nestor Ndotdo	ERA - EngineerForestry	• Carbon & Biosmass Inventory
/66/	24 to 30 Sept-2012	Eddy Mangani	ERA – Forestry Engineer	• Carbon & Biosmass Inventory

/67/	24 to 30 Sept-2012	Matthieu Bokamba	ERA – Biodiversity Monitoring	• Carbon & Biosmass Inventory
/68/	24 to 30 Sept-2012	Thomas Bolingo	ERA – Biomass and Biodiversity Montoring	• Carbon & Biosmass Inventory
/69/	24 to 30 Sept-2012	Djems Ikeli	ERA – Forest Engineer	• Carbon & Biosmass Inventory
/70/	24 to 30 Sept-2012	Marylin Elembe	ERA – Animateur	• Social and Environmental • Capacity building
/71/	24 to 30 Sept-2012	Jerome Lolonga	ERA – Animateur	• Social and Environmental • Capacity building
/72/	24 to 30 Sept-2012	Jacques Bongongo	ERA – Animateur	• Social and Environmental • Capacity building
/73/	24 to 30 Sept-2012	Gratien Mutiar	ERA – Animateur	• Social and Environmental • Capacity building
/74/	24 to 30 Sept-2012	Shako Okoka	ERA – Animateur	• Social and Environmental • Capacity building
/75/	24 to 30 Sept-2012	Gauthier Kimpese	ERA – Animateur	• Social and Environmental • Capacity building
/76/	24 to 30 Sept-2012	Ghuylain Nshoko	ERA – Animateur	• Social and Environmental • Capacity building
/77/	24 to 30 Sept-2012	Evariste Biembe	ERA – Animateur	• Social and Environmental • Capacity building
/78/	30-Sept-2012	Djengo Bosulu	Director of Forest Service, Ministry of Environment, Conservation of Nature and Tourism	• Concession Rights, • Forestry Legislation, • Logging History and Logging Practices

In addition to the above mentioned people, the audit team conducted interviews with local village chiefs, communities' local development committees, local project animateurs, and community members in general within the following communities, which fall geographically either within or directly adjacent to the project activity zone:

- Mpili
- Nselenge
 - o Local Animateurs
 - Mputu Lobali
 - Mputu Mwilondo
 - Lombe Bakongo
- Ksenge
- Mbale
- Ikira (Pygmy Village)

2.4 Site Inspections

During the site visit the team has visited the different areas that form part of the Project and/or that are required by the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0 /16/. In order to obtain an understanding of the impacts of deforestation following commercial logging, and continuous agricultural practices the assessment team visited the reference area, where by following a drive through, the team was able to assess the different carbon stocks both of protected and non-protected areas.

As part of the project area the team visited randomly old sample plots that were used to determine the carbon stock within the project area. In each plot the assessment team observed the PP inventory team implementing the Standard Operating Procedure – Forest Inventory /4//5//6/. The plots were consequently re-measured either completely or partly and findings compared with the original inventory date of the respective plots. The following plots were visited by the assessment team:

Plot number	Comments		Plot Number	Comments
136E	Plot situated within area which has been exploited prior to the PP obtaining the concession		4F	Plot situated within swamp forest which has not yet been subject to exploitation prior to the PP obtaining the concession
149E	Plot situated within area which has been exploited prior to the PP obtaining the concession		13H	Plot situated within non-swamp forest which has not yet been subject to exploitation prior to the PP obtaining the concession
15Mar	Plot situated within swamp forest which has not yet been subject to exploitation prior to the PP obtaining the concession		17H	Plot situated within non-swamp forest which has not yet been subject to exploitation prior to the PP obtaining the concession

The objective of the field assessment were to assess the project's ability to re-identify both plots and trees originally subjected to the inventory whose data were entered in the carbon modelling and to assess the quality of the work performed within the field during the data collection. In addition to the site visit whereby the assessment team assessed the performance of the inventory practices, the team performed an office audit in which it examined the data processing, quality controls and carbon modelling, to determine the correctness of the assumptions that the PD provided on the project eligibility criteria in relation to Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0, as well as the projects ability to implement the project design over the duration of the project crediting period.

During the various site visits both in the Reference Area and Project Area the assessment team performed interviews with the aim to obtain information about the logging and agricultural practices within the areas/53/ to /78/.

2.5 Resolution of Any Material Discrepancy

The objective of this phase of the validation was to resolve any outstanding issues that needed be clarified prior to DNV's positive conclusion on the project design. In order to ensure transparency, a validation protocol was customized for the project. The protocol shows in a transparent manner the criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organizes, details and clarifies the requirements a VCS project is expected to meet.
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The completed validation protocol check list for the project "The Mai Ndombe REDD+ Project " is enclosed in Appendix A to this report.

A corrective action request (CAR) is issued if one of the following occurs:

- The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions.
- The VCS requirements have not been met.
- There is a risk that emission reductions cannot be monitored or calculated.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A forward action request (FAR) is raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs do not relate to the VCS requirements for registration.

3 VALIDATION FINDINGS

3.1 Project Design

3.1.1 Project Proponent

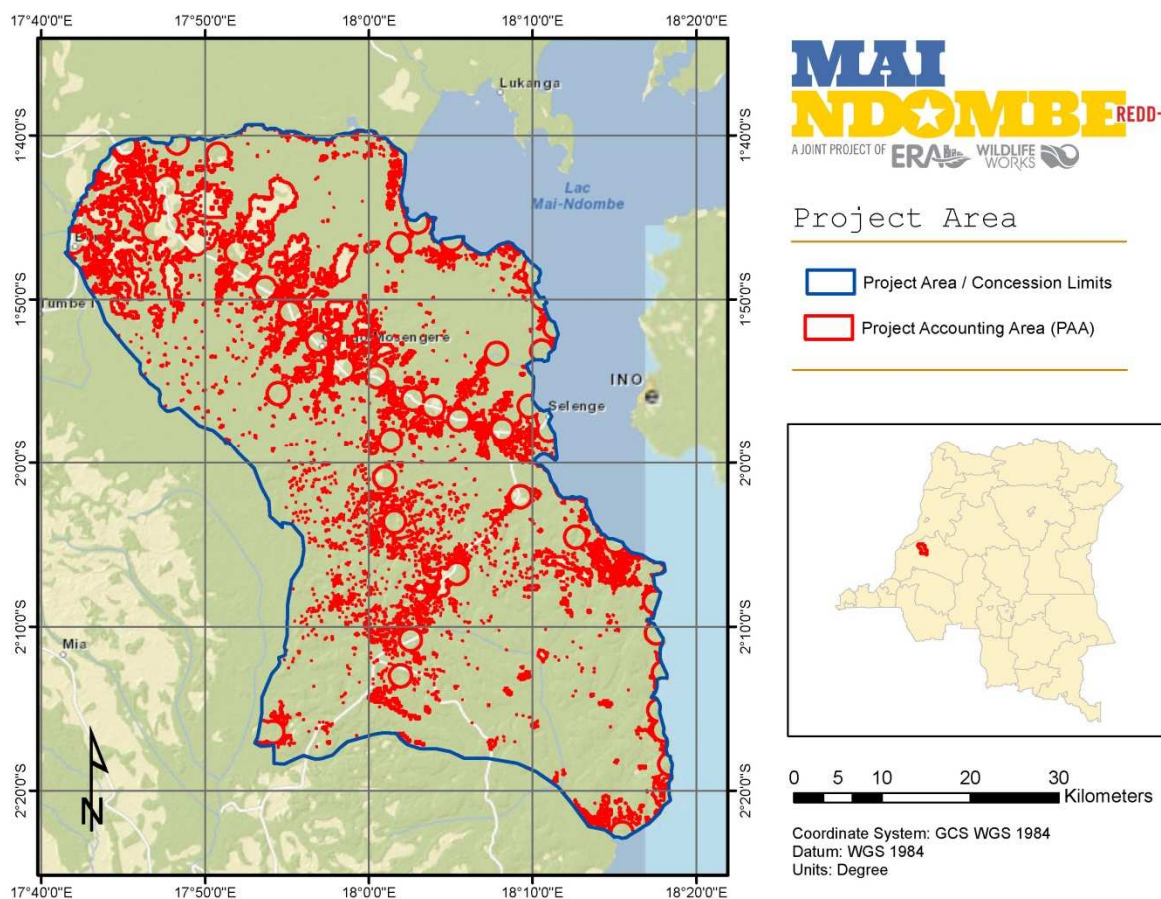
The project is managed by ERA Ecosystems (Congo) and Wildlife Works. ERA and Wildlife Works have been working in the Democratic Republic of the Congo (DRC) since 2009, drawing on long-standing relationships with Congolese forest management professionals and forest-dependent communities to

establish the first REDD+ Conservation Contract in country. The organization has been based predominantly on local Congolese staff which are either from within the region or worked within the region for one of the local logging companies and as such have a good understanding of the local dynamics and forest ecosystems.

3.1.2 Project Activity and Eligibility of the Project

The project is in line with the methodology, a REDD+ project classed as P1 based on the fact that the concession was originally part of a commercial logging concession held by an international logging company SOFORAMA. Although the area was not officially held as a concession at the time that the concession rights were allocated by the project, this was only because of the moratorium that the government had announced in 2002. At the time of the allocation both the project and SOFORAMA applied for the concession rights meaning that if the project had not been awarded the concession, the concession would have been allocated to a commercial logging company.

The Mai Ndombe REDD+ Project area is situated in the Inongo Territory in the Mai-Ndombe Lake District in the Bandundu Province. The project is located on the West shore (to the East) of Lake Mai Ndombe, between the lake itself and the Bolipa Mpe (Boruampe) River to the West, and between the Lokeke River to the South and the Bolog'o Lule River to the North. The area covers an area of total **299,640 ha**.



Date	Project Activity or Event
------	---------------------------

March 14, 2011	Project start date and project crediting period start date.
March 14, 2011	Carbon Rights Agreement signed
August 2011	Forest Concession Contract signed
August 2, 2011	Opening Ceremonies in DRC
October 2011	Beginning of school construction
February 2012	CLD Building
March-April 2012	Participatory Rural Appraisal
September 2012	Beginning of Agroforestry Demonstration Plot construction
September 15, 2012	First verification (monitoring) event
September 15, 2013	Second verification event

Table 1: Project timeline including project activities and first monitoring milestones.

3.1.3 Project Scale and Crediting Period

The project is in line with the VCS Standard version 3.2 /10/ classified as a mega project (>1 000 000 VCUs per year /10/) based on the expected annual VCUs issuance of **5 671 613 VCUs** per year. However since the assessment the VCS has released an updated version of the VCS standard version 3.3 /11/ which changes also the thresholds of the projects meaning that the project is now classified as a large project (> 300 000 VCUs per year).

The project has elected for a 30 year crediting period starting on the 14th of March 2011 and ending on 13th of March 2041. This is in line with the VCS Standard on crediting period where AFOLU projects have a minimum crediting period of 20 year and a maximum crediting period of 100 years. /10/ In line with the methodology /16/ the baseline of the project is re-evaluated at least once every 10 years.

3.1.4 Project compliance with applicable laws, statutes and other regulatory frameworks

Following the change of government in the late 90's in the Democratic Republic of Congo the forest sector has seen a number of significant changes in relation to the allocation and management of logging concessions within the country. In 2002 a general moratorium was implemented on the issuance of new concessions and since this moratorium a number of new legislations have come out that control commercial logging and REDD projects:

- Forestry Code “Loi n°11/2002, 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° 24/CAB/MIN/ECN-T/15/JEB/08, August 7, 2008 establishing a procedure for public enquiry prior to the grant of Forests Concessions.

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

During this moratorium a number of commercial logging permits held by logging companies were cancelled and local communities were able to apply for local licences to facilitate the logging of forest for the village needs. However there is a wide spread concern that commercial logging companies use this system to continue their commercial logging practices. At the same time although the moratorium is still in place the country has seen the issues of a number of Management Right Agreements which give logging companies the right to log commercially within the respective concessions.

The management of the logging concession (i.e. project area) falls under the “Code Forestier”/45/. The right to attribute forest concessions belongs to the Ministry of the Environment, Conservation of Nature and Tourism. 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.

However, since the project proponent indicated its desire to the Ministry of Environment to manage the logging concession as a REDD project, it was required to sign a Carbon Right Agreement /19/ first in which the project proponent commits itself to paying carbon levies to the Government of the Democratic Republic of Congo and the land fee as well as its obligations to finalise a “Cahier de Charge” /20/ with the local community before it was able to be granted the Concession Contract /21/ in the form of a conservation concession.

In the “Cahier de Charge” the concession holder agrees with the communities within the concession on a development plan that would facilitate the enhancement of the local infrastructure as well as livelihood of the communities. Under the “Cahier de Charge” /20/ the project has engaged and committed itself among other things to build a number of schools within the area and provide medical support, through a permanent and mobile medical clinic.

3.1.4.1 Other Regulatory Frameworks

Labor Laws:

- *Employment law “Loi n°15/2002” 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/C ABMIN/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.*
- *Health benefits Decree-Law 67/310 August 9, 1965 states that companies must cover the health care needs of its employees.*

3.1.5 Ownership and other programs

Based on the Carbon Rights Agreement signed on 14th of March 2011/19//21/, Ecosystem Restoration Associates (ERA) holds exclusive rights to sell carbon credits for carbon generated by the project area, contract is effective for 25 years and applies to the 299,640-ha project area. After this period, the contract can be renewed on the terms contained in Article 8 of the Concession Contract /21/. The 25-year contract will be renewed to complete the 30-year project crediting period. During the assessment DNV made various assessments to determine the likelihood that the concession /19//20//21//27//29//34//35//53//78/ would obtain its extension and concluded on the basis of the current assurance that are in place and provision made by the management it is likely that at the time of renewal the agreement will be renewed by both parties ERA Congo/Wildlife Works and the Ministry of Environment, Conservation of Nature and Tourism.

3.1.5.1 Emissions Trading Programs and Other Binding Limits

3.1.5.2 Participation under Other GHG Programs

The Validation Team found no evidence that the project has applied or intend to apply for another GHG Programme nor does the project fall under a binding Emission Trading Scheme. This was further corroborated in discussions with local environmental authorities /78/.

3.1.5.3 Other Forms of Environmental Credit

At the time of the audit the project was also validated under the Climate, Community & Biodiversity (CCB) Standards (Second Edition, Gold Level).

3.1.5.4 Projects Rejected by Other GHG Programs

This project has neither applied for nor been rejected from any other GHG programs /78/.

3.1.6 Additional information relevant to the project

3.1.6.1 Commercially Sensitive Information

Some annexes contain commercially sensitive information. All annexes that have been classified as commercial sensitive have been assessed by DNV in their original form and assessed if they could be classified as confidential. Where necessary the DNV requested the project team to make part or the whole annex publically available in order to provide transparent information to the stakeholders or were this was required under the VCS.

DNV confirms that all information that is classified as confidential was done in line with the VCS requirements and DNV was able as part of its assessment to examine all supporting information without any limitations.

3.2 Application of Methodology

3.2.1 Title and Reference

The project has applied VCS methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0 /16/.

3.2.2 Applicability

In line with the methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0 /16/ the project applicability conditions are:

1. The methodology is applicable when the project is related to avoided deforestation where it is assumed that the degradation and deforestation result in land-use conversion to non-forest and as such the baseline scenario would be non-forest
2. Land in all project accounting areas has been qualified as forest as defined by FAO 2010 or that of the definition of forest set by the residing national authority (DNA) for the project country of a minimum of 10 years prior to the project start date
3. In the case of baseline types that are type U, unplanned deforestation, deforestation exists at some point within 120 metres of the perimeter of the project accounting areas such that without the implementation of the project activity the project accounting area would immediately be threatened by the agenda of deforestation as of the project start date
4. In the case of baseline type U1 at least 25% of the project boundary is within 120 meters of deforestation
5. In case of baseline type U2, at least 25% of the project boundary is within 120 meters of deforestation and at least 25% of the reference area is adjacent to the project area.
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
7. The project accounting area(s) shall not contain organic or peat soil
8. For each baseline scenario, a reference area can be delineated for each baseline scenario that meets the requirements of section 6.7.1 of this methodology including the minimum size requirement
9. As of the project start date, historic imagery of the reference area exists with sufficient coverage to meet the requirement of section 6.7.4. of this methodology
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 this methodology
11. The project proponent has access to the activity-shifting leakage area(s) and proxy area(s) to implement monitoring (see section 8.3.2.1 and 6.4), or has access to monitoring data from these areas for every monitoring event
12. If logging is included in the baseline scenario and a market-effect leakage is required per section 8.3 of the methodology, then the project proponent has access to the market-effect leakage area (see section 8.3.3. of the methodology)
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

Comments on bullet point 1) above: Prior to the project the area was under a concession right owned by one of the logging companies (baseline type P1 under the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0) and based on the historical imagery as well as the findings from the reference areas it can be concluded that the commercially logged areas will gradually be deforested by the populations within the forest area and those that gain access due to the opening up of the forest by the logging companies.

Comments on bullet point 2) above: Images of the project areas acquired in 2000 and 2001 show that the project area is considered to meet the forest definition of areas greater than 0.5 ha, trees higher than 5 meters and a canopy cover greater than 10% as defined by the FAO definition.

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., 2000/51/; Devred 1958/52/), are considered non-forested, and are not included in the Project Accounting area for this project.

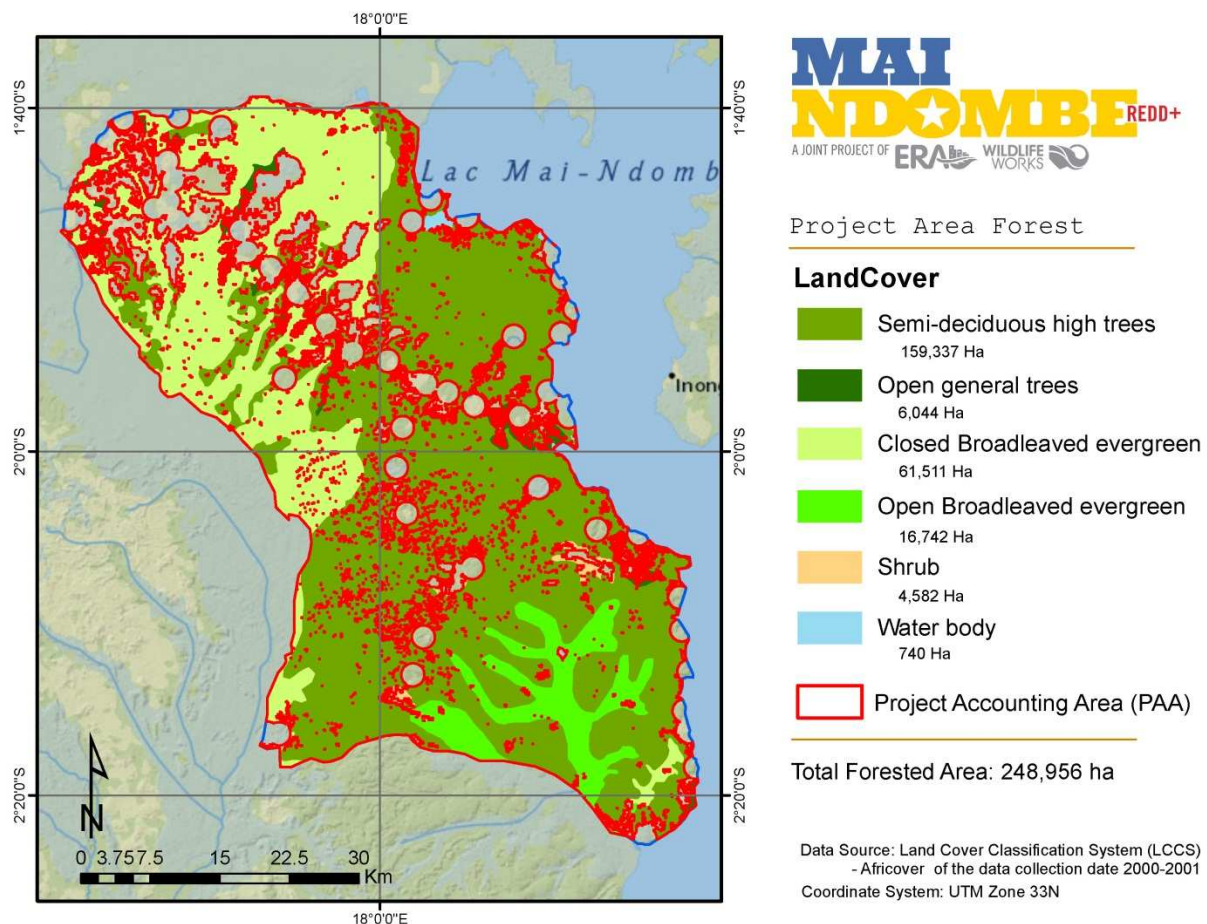


Figure 1: Map showing that the PAA meets the definition of forest in 2001 (at least 10 years prior to the Project Start Date).

Comments on bullet point 3) above: On the basis that the project area is subject to planned deforestation (P1) this condition is not applicable for this project

Comments on bullet point 4) above: On the basis that the project area is subject to planned deforestation (P1) this condition is not applicable for this project

Comments on bullet point 5) above: On the basis that the project area is subject to planned deforestation (P1) this condition is not applicable for this project

Comments on bullet point 6) above: Based on the fact that the project area was available to become a logging concession for which SOFORMA (Société forestière du Mayombe) held a licence /23/. No other Foreign agents can be identified as agents of deforestation in the project area. In the event that SOFORMA did not regain the concession after the moratorium on concessions was lifted by the *Ministry of Environment, Conservation of Nature and Tourism.*, other commercial logging companies would have taken the place of SOFORMA. Secondary agents have been correctly identified as the local villagers, living in close proximity to the project area, who convert degraded forest into agricultural land.

Comments on bullet point 7) above: The project has correctly identified two soil types Xanthic Ferrasols and Eutric Gleysols which are not classed as organic and/or peat soils using the FAO-UNESCO World Soil Map, Feb, 1998

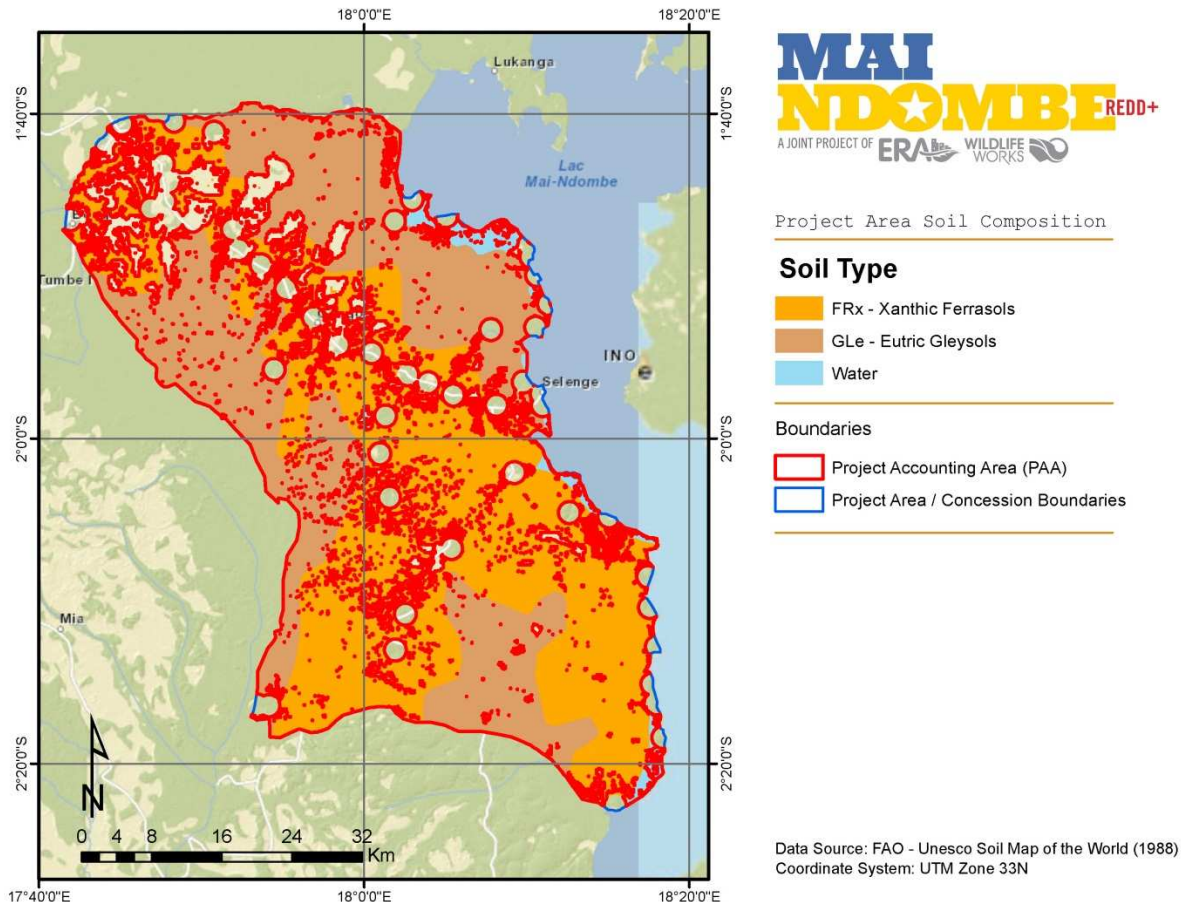


Figure 2: Map of soils in the Project Accounting Area indicating lack of Peat soil (Histosols).

Comments on bullet point 8) above: The PP has defined for each project accounting area an appropriate reference areas which are situated away from the project area. Not only did the reference area hold similar foresty types, the area was also under the same concession holder SOFORAMA and a such the overall management of the area and the logging activities would expect to have occurred in a similar manner. In addition, there are considerable similarities between the social economic indicators in the reference area and the project area and this leads to the conclusion that there would be similar secondary deforestation rates between the two areas.

Comments on bullet point 9) above: The project has demonstrated that there is an 98.99% double coverage rate of the imagery that is used for the assessment of the area, using images that have a 30 m resolution (Landsat), and were spatially registered to the same coordination system (WGS 1984 UTM Zone 33N).

Comments on bullet point 10) above: The basis of the project is that by obtaining the logging concession and converting this into a conservation concession, the project is able to halt the commercial logging within the area. Due to the fact that no new roads are being constructed as part of the logging operations, the project will be able to control and reduce the deforestation through secondary agents. A 2.5 km buffer zone around villages is applied by the project to allow traditional and improved agricultural practices to be implemented by the villages. These areas are excluded from the project area and its boundaries are monitored through forest rangers.

Comments on bullet point 11) above: The project proponent has full access to the project, reference and proxy area. There is no activity leakage identified on the basis that the logging company SOFORAMA is not able to obtain new concession due to the fact that its overall logging concession holdings within the Democratic Republic of Congo is exceeding the legal maximum limit that a single company can hold in concession areas. DNV raised a FAR (*FAR 1*) to monitor future development in relation to the leakage assumption.

Comments on bullet point 12) above: There is no activity leakage identified on the basis that the logging company SOFORAMA is not able to obtain new concession due to the fact that its overall logging concession holdings within the Democratic Republic of Congo is exceeding the legal maximum limit that a single company can hold in concession areas. DNV raised a FAR (*FAR 1*) to monitor future development in relation to the leakage assumption.

Comments on bullet point 13) above: On the basis that the project is located within a tropical ecosystem, the project has elected to apply the default value (0.2) /49/ in order to determine the carbon decay in soil.

DNV confirms that the project meets all the applicability requirements of the methodology.

3.2.3 Project Boundary

The project is applying the following project boundary

Pool	Sources	Inclusion	Justification
CO ₂ (Carbon Dioxide)	Flux in carbon pools	Yes	Major pool considered in the project scenario
CH ₄ (Methane)	Burning of biomass	No	Conservatively excluded
N ₂ O (Nitrous Oxide)	Burning of biomass	No	Conservatively excluded

Table 2: Project Greenhouse Gases Considered

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

Table 3: Selected Carbon Pools

In addition to the above carbon pools the project applies the following minimum diameters for the commercial tree species within the project area.

Species	Minimum Diameter (cm)	Species	Minimum Diameter (cm)
Azelia	60	Guarea spp. (cedrata, laurentii, thompsonii, et al.)	60
Albizia feruginea	50	Guibourtia demeusei	80
Amphimas sp	80	Khaya anthoteka	80
Aningeria robusta	80	Lova trichilioides	80
Anthrocaryon nananii	80	Mammea africana	60
Antiaris toxicaria	80	Miletia laurentii	60
Autranella congolensis	80	Milicia excelsa	80
Baillonella toxisperma	80	Morus mesozygia	60
Brachystegia laurentii	80	Nauclea diderrichi	80
Canarium schweinfurthii	80	Newtonia leucocarpa	60
Ceiba pentandra	80	Ongokea gore	60
Celtis sp	60	Oxystigma oxyphyllum	80
Copaifera milbraedii	80	Petersianthus macrocarpus	80
Daniella pinaertii	80	Piptadeniastrum africanum	80
Diospyros spp. (crassiflora, et al.)	80	Pterocarpus castelsii (soyauxii)	80
Entandrophragma angolense	80	Pychnanthus angolensis	80
Entandrophragma cylindricum	80	Schorodophleus zenkeri	80

Entandrophragma utile	80	Staudtia stipitata	80
Entandrophragma candollei	80	Swartzia fistuloides	80
Erythropheum suaveolens	80	Terminalia superba	80
Gambeya lacourtiana	80	Tieghemella africana	80
Gilbertiodendron dewevrei	80	Tieghemella hetkelii	80
Gossweilerodendron balsamiferum	80		

Table 4: Justification for inclusion of various carbon pools. (Tarif de Cubage 1.3.) /22/

DNV considers the selected project boundaries to be conservative and appropriate to the project activity.

3.2.4 Baseline Scenario

In line with the methodology Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) Version 2.0 /16/, the project proponent has identified the different agents for deforestation, which can be classified into two groups.

Agent of Deforestation	Associated Driver	Constraints to agent mobility
SOFORMA	Commercial Logging Company	Primary agent mobility is assumed to be 500-3000km, due to mechanized transport and a vast infrastructure system, as well as the capacity to harness natural infrastructure systems (rivers).
Farmers	Subsistence and small-scale agriculture	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)

The primary driver is the logging company who, after obtaining a legal concession license, is able to open up the forest to facilitate the extraction of the commercial timbers due to the increased road network and enhanced motorised traffic. The secondary agents (local communities/farmers) are able to expand their own penetration range within the area. New settlements are consequently established further way from the traditional access routes (e.g., rivers) into the forest area.

Since the project area was an eligible logging concession that was logged and could be logged again after the logging moratorium was lifted by the government, the baseline falls under the VCS definition Avoided Planned Deforestation/Degradation and as it entails commercial logging, the methodology defines that the baseline type is P1 (See Figure 1 below).

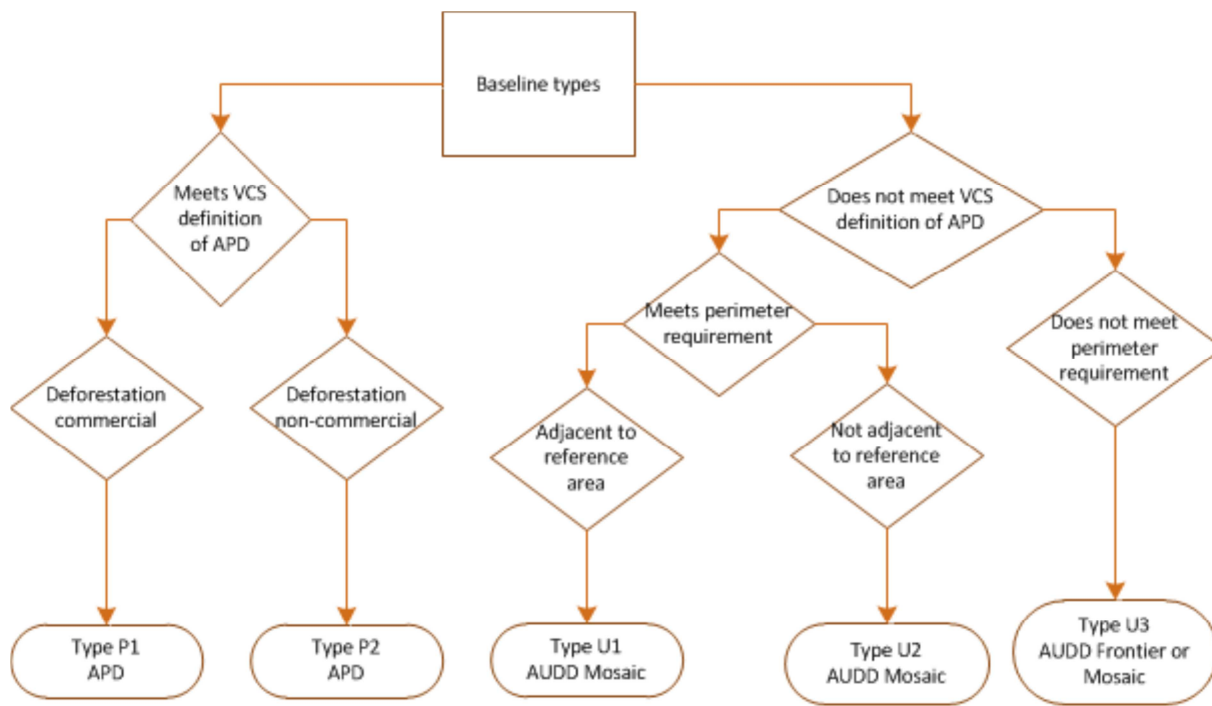


Figure 1 “Figure 3 Of Methodology VM0009 version2.0”: Decision tree to determine baseline types.

DNV confirms that the project has correctly applied the baseline identification tool of the methodology and that P1 is the baseline type valid for this project.

3.2.5 Additionality

In line with the methodology the PD has identified that 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. The end-state land cover in this land use scenario is characterized by nearly complete deforestation.

In order to demonstrate additionality the project uses the the VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (Version 3.0).

As a first check, the audit team made sure that the project complied with the applicability conditions in order to use the aforementioned tool. These applicability conditions are as follows:

a) AFOLU activities the same or similar to the proposed project activity on the land within the proposed project boundary performed with or without being registered as the VCS AFOLU project shall not lead to violation of any applicable law even if the law is not enforced;

b) The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. Project proponent(s) proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity.

DNV can confirm that no similar project, without being registered as a VCS AFOLU project, will lead to violation of any applicable law, even if not enforced. This was further confirmed through interviews conducted with project stakeholders and project personnel during on-site inspection, as well as through an analysis of all applicable laws similar to the one conducted in section 3.1.4 of this report. In addition, as is evidenced in section 3.2.4 of this report as well, a stepwise approach is used in justifying the determination of the most plausible baseline scenario. It was thus determined that the applicability conditions for the employment of the pertinent additionality tool were met.

The tool next requires the project proponents to carry out the following four steps to determine if their project is additional:

a) STEP 1. Identification of alternative land use scenarios to the AFOLU project activity;

b) STEP 2. Investment analysis to determine that the proposed project activity is not the most economically or financially attractive of the identified land use scenarios; or

c) STEP 3. Barriers analysis; and

d) STEP 4. Common practice analysis.

In line with the methodology and the aforementioned tool, the VCS PD has identified one alternative land use scenario. As mentioned above, this scenario would be the continuation and proliferation of logging activities which had begun under the terms of the logging concession. As part of step 2, the project proponents were able to justify that the costs associated with the VCS AFOLU project demonstrate that the activity produces no financial benefits other than VCS related income /1/. According to the tool in use, these arguments thus also allowed the project proponents to apply a simple cost analysis (Option I) and to conclude that the proposed VCS AFOLU project produces no financial benefits other than VCS related income. This information was confirmed through on-site inspection, interviews with local stakeholders, as well as revision of financial documents provided for by the project proponents in their risk buffer determination /34/ as well as in discussions with a representative of the Ministry of the Environment who acts as Director of the Forest Service in the DRC /78/.

Lastly, as part of the common practice analysis, the project proponents were able to demonstrate that no project or activities similar to those proposed by the REDD+ project have been implemented previously or are currently underway in the region. As mentioned above, this was further corroborated in discussions with a representative of the Ministry of the Environment who acts as Director of the Forest Service in the DRC /78/. The relevant geographic region chosen for this analysis was the entire country of the DRC as no activities similar to the activities proposed by this project that are underway in the 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 /78/.

In conclusion, DNV can verify that the project proponents have employed the correct use of the VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (Version 3.0), that they have followed all of its respective steps correctly, and that thus their project can be considered to be additional.

3.2.6 Quantification of GHG Emission Reductions and Removals

3.2.6.1 Baseline Emissions

In line with Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0, the project applies the Baseline Emission Model (BEM) and the Soil Emissions Model (SEM) in order 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.

3.2.6.1.1 Calculating Baseline Emissions from Biomass

Cumulative baseline emissions from biomass $E_{B\ BM}^{[m]}$ are estimated using equation [F.18] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$E_{B\ BM}^{[m]} = BEM_{P1}(c_{P\ BM}^{[m=0]}, c_{B\ BM}^{[m]}, t^{[m]}, x^{[m]})$$

This estimate employs the Biomass Emissions Model (BEM) for baseline type P1 using equation [F.2] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$\begin{aligned} BEM_{P1}(c_P, c_B, t, x) &= \frac{m(t - t_{PA})}{365(1 + e^{t - t_{SA} - t_{PA} - t_{PAI}})} \\ &+ \frac{A_{PAA}(c_P - c_B)e^{t - t_{SA} - t_{PA} - t_{PAI}} + \frac{HA_{P1}(c_P, c_B)t}{t_{PL} - t_{PAI}}}{(1 + e^{t - t_{SA} - t_{PA} - t_{PAI}}) \left[1 + e^{\ln\left(\frac{365A_{PAA}(c_P - c_B)}{m(t_{SA} - t_{PAI})} - 1\right) - \beta(t - t_{SA} - t_{PA} - t_{PAI}) + \theta(x_{SA} - x - x_{PAI})^T} \right]} \\ &- HA_{P1}(c_P, c_B) \end{aligned}$$

where

$$\begin{aligned} HA_{P1}(c_P, c_B) &= \frac{m}{365(1 + e^{t - t_{SA} - t_{PA} - t_{PAI}})} \\ &+ \frac{A_{PAA}(c_P - c_B)e^{t - t_{SA} - t_{PA} - t_{PAI}}}{(1 + e^{t - t_{SA} - t_{PA} - t_{PAI}}) \left[1 + e^{\ln\left(\frac{365A_{PAA}(c_P - c_B)}{m(t_{SA} - t_{PAI})} - 1\right) + \beta(t_{SA} + t_{PA} + t_{PAI}) + \theta(x_{SA} - x - x_{PAI})^T} \right]} \end{aligned}$$

3.2.6.1.2 Calculating Baseline Emissions from SOC for Types P1 and P2

Cumulative baseline emissions from SOC $E_{B\ SOC}^{[m]}$ are estimated using equation [F.24] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$E_{B\ SOC}^{[m]} = SEM_P(c_P^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]})$$

This estimate employs the Soil Emissions Model (SEM) for baseline type P1 using equation [F.6] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$\begin{aligned} SEM_P(c_P, c_B, t, x) &= \frac{A_{PAA}(c_P - c_B)}{1 + e^{-\alpha - \beta(t + \gamma - t_{PA} - t_{PAI}) - \theta x^T - x_{PAI}}} \left[1 + \frac{1}{1 + e^{-\alpha - \beta(\gamma - t_{PA} - t_{PAI}) - \theta x_0^T - x_{PAI}}} \right] \\ &\quad - \frac{A_{PAA}(c_P - c_B)}{1 + e^{-\alpha - \beta(\gamma - t_{PA} - t_{PAI}) - \theta x_0^T - x_{PAI}}} \end{aligned}$$

3.2.6.1.3 Calculating Carbon Not Decayed in DW

Standing and lying dead wood is conservatively excluded and therefore is not included in carbon accounting.

3.2.6.1.4 Calculating Carbon Not Decayed in BGB

Carbon not decayed in BGB is estimated using equation [F.10] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$DEM_{DW, BGB}(E_{B\ \Delta}^{[m]}, t, t^{[m-1]}, t^{[m]}) = \frac{E_{B\ \Delta}^{[m]}}{3650(1 + e^{t-365})} \left(3650 + t^{[m]} - t + \frac{t^{[m]} - t^{[m-1]}}{2} \right)$$

The Decay Emissions Model for carbon in dead wood and below-ground biomass are based on the default VCS decay models for these pools.

3.2.6.1.5 Calculating Carbon Not Decayed in SOC

Carbon not decayed in BGB is estimated using equation [F.9] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$DEM_{SOC}(E_{B\ \Delta}^{[m]}, t, t^{[m-1]}) = E_{B\ \Delta}^{[m]} - \frac{365 E_{B\ \Delta}^{[m]}}{\lambda_{SOC}(t - t^{[m-1]})} \left[\frac{\lambda_{SOC}(t - t^{[m-1]})}{365} + e^{-\frac{\lambda_{SOC}(t - t^{[m-1]})}{365}} - 1 \right]$$

The Decay Emissions Model for soil carbon uses λ_{SOC} , a parameter that characterizes the decay of soil over time. λ_{SOC} can be determined one of three ways, as outlined in sections 6.17.1.1, 6.17.1.2 and 6.17.1.3 of the VM0009 methodology version 2.0.

3.2.6.1.6 Calculating Cumulative Emissions from AGMT for Type P1

Cumulative emissions from AGMT for Type P1, using equation [F.36] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$E_{B\ AGMT}^{[m]} = BEM_{P1} \left(c_{P\ AGMT}^{[m=0]} + c_{P\ BGMT}^{[m=0]}, c_{B\ AGMT}^{[m]} + c_{B\ BGMT}^{[m]}, t^{[m]}, x^{[m]} \right) \left(1 - \frac{r_{RS}}{1 + r_{RS}} \right)$$

Cumulative emissions include AGMT and BGMT; average carbon stocks are measured for the project accounting area prior first monitoring event as well as in the proxy area.

3.2.6.1.7 Determining Carbon Stored in WP

Because logging is included in the baseline scenario, carbon stored in long-lived wood products is considered. The amount of carbon stored in wood products is determined using the baseline equation [C.1] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$C_{B\ WP}^{[m]} = (1 - w) \left(E_{B\ AGMT}^{[m]} \right) \sum_{ty \in T} p_{ty}^{[m]} l_{ty} (1 - f_{ty})^{95}$$

$C_{B\ WP}^{[m]}$ is represented as CO₂e sequestered in long-lived wood products after 100 years.

3.2.6.2 *Project Emissions*

Project emissions are calculated in F.39 of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$E_{P\ \Delta}^{[m]} = E_{P\ \Delta\ BRN}^{[m]} + A_{PAA} \left(c_P^{[m-1]} - c_P^{[m]} \right) - C_{P\ \Delta\ WP}^{[m]}$$

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.

3.2.6.2.1 Calculating Emissions from Changes in Project Stocks

Changes in project stocks are calculated as the difference in project stocks in each stratum between the current and prior monitoring periods:

$$A_{PAA} \left(c_P^{[m-1]} - c_P^{[m]} \right)$$

Stocks that are lost to burning, wood products, and leakage are accounted for using the procedures and equations below.

3.2.6.2.2 Calculating Emissions from Burning

Biomass burning is not currently a planned project activity. As such it is not included in carbon accounting. However, if future project activities include this pool then project emissions from burning of biomass are

calculated using equation [F.40] of the the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$E_{P \Delta BRN}^{[m]} = \left(\frac{44}{12}\right) 0.66 \sum_{b \in W^{[m]}} r_{CF \ b} B_b^{[m]}$$

3.2.6.2.3 Determining Carbon Stored in WP

Project emissions from carbon stored in WP are calculated using equation [C.2] of the the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

$$C_{P \Delta WP}^{[m]} = (1 - w) \sum_{ty \in T} C_{P \ ty}^{[m]} l_{ty} (1 - f_{ty})^{95}$$

3.2.6.3 *Leakage*

3.2.6.3.1 Estimating Emissions from Activity-Shifting Leakage

Activity-shifting leakage is not applicable to this project. Although it would be applicable to the secondary agents, the mobility (and activities) of the secondary agent is limited by the inability to use access roads into the area and the availability of forest area within the mobility range of the secondary agent. It was found that deforestation in the area around the project had already seen a level of conversion to agriculture that reaches to the maximum range of the secondary agents and as such further deforestation as part of leakage would not occur and as such activity-shifting leakage as be considered zero.

3.2.6.3.2 Determining Emissions from Market-Effects Leakage

In line with the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0 the project is defined as having a baseline scenario P1, and under this circumstances, the market leakage does not have to be applied if the primary agent is known and the project proponent has demonstrated that there is no possibility of that agent to be awarded a further/replacement concession within the national boundary. On the basis that the primary agent SOFORAMA already holds significant concessions within the Democratic Republic of Congo that exceed the maximum legal size of concession holdings by one company, the company will not be able to obtain a new concession to replace the production from the project area. Therefore the market leakage is set at zero

3.2.6.4 *Summary of GHG Emission Reductions and/or Removals*

3.2.6.5 *Quantifying Net Emissions Reductions for a PAA*

NERs are calculated by subtracting the buffer allocation from the gross emissions reductions, using equation [F.50] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0:

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

NERs are calculated at each monitoring event.

3.2.6.5.1 Determining Deductions for Uncertainty

Deductions for uncertainty are determined using equation [F.53] of the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0

$$E_U^{[m]} = E_{\Delta GER}^{[m]} \left[\frac{1.64}{E_B^{[m]} + A_{PAA}C_P^{[m]} + A_{PX}C_B^{[m]}} \sqrt{\left(U_{EM}^{[m]}\right)^2 + \left(U_P^{[m]}\right)^2 + \left(U_B^{[m]}\right)^2} - 0.15 \right]$$

Uncertainty deductions are documented for each monitoring event.

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

In line with the requirement of the VCS and the methodology the project calculated the Non-Permanence Risk by applying the VCS AFOLU Non-Permanence Risk Tool, version 3.1. The total Risk rating was determined to be 25%. Details of the risk assessment can be found in Annex R - Non-Permanence Risk Worksheet v1.1.xlsx/34/ of the PD

Total Non-Permanence Risk

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

Table 5: Total non-permanence risk rating.

Based on the calculations above and the module spreadsheet (NER Worksheet 2.13.xlsm) /30/ DNV has been able to confirm that the calculations to determine the baseline emission and the project emissions were transparent and accurate in line with the Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009) version 2.0. The overall emission reductions for the duration of the crediting period can be found in the table below.

Monitoring Period	Date of Monitoring	Estimated baseline emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
1	10/31/2012	3,398,286	0	2,548,715

Monitoring Period	Date of Monitoring	Estimated baseline emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
2	10/31/2013	2,819,006	0	2,114,255
3	10/31/2014	3,529,795	0	2,647,346
4	10/31/2015	4,330,794	0	3,248,096
5	10/31/2016	5,279,073	0	4,201,266
6	10/31/2017	6,273,185	0	4,704,889
7	10/31/2018	7,429,948	0	5,572,461
8	10/31/2019	8,524,210	0	6,393,158
9	10/31/2020	9,642,568	0	7,231,926
10	10/31/2021	10,724,028	0	8,817,407
11	10/31/2022	11,486,467	0	8,614,850
12	10/31/2023	12,156,738	0	9,117,553
13	10/31/2024	12,377,577	0	9,283,183
14	10/31/2025	12,683,678	0	9,512,758
15	10/31/2026	13,011,345	0	11,304,342
16	10/31/2027	11,833,474	0	8,875,106
17	10/31/2028	11,439,490	0	8,579,617
18	10/31/2029	10,448,018	0	7,836,014
19	10/31/2030	10,047,330	0	7,535,497
20	10/31/2031	9,413,412	0	9,270,665
21	10/31/2032	7,067,767	0	5,300,825
22	10/31/2033	7,093,658	0	5,320,243
23	10/31/2034	7,062,984	0	5,297,238
24	10/31/2035	5,577,002	0	4,182,751
25	10/31/2036	3,839,613	0	5,473,328
26	10/31/2037	3,567,731	0	2,675,798
27	10/31/2038	3,341,502	0	2,506,127
28	10/31/2039	3,101,996	0	2,326,497
29	10/31/2040	2,978,211	0	2,233,659
30	3/13/2041	443,874	0	3,094,440
Total		220,922,762	0	175,820,011

Table 6: Projected Baseline Emissions, Project Emissions and Leakage Emissions for each monitoring period of the Project

3.2.7 Methodology Deviations.

The project is not applying any deviation from the methodology and as such this section is not applicable

3.2.8 Monitoring Plan

The monitoring plan correctly identifies all the parameters that have to be monitored as defined under the methodology /10/. As required under the methodology the parameters that are needed for the quantification of the baseline type within the module are measured at the beginning of the project at validation and consequently every 10 years they will be updated by assessing anew each individual parameter and collect the respective data needed for the parameters. For the project emission the parameters are measured on a yearly basis using a sampling plan valid for each of the project areas. However some of the other monitoring activities are being done at different intervals and can be found in the table below.

Activity	Frequency	Method
Forest Patrols and Perimeter Observation	Weekly	Patrol team inspects perimeter of project area
Plot Measurements	Once per year	Sampling teams visit a portion of plots in project, proxy, and leakage areas
Identification of Significant Disturbance	Once every 2-3 years or after major disturbance event	Periodic inspection of aerial imagery or videography, with ground inspection when necessary

In order to undertake the monitoring effectively the project has set up a number of different Standard Operating Procedures (SOPs) which address:

- Non-Destructive Field Measurements For Calculation of Biomass, /4/
- Biomass Plot Sampling, /5/
- Field Protocol for Core Soil Sampling, /6/
- Allometry Biomass Estimation in the Field, /9/
- Tree Biomass Estimate Lab Procedures, /8/
- Quality Control Procedure, /7/

In addition the project uses the different mapping material and supporting tools which facilitate the final calculations and modelling of the project

- Species Allometry
- Allometry Sampling Map
- Allometry Sampling Plot List

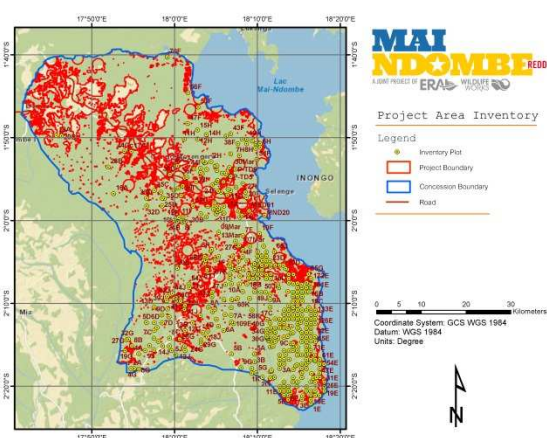


Figure 2: Inventory Plots in Project Area

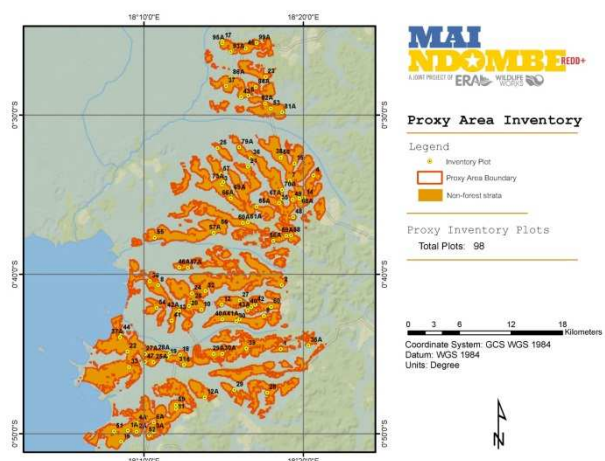


Figure 3: Inventory Plots in Proxy Area

The monitoring plan also includes a sample plan that defines a yearly sampling of 20% of the total number of sample plot (463) from the initial inventory undertaken in year one of the project, as well as the frequency that disturbances are monitored through aerial imagery (Table 7).

Year	Remote Sensing Analysis
2012	In the event of significant potential disturbance
2013	Scheduled analysis
2014	In the event of significant potential disturbance
2015	Scheduled analysis
2016	In the event of significant potential disturbance
2017	Scheduled analysis

Table 7: Frequency of Disturbance Monitoring

MRR	Requirement	Applicability
MRR.1	A digital (GIS-based) map of the project area with at least the above minimum requirements for delineation of the geographic boundaries.	Applicable
MRR.2	The project start date.	Applicable
MRR.3	The <i>project crediting period start date</i> , end date and length.	Applicable
MRR.4	A list and descriptions of all instances in the group.	Not applicable. Not a group project.
MRR.5	A map of the locations or boundaries of all instances in the group indicating that all instances are in the same region.	Not applicable. Not a group project.
MRR.6	A digital (GIS-based) map of the accounting areas with at least the above	Applicable

MRR	Requirement	Applicability
	minimum requirements for delineation of the geographic boundaries.	
MRR.7	For each project activity instance in the group, its project activity instance start date.	Not applicable. Not a group project.
MRR.8	For each project accounting area, the value of $\hat{t}_{PAI}$.	Not applicable. Not a group project.
MRR.9	A table of covariate values as of the project activity instance start dates and a description of how the values were determined including any interpolation or extrapolation methods.	Not applicable. No covariates were used.
MRR.10	Calculations of current baseline emissions $E_{B\Delta}^{[m]}$ as of the current monitoring period.	Applicable
MRR.11	Calculations of baseline emissions $E_{B\Delta}^{[m-1]}$ from prior monitoring periods.	Not applicable. First monitoring period.
MRR.12	Calculations of cumulative baseline emissions for each selected pool ($E_{B\Delta}^{[m]}$ and $E_{B\Delta}^{[m]}$) and undecayed carbon ($C_{B\Delta}^{[m]}$, $C_{B\Delta}^{[m]}$, $C_{B\Delta}^{[m]}$ and $C_{B\Delta}^{[m]}$), as of the current monitoring period.	Applicable
MRR.13	Calculations of cumulative baseline emissions from biomass $E_{B\Delta}^{[m]}$ for the current monitoring period.	Applicable
MRR.14	Calculations of cumulative baseline emissions from biomass $E_{B\Delta}^{[m]}$ for all prior monitoring periods.	Not applicable. First monitoring period.
MRR.15	The order of strata from lowest carbon stocks to highest carbon stocks based on the average across all pools.	Not applicable. Not Type U3.
MRR.16	Calculations for each step which are carried through from monitoring period to monitoring period.	Not applicable. Not Type U3.
MRR.17	Calculations of cumulative baseline emissions from biomass $E_{B\Delta}^{[m]}$ for prior monitoring periods.	Not applicable. Not Type U3.
MRR.18	An estimate of current baseline emissions from SOC $E_{B\Delta}^{[m]}$ as of the current monitoring period.	Applicable
MRR.19	An estimate of cumulative baseline emissions from SOC $E_{B\Delta}^{[m]}$ for the current monitoring period.	Applicable
MRR.20	Calculations of cumulative baseline emissions from SOC $E_{B\Delta}^{[m]}$ for all prior	Not applicable.

MRR	Requirement	Applicability
	monitoring periods.	First monitoring period.
MRR.21	An estimate of current baseline emissions from SOC $E_{B \Delta SOC}^{[m]}$ as of the current monitoring period.	Not applicable. Not Type U1.
MRR.22	An estimate of cumulative baseline emissions from SOC $E_{B SOC}^{[m]}$ for the current monitoring period.	Not applicable. Not Type U1.
MRR.23	Calculations of cumulative baseline emissions from SOC $E_{B SOC}^{[m]}$ for all prior monitoring periods.	Not applicable. Not Type U1.
MRR.24	An estimate of current baseline emissions from SOC $E_{B \Delta SOC}^{[m]}$ as of the current monitoring period.	Not applicable. Not Type U2 or U3.
MRR.25	An estimate of cumulative baseline emissions from SOC $E_{B SOC}^{[m]}$ for the current monitoring period.	Not applicable. Not Type U2 or U3.
MRR.26	Calculations of cumulative baseline emissions from SOC $E_{B SOC}^{[m]}$ for all prior monitoring periods.	Not applicable. Not Type U2 or U3.
MRR.27	An estimate of carbon stored in non-decayed DW $C_{B DW}^{[m]}$ for the current monitoring period.	Applicable
MRR.28	An estimate of cumulative baseline emissions from DW $E_{B DW}^{[m]}$ for the current monitoring period.	Applicable
MRR.29	An estimate of cumulative baseline emissions from AGMT $E_{B AGMT}^{[m]}$ for the current monitoring period.	Applicable
MRR.30	Calculations of cumulative baseline emissions from DW $E_{B DW}^{[m]}$ for all prior monitoring periods.	Not applicable. First monitoring period.
MRR.31	Calculations of cumulative baseline emissions from AGMT $E_{B AGMT}^{[m]}$ for all prior monitoring periods.	Not applicable. First monitoring period.
MRR.32	An estimate of carbon stored in non-decayed BGB $C_{B BGB}^{[m]}$ for the current monitoring period.	Applicable
MRR.33	An estimate of cumulative baseline emissions from BGB $E_{B BGB}^{[m]}$ for the current monitoring period.	Applicable
MRR.34	Calculations of cumulative baseline emissions from BGB $E_{B BGB}^{[m]}$ for all prior monitoring periods.	Not applicable. First monitoring period.

MRR	Requirement	Applicability
	monitoring periods.	period.
MRR.35	An estimate of carbon stored in non-decayed SOC $C_{B\ SOC}^{[m]}$ for the current monitoring period.	Applicable
MRR.36	Carbon stored in long-lived wood products $C_{B\ WP}^{[m]}$ after 100 years.	Applicable
MRR.37	Calculations to determine $C_{B\ WP}^{[m]}$.	Applicable
MRR.38	A map of the boundaries of any significant disturbance in the project accounting areas during the monitoring period.	Not applicable. No emissions events during monitoring period.
MRR.39	Evidence that plots were installed into these disturbed areas and were measured per section 9.	Not applicable. No emissions events during monitoring period.
MRR.40	A table of events when woody biomass was burned during the monitoring period, showing the weight of woody biomass in tonnes and the date consumed.	Not applicable. No biomass burning or charcoal production in project activities.
MRR.41	Carbon stored in long-lived wood products $C_{P\ \Delta\ WP}^{[m]}$ after 100 years.	Not applicable. No harvesting of wood products in project activities.
MRR.42	Scale reports or records of carbon in log production by wood product type $C_{P\ ty}^{[m]}$.	Not applicable. No harvesting of wood products in project activities.
MRR.43	Calculations to determine $C_{P\ \Delta\ WP}^{[m]}$.	Not applicable. No harvesting of wood products in project activities.

MRR	Requirement	Applicability
MRR.44	A description of project activities that have been implemented since the project start date and the estimated effects of these activities on <i>leakage</i> mitigation.	Not applicable. No leakage.
MRR.45	Calculated cumulative emissions from activity-shifting leakage for the current monitoring period $E_{L\ AS}^{[m]}$ and supporting calculations.	Not applicable. No leakage.
MRR.46	Calculated cumulative emissions from activity-shifting leakage for the prior monitoring periods $E_{L\ AS}^{[m]}$.	Not applicable. No leakage.
MRR.47	A description and justification of the change to the activity-shifting leakage area.	Not applicable. No leakage.
MRR.48	A map of the delineated boundaries.	Not applicable. No leakage.
MRR.49	Maps of the landscape configuration, including: a. Topography (elevation, slope, aspect); b. Recent land use and land cover (either a thematic map created by the project proponent or publicly available map); c. Access points; d. Soil class maps (if available); e. Locations of important markets; f. Locations of important resources like waterways or roads; and g. Land ownership/tenure boundaries.	Not applicable. No leakage.
MRR.50	A narrative describing the rationale for selection of activity-shifting leakage area boundaries. If the activity-shifting leakage area is smaller than the project accounting area or cannot be defined, justification for the size of the area.	Not applicable. No leakage.
MRR.51	Results of a spatial analysis to demonstrate the activity-shifting leakage area is entirely forested as of the project start date.	Not applicable. No leakage.
MRR.52	Results of a spatial analysis to demonstrate the activity-shifting leakage area is no larger than the project accounting area.	Not applicable. No leakage.
MRR.53	The estimated value $\hat{p}_{L\ DEG}^{[m]}$ for the current monitoring period and supporting calculations.	Not applicable. No leakage.
MRR.54	The calculated value $\hat{p}_{L\ DEG}^{[m=0]}$ calculated for the first monitoring period.	Not applicable. No leakage.
MRR.55	Estimated cumulative emissions from market-effects leakage for the current monitoring period $E_{L\ ME}^{[m]}$ and supporting calculations.	Not applicable. No leakage.
MRR.56	Calculated cumulative emissions from market-effects leakage for the prior	Not applicable.

MRR	Requirement	Applicability
	monitoring periods $E_{LME}^{[m]}$.	No leakage.
MRR.57	Provide evidence in the form of GIS imagery, PRA evidence, or the baseline operator's management plan that management plans or land-use designations have not changed in the baseline operator's other lands.	Not applicable. No leakage.
MRR.58	Quantified GERS for the current monitoring period including references to calculations.	Applicable
MRR.59	Quantified GERS for the prior monitoring period.	Not applicable. First monitoring period.
MRR.60	A graph of GERS by monitoring period for all monitoring periods to date	Applicable
MRR.61	The confidence deduction $E_U^{[m]}$ and estimated standard errors used to determine the confidence deduction.	Applicable
MRR.62	Reference to calculations used to determine the confidence deduction.	Applicable
MRR.63	The linear model used to generate GERS for the current monitoring period.	Not applicable. Linear model not selected.
MRR.64	A graph of GERS from the linear model by monitoring period for all monitoring periods to date that used a linear model.	Not applicable. Linear model not selected.
MRR.65	A description of the reversal including which pools contributed to the reversal and reasons for its occurrence.	Not applicable. No reversal.
MRR.66	A description of the reversal including a summary of new data obtained in the reference area.	Not applicable. No reversal.
MRR.67	Quantified NERs for the current monitoring period including references to calculations.	Applicable
MRR.68	Quantified NERs for the prior monitoring period.	Not applicable. First monitoring period.
MRR.69	A graph of NERs by monitoring period for all monitoring periods to date.	Applicable
MRR.70	Reference to the VCS requirements used to determine the buffer account allocation.	Applicable

MRR	Requirement	Applicability
MRR.71	Reference to calculations used to determine the buffer account allocation.	Applicable
MRR.72	Quantified NERs for the current monitoring period including references to calculations.	Not applicable. Only one project accounting area.
MRR.73	Quantified NERs for the prior monitoring period.	Not applicable. Only one project accounting area.
MRR.74	A graph of NERs by monitoring period for all monitoring periods to date.	Not applicable. Only one project accounting area.
MRR.75	Quantified NERs by vintage year for the current monitoring period including references to calculations.	Applicable
MRR.76	Comparison of NERs presented for verification relative to NERs from <i>ex-ante</i> estimates.	Not applicable. First monitoring period.
MRR.77	Description of the cause and effect of deviations from <i>ex-ante</i> estimates.	Not applicable. First monitoring period.
MRR.78	List of parameters from Appendix H, their values and the time last measured.	Applicable
MRR.79	Quality assurance and quality control measures employed for each.	Applicable
MRR.80	Description of the accuracy of each.	Applicable
MRR.81	Documentation of training for field crews.	Applicable
MRR.82	If included in project activities, a description of procedures used to estimate the rate of biomass burning and charcoal production and demonstration that these estimates are conservative.	Not applicable. No biomass burning or charcoal production in project activities.
MRR.83	Documentation of data quality assessment such as a check cruise and plots of the data such as diameter distributions by strata or plot.	Applicable

MRR	Requirement	Applicability
MRR.84	Maps of a stratification (if any) and references to plot allocation.	Applicable
MRR.85	List of plot GPS coordinates.	Applicable
MRR.86	Description of plot size and layout (such as the use of nests and their sizes) for each carbon pool.	Applicable
MRR.87	If applicable, a detailed description of the process used to develop allometric equations, to include: a) Sample size b) Distribution (e.g. diameter) of the sample c) Model fitting procedure d) Model selection	Applicable
MRR.88	The estimated carbon stock, standard error of the total for each stock, and the sample size for each stratum in the area selected.	Applicable
MRR.89	Log export monitoring records and standard operating procedure in the project area, if there is commercial harvest in the project scenario.	Not applicable
MRR.90	Deviations from the measurement methods set out in Appendix B, per current VCS requirement.	Applicable
MRR.91	The frequency of monitoring for each plot for all plots – all plots should be measured for the first verification. All leakage plots should be measured every verification, and all proxy and project accounting area plots at least every 5-10 years, or after a significant event that changes stocks.	Applicable
MRR.92	A list of all selected allometric equations used to estimate biomass for trees and non-trees.	Applicable
MRR.93	For each selected allometric equation, a list of species to which it being applied and the proportion of the total carbon stocks predicted by the equation.	Applicable
MRR.94	For each selected allometric equation, indication of when it was first employed to estimate carbon stocks in the project area (monitoring period number and year of monitoring event).	Applicable
MRR.95	For each selected allometric equation, indication of whether was validated per sections 9.3.1.1 or 9.3.1.2.	Applicable
MRR.96	Documentation of the source of each selected allometric equation and justification for their applicability to the project area considering climatic, edaphic, geographical and taxonomic similarities between the project location and the location in which the equation was derived.	Applicable
MRR.97	A list of allometric equations validated by destructive sampling.	Applicable

MRR	Requirement	Applicability
MRR.98	For each, the number of trees (or non-trees) destructively sampled and the location where the measurement were made relative to the project area.	Applicable
MRR.99	A field protocol used to measure destructively sampled trees (or non-trees).	Applicable
MRR.100	Justification that the field protocol for the destructive measurement method is conservatively estimates biomass.	Applicable
MRR.101	For each allometric equation in the list, a figure showing all the descriptive measurements of biomass compared to predicted values from its selected allometric equation.	Applicable
MRR.102	A list of allometric equations cross validated.	Applicable
MRR.103	For each, the number of trees (or non-trees) destructively sampled to build the equation and the location where the measurement were made relative to the project area.	Applicable
MRR.104	A field protocol used to measure trees (or non-trees) when developing the equation.	Applicable
MRR.105	Justification that the field protocol for the measurement method to build the equation conservatively estimates biomass.	Applicable
MRR.106	For each allometric equation in the list, the value of $\bar{E}$.	Applicable

Table 8: VM0009 - Monitoring Report Requirements

3.3 Environmental Impact

The project, in addition to the VCS, has applied the CCB standard and as part of the requirements under the CCB has undertaken an extensive assessment of the environmental impacts exerted by the the project proponent and its stakeholders. In addition to the environmental impact assessment as part of the Participatory Rural Appraisal, which did not identify any negative environmental impacts, the the Ministry of Environment, Conservation of Nature and Tourism: as confirmed that based on the fact that the logging concession has been converted into a conservation concession no negative environmental impacts are expected.

DNV therefore confirms that based on the information provided by the PP no negative environmental impacts have been identified.

3.4 Comments by stakeholders

The project has undertaken an extensive stakeholder consultation prior to obtaining the permissions to operate the logging concession under a conservation licence and as part of its continuous operations maintains a high level of stakeholder interaction throughout the lifetime of the project. In order to do so

the project has a group of animateurs which collaborate closely with the different stakeholders and local villages within and around the project area.

As part of the stakeholder consultation, part of the project design have been modified in particular the buffer area around the individual villages within the project areas based on the direct interaction with the villages. Around each individual village, a 2.5 km buffer zone is implemented where villages are able to practice their agriculture and may convert forest in the process of doing so. This 2.5 km is consequently excluded from the accounting area of the project although it remains within the management of the project to ensure that villages do not exceed the 2.5 km zone.

4 VALIDATION CONCLUSION

DNV Climate Change Services AS (DNV) has performed a validation of the project activity “The Mai Ndombe REDD+ Project ” in the the Democratic Republic of Congo. The validation was performed on the basis of VCSA criteria for the VCS project as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

The project correctly applies the methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0.

As a result, the project results in reductions of CO₂ emissions which are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be on the average 5 671 613 tCO₂e per year over the selected 30 year crediting period whereby the baselines in line with the Methodology is being reassessed every 10 years. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

The monitoring plan provides for the monitoring of the project’s emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design and it is DNV’s opinion that the project participants are able to implement the monitoring plan.

In summary, it is DNV’s opinion that the project activity “The Mai Ndombe REDD+ Project ” in the Democratic Republic of Congo, as described in the VCS PD, version 1.63 dated 19 November 2012, meets all relevant VCSA requirements for the VCS project and correctly applies the VCS methodology “Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)”, version 2.0. Hence, DNV recommends the registration of the project as a VCS project activity.

APPENDIX A

VCS VALIDATION PROTOCOL

Table 1 Requirements Checklist

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
1. Project Details					
1.1 Summary Description of the Project					
1.1.1 1.1.1 Does Section 1.1 of the VCS PD include a clear summary description of the project?	/1/	DR	Section 1.1 of the VCS PD provide a good overview of both the history of the forestry sector in DRC and the project area.		OK
1.2 Sectoral Scope and Project Type					
1.2.1 1.2.1 Are the sectoral scopes applicable to the project clearly described? Is the project a grouped project?	/1/	DR	The project is not a grouped project and is clearly identified as an REDD+ project as part of the VCS AFOLU definition.		OK
1.3 Project Proponent					
1.3.1 1.3.1 Are contact information and roles/responsibilities for the project proponent(s) clearly and properly described?	/1/	DR	The PD provide a good overview of the project proponents and their background.		OK
1.4 Other Entities Involved in the Project					
1.4.1 1.4.1 Have contact information and roles/responsibilities for any other entities involved in the development of the project be provided?	/1/	DR	Outside the ERA and Wildlife Works there are no other organisations that systematically are involved in the project. Although the project does consult also with EcoPartners who together with Wildlife Works was responsible for the methodology.	CL 5	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			EcoPartners was involved in the internal audit of the reference area /29/ Supportive documentation not fully complete.		
1.5 Project Start Date					
1.5.1 What is the project start date? Has the project start date been defined correctly?	/1/	DR	The project start date is defined as 11 March 2011 where the official contract signature date is 14 March 2011	CAR 4	OK
1.6 Project Crediting Period					
1.6.1 What is the crediting period start date? Is the date determined appropriately? What is the selected crediting period?	/1/	DR	The crediting period is based on a start date of 11 March 2011 and not based on the actual contract date fo 14 March 2011	CAR 4	OK
1.7 Project Scale and Estimated GHG Emission Reductions or Removals					
1.7.1 What is the scale of the project? What are the estimated annual GHG emission reductions or removals for the project crediting period?	/1/	DR	The project is producing more then 1 million VCUs per year and as such is classified as a Mega Project. The estimated annual GHG emission removals needs to be updated based on the outstanding CAR.	CAR 2 CAR 3 CAR 6	OK
1.8 Description of the Project Activity					
1.8.1 What are project activity or activities (including the technologies or measures employed) and how it/they will achieve net GHG emission reductions or removals? What is	/1/	DR	The project is classified as REDD+ project where by the project has taken over an existing logging		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
the lifetime of the project activity(s)?			concession and managed as a conservation project preventing any further logging to take place and thereby limiting the access in to the forest and stop secondary agents from clearing the forest for agricultural cultivation.		
1.9 Project Location					
1.9.1 What is the project location and geographic boundaries if applicable?	/1/	DR	The Mai Ndombe REDD+ Project area is situated in the Inongo Territory in the Mai-Ndombe Lake District in the Bandundu Province. The project is located on the West shore (to the East) of Lake Mai Ndombe, between the lake itself and the Bolipa Mpe (Boruampe) River to the West, and between the Lokeke River to the South and the Bolog'o Lule River to the North.		OK
1.10 Conditions prior to Project Initiation					
1.10.1 Are the conditions prior to project initiation clearly described in the VCS PD with supporting evidence?	/1/	DR	Prior to the project the area was held by SOFORAMA to be commercial timber extraction. After the moratorium enforced by the Ministry of Environment, Conservation of Nature and Tourism: SOFORAMA was in the processing to obtain a new permit to restart its operations within the project areas.	CL 5	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			Supportive documentation not fully complete.		
1.10.2 Is it demonstrated that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction?	/1/	DR	The project prevents further carbon loss due to commercial logging activities and secondary agents deforestation for agricultural production		OK
1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks					
1.11.1 What relevant local, regional and national laws, statutes and regulatory frameworks are identified?	/1/	DR	- Forestry Code “Loi n°11/2002, 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 - Ministerial Order		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			n°004/CAB/MIN/ECN-T/012 February 15, 2012 • “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. • 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		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			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. • Health benefits Decree-Law 67/310 August 9, 1965 states that companies must cover the health care needs of its employees.		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
1.11.2 Is the project in compliance with all the relevant local, regional and national laws, statutes and regulatory frameworks identified? How is this demonstrated?	/1/	DR	Carbon Rights Agreement signed on March 14, 2011/19/ between ERA Ecosystem Restoration Associates and the DRC government by its representative the Minister of Environment. This agreement transfers the carbon rights to ERA, 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 ERA to the government, in this case only the area tax is to be paid, exempting ERA from other taxes established by the Forestry Code. Forest Conservation Concession Contract signed on July 30, 2011 /21/ by ERA-Congo and the Ministry of Environment, Conservation of Nature and Tourism: representatives, which allocates the conceded lands to ERA-Congo, and defines ERA-Congo's social, environmental and management obligations. Supportive documentation not fully complete.	CL 5	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
1.12 Ownership and Other Programs					
1.12.1 Is evidence of right of use proper?	/1/	DR	- Carbon Rights Agreement /19/ - Forestry Preservation Concession Terms of Reference /20/ - Forest Conservation Contract /21/ Supportive documentation not fully complete.	CL 5	OK
1.12.2 Where applicable, has it been demonstrated that net GHG emission reductions or removals generated by the project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions?	/1/	DR	The project is not part of an other GHG programme and the Democratic Republic of Congo does not have a legally binding target which falls under an Emission Trading Programme		OK
1.12.3 Has the project been registered, or is seeking registration under any other GHG programs? Where the project has been registered under any other GHG program, has the registration number and details been provided?	/1/	DR	The project has stated that it has not requested registration with an other GHG programme, it has applied for the CCB standard to outline its environmental and social contributions		OK
1.12.4 Has it been demonstrate that the project neither has nor intends to generate any other form of GHG-related environmental credit for GHG emission reductions or removals claimed under the VCS Program, or that any such credit has been or will be cancelled from the relevant program?	/1/	DR	The project has stated that it has not requested registration with an other GHG programme, it has applied for the CCB standard to outline its environmental and social		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			contributions.		
1.12.5 Has the project been rejected by any other GHG programs? Where the project has been rejected, has the relevant information been provided?	/1/	DR	There is evidence that the project has been rejected by an other GHG programme, and the project proponent has made statement that the project has not been submitted to an other GHG programme.		OK
1.13 Additional Information Relevant to the Project					
1.13.1 For grouped projects, have eligibility criteria for inclusion of new instances of each project activity been properly identified?	/1/	DR	Not applicable since this is not a group projet.		OK
1.13.2 Where applicable, has the leakage management plan and implementation of leakage and risk mitigation measures been properly described?	/1/	DR	The project does not take account of leakage based on the fact that under the methodology it can exclude leakage if the primary agent is know and demonstrated that this agent cannot obtain replacement concessions. For the secondary agent there is no immediate new forest available within their normal operating range as well as the project provide sufficient bufferzones of 2.5 km around the villages with the specific purpose to expand existing agriculture and future growth.		OK
1.13.3 Has any commercially sensitive information been excluded from the public version of the VCS PD? If yes, can	/1/	DR	The project has a number of	CAR 5	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
the excluded information be justified as being commercially sensitive?			document identified as commercially sensitive information. Monitoring Plan not publically available, other information is justified as commercially sensitive information. Open files are made available to the audit team and all necessary cross checks and calculations can be simulated from information provided by project proponent		
1.13.4 Has the items to which such information pertains been described?	/1/	DR	Where the information is market as commercial sensitive a summary of the information is being provided		OK
2 VCS Methodology					
<i>2.1 Title and reference of the VCS methodology applied to the project activity and explanation of methodology choices</i>					
2.1.1 Does the project apply a VCS program approved methodology and the correct version thereof?	/1/	DR	VCSA: Methodology "Methodology for Avoided Mosaic Deforestation of Tropical Forests (VM0009)", version 2.0.		OK
2.1.2 Has any methodology deviation been applied? If yes, how has the deviation been determined acceptable?	/1/	DR	No deviation is being applied by the project		OK
2.1.3 Has any methodology revision been applied? If yes, has the revision been approved through a double-approval process?	/1/	DR	No deviation is being applied by the project		OK
<i>2.2 Justification of the choice of the methodology and why it</i>					

MoV = Means of Verification, DR= Document Review, I= Interview, CC= Cross-Checking

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
<i>is applicable to the project activity</i>					
2.2.1 Has the project applied correct the VCS AFOLU Requirements version 3.2 for REDD projects activities	/1/	DR	The Methodology is already addressing all the requirements of the VCS AFOLU specific requirements. Among others the project reassess' the baseline every 10 years throughout the crediting period.		OK
2.2.2 Has the project applied correctly the latest version of the VCS Non Permanence Risk Tool version 3.1	/1/	DR CC I	The VCS non-Permanence Risktool is applied by the project and for each of the risks the project as quantified and justified its score. In the assessment the risk of fire is likelihood classed as non-applicable where insect pests is classed as less then every 50 years. The N/A of the fires appear to be incorrect if there is human settlements in and around the area as well as there is evidence of recent forest fires just outside the project area.	CL 4	OK
2.2.3 Has the project applied correctly the Carbon Module / Calculations as outlined in the Methodology	/1/	DR	The Module contains all the parameters required by the methodology but not all the values can be identified or traisted to the origin and as such not determined if the given values are concervative	CL 3	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			and appropriate.		
2.3 Identifying GHG sources, sinks and reservoirs for the baseline scenario and for the project					
2.3.1 What are the project's system boundaries (components and facilities used to mitigate GHGs)? Are they clearly defined and in accordance with the methodology?	/1/	DR	• Above-ground merchantable tree • Above-ground non-merchantable tree • Below-ground merchantable tree • Below-ground non-merchantable tree • Soil organic carbon • Wood products For the merchantable species all the species is considered merchantable if the specific tree species meet the minimum diameter defined under the forestry code.	CL 1 CL 2	OK
2.3.2 Which GHG sources, sinks and reservoirs are identified for the baseline scenario? Is the identification complete?	/1/	DR	Inline with the methodology the P1 Baseline type has been identified on the basis that this is a project that operates in an area that was under a commercial logging licence		OK
2.3.3 Which GHG sources, sinks and reservoirs are identified for the project? Is the identification complete?	/1/	DR	• Above-ground merchantable tree • Above-ground non-merchantable tree		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			- Below-ground merchantable tree - Below-ground non-merchantable tree - Soil organic carbon - Wood products For the merchantable species all the species is considered merchantable if the specific tree species meet the minimum diameter defined under the forestry code.		
2.4 Description of how the baseline scenario is identified and description of the identified baseline scenario					
2.4.1 What is the baseline scenario?	/1/	DR	Inline with the methodology the P1 Baseline type has been identified on the basis that this is a project that operates in an area that was under a commercial logging licence		OK
2.4.2 Which baseline scenarios have been identified? Is the list of baseline scenarios complete?	/1/	DR	Inline with the methodology the P1 Baseline type has been identified on the basis that this is a project that operates in an area that was under a commercial logging licence		Ok
2.4.3 How have the other baseline scenarios been eliminated in order to determine the baseline? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/	DR	Inline with the methodology the P1 Baseline type has been identified on the basis that this is a project that operates in an area that was under a commercial logging licence		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
2.4.4 Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	/1/	DR	Inline with the methodology the P1 Baseline type has been identified on the basis that this is a project that operates in an area that was under a commercial logging licence		OK
2.4.5 Is the baseline determination adequately documented in the VCS PD? - All assumptions and data used by the project participants are listed in the VCS PD. The data are properly referenced. - All documentation is relevant as well as correctly quoted and interpreted. - Assumptions and data can be deemed reasonable. - The methodology has been correctly applied to identify what would occurred in the absence of the proposed VCS project activity.	/1/	DR	The project applies the methodology carbon module the different parameters defined within the methodology however not all the data is clear or whether it is applied correctly throughout the module.	CL 3 CL 5 CAR 3	OK
<i>2.5 Description of how the emissions of GHG by source in baseline scenario are reduced below those that would have occurred in the absence of the project activity (assessment and demonstration of additionality)</i>					
2.5.1 What approach does the project use to assess additionality? Is this in line with the methodology?	/1/	DR	The project demonstrates it additionality using the investment analyses of the VCS additionality tool		OK
Investment analysis					
2.5.2 Does the project activity or any of the remaining alternatives generate revenues apart from carbon revenues? Is this reflected in the VCS PD?	/1/	DR	The project is not expecting any other source of income other then the carbon revenue. For the local		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			communities the projects expect to have additional revenue however these will only become accessible following project investments made by the project that are generated by the carbon revenue.		
2.5.3 Do any of the alternatives to the project activity involve investment? Is this reflected in the VCS PD?	/1/	DR	The alternative commercial logging require investment predominantly in relation to the development of infrastructure need to extract the logs.		OK
2.5.4 Is the choice of benchmark analysis, investment comparison or simple cost analysis correct?	/1/	DR	Simple cost analyses		OK
2.5.5 Is the benchmark/discount rate the latest available at the time of the decision?	/1/	DR	N/A		OK
2.5.6 What is the financial indicator? Is it on equity/project basis? Before/after tax? Does the financial indicator correspond with the benchmark?	/1/	DR	N/A		OK
2.5.7 Are the underlying assumptions appropriate, e.g., what is considered as waste in the baseline and is this considered to have zero value?	/1/	DR	N/A		OK
2.5.8 Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the host country?	/1/	DR	N/A		OK
2.5.9 Is the time period of the investment analysis and operating time of the project realistic? Has salvage value been taken into account? Is working capital returned in the last year of operation?	/1/	DR	N/A		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
2.5.10 How was the amount of output (e.g., sales methane) assessed?	/1/	DR	N/A		OK
2.5.11 How was the output price (e.g., methane) assessed? Were the data available and valid at the time of the decision?	/1/	DR	N/A		OK
2.5.12 How were the investment costs assessed? Were the data available and valid at the time of the decision?	/1/	DR	Yes, overall budget was prepared		OK
2.5.13 How were the O&M costs assessed? Were the data available and valid at the time of decision?	/1/	DR	Yes, overall budget was prepared		OK
2.5.14 Describe the assessment of the other input parameters. Were the data available and valid at the time of decision?	/1/	DR	N/A		OK
2.5.15 Was the financial calculation spreadsheet verified and found to be correct?	/1/	DR	N/A		OK
2.5.16 Sensitivity analysis: Is the range of variations is reasonable in the project context?	/1/	DR	N/A		OK
Barrier analysis					
2.5.17 Are the barriers identified complimentary to a potential investment analysis? Does the barrier have a clear impact on the financial returns so that it can be assessed in an investment analysis? Each barrier is discussed separately.	/1/	DR	N/A		N/A
2.5.18 How were the <u>investment barriers</u> assessed to be real? Are the investment barriers substantiated by a source independent of the project participants?	/1/	DR	N/A		N/A
2.5.19 How does carbon revenue alleviate the investment barriers?	/1/	DR	N/A		N/A
2.5.20 Is the project activity prevented by the investment barriers and is at least one of the possible alternatives to the project activity feasible under the same circumstances?	/1/	DR	N/A		N/A

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
2.5.21 How were the <u>technological barriers</u> assessed to be real? Are the technological barriers substantiated by a source independent of the project participants?	/1/	DR	N/A		N/A
2.5.22 How does carbon revenue alleviate the technological barriers?	/1/	DR	N/A		N/A
2.5.23 Is the project activity prevented by the technological barriers and is at least one of the possible alternatives to the project activity feasible under the same circumstances?	/1/	DR	N/A		N/A
2.5.24 How were the <u>regulatory and institutional barrier</u> assessed to be real? Are the <u>regulatory and institutional barrier</u> substantiated by a source independent of the project participants?	/1/	DR	N/A		N/A
2.5.25 How does carbon revenue alleviate the barriers due to prevailing practice?	/1/	DR	N/A		N/A
2.5.26 Is the project activity prevented by the <u>regulatory and institutional barrier</u> and is at least one of the possible alternatives to the project activity feasible under the same circumstances?	/1/	DR	N/A		N/A
Common practice analysis					
2.5.27 What is the geographical scope of the common practice analysis? Is this justified?	/1/	DR	This is the first REDD+ project within the Democratic Republic of Congo		OK
2.5.28 What is the scope of technology and size (e.g., capacity of power plant) for the common practice analysis and how has this been justified?	/1/	DR	This is the first REDD+ project within the Democratic Republic of Congo		OK
2.5.29 What is the data source(s) used for the common practice analysis?	/1/	DR	This is the first REDD+ project within the Democratic Republic of Congo. Confirmed through interview with Ministry of Environment, Conservation of Nature and Tourism:		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			/78/.		
2.5.30 How many similar projects without carbon income exist in the region within the scope?	/1/	DR	This is the first REDD+ project within the Democratic Republic of Congo		OK
2.5.31 How were possible essential distinctions between the project activity and similar activities assessed?	/1/	DR	This is the first REDD+ project within the Democratic Republic of Congo		OK
2.5.32 What is the conclusion of the common practice analysis?	/1/	DR	This is the first REDD+ project within the Democratic Republic of Congo		OK
Conclusion					
2.5.33 What is the conclusion with regard to the additionality of the project activity?	/1/	DR	Based on the fact that the project applies the simple cost analyses and there are other revenue then the carbon revenue this project is considered to be additional and line with the methodology.		OK
2.6 Methodology Deviation					
2.6.1 Has any methodology deviation been applied? If yes, has the deviation been justified?	/1/	DR	No deviation has been applied		OK
3 Quantification of GHG Emission Reductions and Removals					
3.1 Baseline Emissions					
3.1.1 Has the procedure for quantification of the baseline emissions and/or removals been properly described? Have all the relevant equations described?	/1/	DR I	All the equations have been described making referencing to all the applicable equations from the methodology. However, the parameter non-forest does not seem	CAR 3	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			to be used consistently as the project uses the definition of forest from the FAO however in the field non-forest appears to be more used as soon as commercial logging has finished within an area. Some of the values applied in the module values missing references.		
3.1.2 Are the estimated baseline emissions calculated correctly?	/1/	DR I	Although the module is able to correctly calculates the emissions based on the fact that the non-forest definitions is not consistently used it can not be determined if the parameter values are correct and consequently the calculated emission are correct.	CAR 2	OK
3.2 Project Emissions					
3.2.1 Has the procedure for quantification of the project emissions and/or removals been properly described? Have all the relevant equations described?	/1/	DR	The project applies apart from the emission reduction module that is being defined by the methodology a set of procedures which correctly determine the biomass value and carbon values that are held within the different forest types.		OK
3.2.2 Are the estimated project emissions calculated correctly?	/1/	DR	Although the module is able to correctly calculates the emissions based on the fact that the non-forest	CAR 2	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			definitions is not consistently used it can not be determined if the parameter values are correct and consequently the calculated emission are correct.		
3.3 Leakage					
3.3.1 Has the procedure for quantification of leakage been properly described? Have all the relevant equations described?	/1/	DR I	The project has identified that SOFORAMA is not able to get a new concession since the company already holds concession areas in excess of the maximum amount of area that one concession holder can maximumly hold within the Demoncratic Republic of Congo. This was verbally confirmed during interviews with representatives from the Ministry of Enviroment./76/ Based on this principle no leakage has to be calculated	FAR 1	OK
3.3.2 Are the estimated leakage calculated correctly?	/1/	DR	No leakage has to be applied based on no company previously holding the logging concession		OK
3.4 GHG Emission Reductions and Removals					
3.4.1 Has the procedure for quantification of net GHG emission reductions and removals been properly described? Have all the relevant equations described?	/1/	DR			OK
3.4.2 Are the net GHG emission reductions and removals calculated correctly	/1/	DR	In the module m (commercial logging	CAR 6	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			volume) is set zero after the commercial logging period has ended. Under normal logging concessions after an initial logging cycle normally still has a number of trees within the concession that meet the legal cutting limite but were not harvested. As such the assumption of zero is not correct		
4 Monitoring					
4.1 Data and Parameters Available at Validation					
4.1.1 Have all the data and parameters available at validation properly identified?	/1/	DR	The project applies correctly the methodology and justifies for earch parameter of the methodology if they should be applied or not for the project.		OK
4.2 Data and Parameters Monitored					
4.2.1 Have all the data and parameters monitored subsequent to validation properly identified?	/1/	DR	In the module m (commercial logging volume) is set zero after the commercial logging period has ended. Under normal logging concessions after an initial logging cycle normally still has a number of trees within the concession that meet the legal cutting limite but were not harvested. As such the assumption of zero is not correct	CAR 6	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
4.3 Description of the Monitoring Plan					
4.3.1 How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/1/	DR I CC	The project applies all the Monitoring Requirements of the methodology however the quality control procedure has not been completely implemented at the time of the audit.	CAR 1:	OK
4.3.2 Have organizational structure, responsibilities and competencies been properly identified?	/1/	DR I CC	The project has set up a quality control system and full inventory team set up which is responsible for the required inventories as well as systematic quality control checks. However, the full implementation has not been demonstrated as yet.	CAR 1:	
4.3.3 Have methods for generating, recording, storing, aggregating, collating and reporting data on monitored parameters been properly defined?	/1/	DR	The project documents its findings both in DRC as well as the HQ of Wildlife Works however not all the records for the validation and verification have not been completed at the time of the audit.	CAR 1:	
4.3.4 Have procedures for handling internal auditing and non-conformities been properly defined?	/1/	DR	The project has an internal quality procedure however its implementation is not yet completed.	CAR 1:	
5 Environmental Impact					
5.1.1 Are there any requirements for an Environmental Impact Assessment (EIA) by applicable legislation or	/1/	DR	There are no requirements for en		OK

MoV = Means of Verification, DR= Document Review, I= Interview, CC= Cross-Checking

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
regulation? And if yes, is an EIA approved?			Environmental Impact assessment for logging/conservation projects.		
5.1.2 Is a summary of environmental impact assessment described in the VCS PD when such an assessment is required by applicable legislation or regulation?	/1/	DR	The PD does not have a summary of the environmental impact assessment, PP is considering addressing the EIA through its CCB standard validation.	CAR 5	OK
5.1.3 Have identified environmental impacts been addressed in the project design?	/1/	DR	The PD does not have a summary of the environmental impact assessment, PP is considering addressing the EIA through its CCB standard validation.	CAR 5	OK
6 Stakeholders Comments					
6.1.1 Have relevant stakeholders been consulted?	/1/	DR	As part of its application under the CCB standard certification as well as the project application to obtain the concession all relevant stakeholders have been consulted.		OK
6.1.2 Is a summary of the stakeholder comments received provided?	/1/	DR	The PD does not have a summary of its stakeholder consultation, PP is considering addressing the EIA through its CCB standard validation.	CAR 5	OK
6.1.3 Has due account been taken of any stakeholder comments received?	/1/	DR	The PD does not have a summary of its stakeholder consultation, PP is considering addressing the EIA	CAR 5	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			through its CCB standard validation.		
6.1.4 Have mechanisms been identified in the VCS PD for on-going communication with stakeholders?	/1/	DR	The PD does not have a summary of its stakeholder consultation, PP is considering addressing the EIA through its CCB standard validation.	CAR 5	OK

Table 2 Resolution of Corrective Action Requests and Clarification Requests

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
CAR 1: Requirement: VCS Standard section 3.17.2 Quality management procedures to manage data and information shall be applied and established. Non-Compliance: Project proponent has not yet applied its QC procedures Objective evidence: • QC assessment of project area plots has not yet been completed • QC assessment for the proxy area plots has not yet been completed	4.3.1 4.3.4	a. The QC plots have been completed within the Project area: 10 additional random plots were placed in the swamp strata (marécage) to complete the stratified random assessment of QC plots in the Mai Ndombe Project Area. The additional plots have been incorporated into the Project Area analysis mentioned below. The QC inventory, 'Lac Mai Ndombe - ERA data - QC Inventory v1.2.xlsm' has been supplied to the auditor. b. > 5% of the plots (12 plots) were randomly selected within the Proxy Area and the data has been subsequently evaluated against the original Proxy Area data using the same QC procedure described below in CAR2. This	Current QC procedures appears to be unclear in its set up there by raising confusion is internal corrective actions is based on the outcome of the statistical outcome of the total sample, or statistical outcome of each individual plot assessment or a combination of the two. For example: • during the steps 1 and 2 of the procedure, the procedure clearly requires the assessment of the individual results per assessed plots, • during step 3 it seems to require that an assessment of all the plots together is done, • step 4 seems to return to the results of an individual plot. • step 5 looks again at the assessment of the whole plot, and • step 6 looks at a calculation of

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		analysis (see CAR2) has been submitted to the validator. The Proxy Area inventory, 'Lac Mai Ndombe - Proxy Area - QC Inventory v1.1.xlsm' c. The Quality Control Standard Operation Procedure has been updated to contain the additional steps and analysis technique added as a result of this CAR. The original QC SOP contained our original procedure of collecting 5% of the plot data randomly and comparing to our original inventory measurements. However, in addition to the original steps, the steps outlined in CAR2 were added, and the updated/new QC SOP (see CAR 2) has been provided to the auditor. Wildlife Works and ERA consider this to satisfy the described non-	the total number of plots to be found inside or outside the statistical errors. The documents provided (Lac Mai Ndombe - ERA data - QC Inventory v1.2.xlsm , Lac Mai Ndombe - Proxy Area - QC Inventory v1.1.xlsm, Lac Mai Ndombe PROXY - QC test v1.0.xlsx, Lac Mai Ndombe - QC test v2.0.xlsx) only look at the overall outcome of the individual plots and the T test over the whole sample. Indicates that as whole the sample is within the margin of error. However it does not show which plots under the QC procedure would be earmarked as being statistically outside the acceptable norm. Nor what actions the VP Carbon Development considers taking based on these results. CAR is Closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		conformity. Files accompanying this CAR to be supplied to the validator: 1. Lac Mai Ndombe - ERA data - QC Inventory v1.2.xlsm 2. Lac Mai Ndombe - Proxy Area - QC Inventory v1.0.xlsm 3. Annex X - Quality Control Procedure v1.4.docx	NEW CL A): The assessment team request a clarityon whether the QC is intended to be based on only: a) individual plot assessment, b) total sample size; or a combination of both. NEW CL B): The assessment team request a clarification on how the results are being reported back into the system. i.e. will Lac Mai Nombe –QC test v2.0.xlsx be used or other forms or reports.
Cont. CAR 1:		WWC Second Round Response: CL A): As the auditor will note from the revised QC SOP ‘Annex X - Quality Control Procedure v1.6.pdf’, the analysis is in fact intended to address the total QC Sample vs. the same plots	Based on the revised QA&QC procedure it is now clear that the quality controle is examined as a whole sample size and tested against the original data of the sample size. The quality controle now clearly identifies both the pass rates for the whole sample but also eny specific

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		from the original carbon inventory (i.e. 5% of the paired plots). This has always been the intent of the QC analysis; however, WW admits that the explanation of the actions taken on and the applicability of individual steps in the procedure needed to be clarified and revised. This has been done and can be evidenced in the new QC SOP. WW notes that individual plots may need to be examined as part of the overall assessment of “systematic errors” (defined in the SOP) which only become important should the project not pass the overall statistical T-test on the 5% paired plot set. CL B): As also demonstrated in the revised QC SOP, ‘ Annex X -	findings within the individual data sets of a since inventory plot to determine if specific work of undertaken in the inventory plots is based on incorrect work of a single inventory team. CAR is Closed.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		Quality Control Procedure v1.6.pdf', the results of the statistical analysis performed on the 5% paired plot set is now required to be displayed in the monitoring report. Additionally, should the project fail the statistical test, evidence of rectification (either field-based or desk-based) must be demonstrated in the monitoring report as well. Field-based rectification can either involve a deduction of the difference in QC-measured mean carbon and original carbon inventory mean or a re-measurement of the plots found to be in violation of a systematic error. Requirements are explained in detail in the revised QC SOP listed above.	
CAR 2 Requirement: VCS standard 5.2.1 point 4) The threshold for materiality with respect to omission or misstatements concerning reporting quantities shall be	1.7.1 3.1.2 3.2.2	Wildlife Works agrees that the current QC protocol may not test the data to the extent that it can be known whether or not the 1% materiality threshold is met. As such, and as a result of this stated	With the new statistical method applied by the project the project is able to demonstrate if the errors within the inventory result in an error larger or smaller than the VCS materiality tress

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
five percent except for mega-projects where it shall be one percent. Non-Compliance: Errors in measurement in the field detected during the QC protocol lead to a material mistake of more than 1% Objective evidence: QC Protocol requires that of the sample size of 5%, plots need to be re-measured only if more than half of the trees have a difference in measurement of more than 15%		non-conformity, we have elected to revise our QC desk procedure to evaluate the paired (QC vs. Original) measurements using a statistical T-test. This test was performed and documented as follows: - We use a paired T-test to infer whether the observed difference between the originally data and the QC data is significantly greater than or equal to 1% at the 90% confidence level. - We calculate the aggregated Carbon in each paired plot. Then, we subtract the paired plots from each other - yielding the paired differences. We then evaluate the standard error (SE) of these paired differences. - We evaluate both 1%	hold of 1%. The CAR is principally closed out pending the outcome of the CLs of CAR1 and updated QC procedure.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		of the average of the inventory or 1% of the QC plots in the paired sample for which we look at this difference. iii. We then define $x =$ the average of the paired differences minus the 1% value (i.e. how does the mean of the paired differences compare to each calculated 1% value (QC and Original). b. The hypotheses are H_0: x is not statistically different than zero; and H_1: x is statistically different than zero. The test is $t = (x) / (\text{standard error of the differences})$ which follows a t-distribution. The T-test indicates whether or not the differences calculated are significantly different than	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		1%. c. The results obtained show that the observed differences between Original and QC measured data do not differ from either 1% of the original data or 1% of the QC data for either the PAA or the Proxy Area (separate analyses performed and documented). Therefore, we are within the 1% de-minimus threshold set out for VCS mega-projects and no further action is required. See analysis spread sheets (for the Project Area), 'Lac Mai Ndombe - QC test v2.0.xlsx' and (for the Proxy Area), 'Lac Mai Ndombe PROXY - QC test v1.0.xlsx' d. We justify the T-test at the PLOT LEVEL because: i. The random variable in carbon	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		accounting is the plot (we calculate all statistics, including standard deviation/error at the plot level), and therefore the plot is the measurement unit. ii. The T-test is used on QC data in the CAR standard's 'Forest Project Verification Protocol'. Analysis documents for the Project Area, 'Lac Mai Ndombe - QC test v2.0.xlsx' and for the Proxy Area, 'Lac Mai Ndombe PROXY - QC test v1.0.xlsx', as well as the updated QC SOP, 'Annex X - Quality Control Procedure v1.4.docx' have been provided to the auditor.	
Cont. CAR 2			Clarification under CAR1 have

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
			satisfactory closed and resulted in no new elements under this CAR2 and the values are not considered all correct. CAR Closed
CAR 3 Requirement: Methodology PDR 3 Definition of forest used by the project proponent and its source Non-Compliance: The definition provided in the PDD is not being used in the module and the interpretation of data Objective evidence: Interpretation of the non-forest areas in the project area and proxy area are been identified by the PPs own interpretation and not that of the source provided under PDR2 3 in the PDD.	1.7.1 3.1.1	Wildlife Works examined the land cover stratification of the Project Accounting Area (PAA) and has determined that it did in fact adhere to the FAO definition of forest for the Democratic Republic of the Congo (DRC) (PD Section 2.2, PDR 3). This is evidenced by the fact that every stratum excised from the PAA - due to its non-forest status - meets the definition of <i>non-forest</i> under the FAO definition (i.e. the strata that were considered non-forest, and excised from the PAA, were <i>completely denuded</i>, such as savannah or swamp grassland). However, as a result of this non-conformance, we concur that the definition of both the PAA and the Proxy area must	The project has introduced a differentiation between the different levels of forested areas under the FAO definition. Whereby the project now applies three different forest types. primary forest, secondary forest and non-forest. Where by the FAO definition for Non-Forest remains applicable but the forest that is commercially logged but still meets the forest definition is now considered secondary forest and forest that has not yet been logged as primary forest. As a consequence the overall proxy area has decreased to 248 956 has from the original 259 070 has.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		comply with a single, identical forest/non-forest definition. Therefore, an additional stratum has been assumed to be “non-forest”, and thus excised from the PAA. This stratum is called “forêt secondaire” (secondary forest) and consists of mixed areas - in close proximity to settlements - that are characterized by agricultural fields with some remaining trees that were not burned (typically because the trees were too large, but for other various reasons as well). Considering this strata as “non-forest” results in a deviation from the definition of forest in PDR3. We have thusly chosen to modify the definition of forest to include the caveat that the “forêt secondaire” strata is now considered “non-forest”, whereas in the strict FAO definition of forest, this strata would have met	CAR Closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		the definition of forest. This revised definition of forest was thereby followed in the delineation of the Proxy Area, which consists entirely of these same mixed areas (mostly agriculture with some residual biomass remaining, and considered “non-forest”). It was noted during the field visit that the stratification of the Proxy Area was somewhat unclear to the auditor. To provide increased clarity, please consider the following detailed rendition describing how the Proxy Area was stratified, and thus why it wholly conforms to the definition of non-forest, as stipulated in the methodology (VM0009, Section 6.4, ‘Delineating the Proxy Areas’):	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		An exhaustive mining of the Landsat archive over the DRC was performed and all Landsat Enhanced Thematic Mapper Plus (ETM+) imagery acquired from 1999 to 2010 and having less than 50% metadata cloud cover (Irish, 2000) for any quarter scene were identified from meta-data; totalling 151 images for the Lake Mai-Ndombe and the Lake Tumba areas (Landsat path/row 180/060, 180/061 and 180/062). These data were downloaded from the United States Geological Survey / Distributed Active Archive Center (USGS/DAAC) at the national center for Earth Resources Observation System (EROS) as terrain corrected imagery (L1T). All images were re-projected to the Sinusoidal projection with a normal sphere (6370997-m radius) and resampled to 60 meters spatial	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		resolution. Landsat ETM+ bands 3 (0.63 to 0.69 μm), 4 (0.75-0.90μm), 5 (1.55 -1.75 μm), and 7 (2.09-2.35μm) were used for the classification. Blue and green bands were ignored because shorter wavelength visible bands are more sensitive to atmospheric effects (Ouaidrariand Vermote, 1999). Each Landsat acquisition was converted to Top-of-Atmosphere (TOA) reflectance values calculated using equations by Chander et al. (2009). To remove deleterious cloud effects, two 5-year composite images were created. All cloud and shadow free pixels were identified and per pixel median TOA observations calculated for two epochal mosaics (2000-2005 and 2006-2010) (Potapov et al.	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		2011). A Decision Tree algorithm was used to classify each epochal mosaic into 5 vegetation classes: Dense humid and semi-deciduous forest, secondary forest (or rural complexes), woodlands, grassland and bare soil. A separate decision tree classification scheme using multi-source and multi-resolution optical and radar data and topographical indices was used to derive a per pixel probability of wetlands and to create a wetland mask for the area, using the methodology developed in Bwangoy et al., 2010. Both vegetation maps were combined to produce a single vegetation map featuring seven vegetation classes with swamp forest and inundated grassland as thematic classes. Within the forest domain as defined by the Food and	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		Agriculture Organization (FAO), we define 4 different forest types: 1. The climax vegetation of the Cuvette Centrale which is a tropical evergreen and/or semi-deciduous forest, characterized by an irregular and very dense (70-100%) crown cover, composed of heterogeneous evergreen and shade tolerant species that can reach 35 to 45 meters height and that often preclude the development of understory shrubs and grasses (Mayaux et al, 2000; Devred 1958; Lebrun and Gilbert, 1954); 2. The swamp forest which represent forested wetlands located in soils that are temporally or permanently inundated; 3. “Secondary forests” which are complexes of regrowth, fallow and crops and even	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		small villages; also known as the rural complexes. This forest type dominate areas located in close proximity to villages, ports and roads with dense undergrowth and regular crown cover (Mayaux et al., 2000; Devred 1958). Within the rural complex, stands of regrowing, or secondary forest exist. However, for the present project, this vegetation class was discounted from the forest domain used for carbon estimation. 4. Woodland savannahs, existing mostly in the seasonal regions south of the project area with a very limited extent, but also present in the Proxy Area. Secondary grasslands are a significant part of the area. They occur mostly in the western part of the project area along the newly renovated road Kinshasa -	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		Nselenge, mostly in areas dominated by sandy soil. It is type #3, or “Secondary forests”, which in reality is primarily described as converted areas with some irregular regrowth, that was originally part of the PAA, but has now been (as stated above) omitted from the PAA and called “non-forest”. The Proxy Area was delineated by including only these “secondary forest” areas, thus complying with the methodological requirement for the Proxy Area to be “not forested”, thereby representing the “end-state” of deforestation. By excising these same areas from the PAA, both PAA and Proxy Areas now conform to the revised definition of forest (FAO with a caveat for “secondary forest”). Please refer to the accompanying map, ‘ PAA_final.pdf’ showing	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		the “forêt secondaire” stratum that has now been removed from the PAA, resulting in conservative PAA carbon estimates (previous PAA=259,070.3 ha; new PAA=248,956.4 ha)	
CAR 4 Requirement: VCS Standard section 3.8.1 The project start date is the date on which the project began generating GHG emission reductions or removals. Non-Compliance: Start date is not in line with official date of first financial commitment of PP Objective evidence: • PDD states that start date is 11 March 2011 whilst contract states 14 March 2011. • PDD states that Forest Concession Contract is signed on August 2011 whilst contract states 23 July 2011	1.5.1 1.6.1	Wildlife Works agrees that an incorrect date was listed in the PD for the project start date. The correct Project Start Date is the date on which the representative of the Democratic Republic of the Congo signed the official Carbon Rights Agreement. This document is dated on March 14th, 2011. The PD incorrectly stated this date as Mach 11, 2011 (there was a discrepancy between the time which the minister of environment’s office received the contract – on the 11th -and when they actually signed it - on the 14th). All documentation has been updated to reflect recognition of	Document has been updated in line with the close out response however, the assessment team found that the PD v1.61 was not fully updated as in PDR7 and 8 the start date of 11 March 2012 is still applied. CAR remains open.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		March 14th, 2011 as the official project start date. Files affected by / accompanying this CAR to be supplied to the auditor: 1. NER spread sheet (v2.16) 2. PD (v1.63) 3. MR (v1.34)	
Cont. CAR 4		WWC Response 2: Due to an oversight the project start date, end date and baseline re-evaluation were inadvertently not updated in PDR 7 and PDR 8 in v1.61 of the PD. These dates have now been updated to the revised start date of March 14th, 2011.	Revised documentation now works with the right start date and credtrng period CAR4 Closed
CAR 5	1.13.3	Wildlife Works agrees that the	PD is updated in accordance with the

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
Requirement: VCS PDD report Section 4.3 (Description of Monitoring Plan), Section 5 (Environmental Impacts) & Section 6 (Stakeholder consultation) Non-Compliance: Information provided is incomplete or absent Objective evidence: - Section 4.3: PDD provided summary of monitoring plan but no reference to existence of full monitoring plan - Section 5: PDD provides heading but no information is provided on the legal requirements to undertake and or execution of a Environmental Impacts Assessment Section 6: PDD provide heading but no information on the stakeholder consultation that the project has undertaken	5.1.2 5.1.3	sections listed in the evidence for this CAR are lacking the particular information indicated, specifically: 1. A reference to the Monitoring Plan has been placed in the PD, as well as a short description outlining its contents and purpose. 2. A description as to why an Environmental Impact Assessment is not required for Conservation Concession holders. Additionally, we cite articles 18-21 of the Prime Minister's Decree N° 08/08 of April 08 2008. 3. Stakeholder consultation is discussed in detail in the CCB PDD, section G3.8 Stakeholder Identification and Involvement in Project Design and G3.9 Steps to Communicate and Publicize the CCB Public Comment Period. References to both of these sections have been included in the VCS PD in Section 6. A full copy of the	requirements of the VCS. However, the FPIC is not defined within the list of abbreviations CAR is closed on the provision that FPIC is included in the abbreviation table.

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		CCB PDD can be delivered to the auditor upon request.	
Cont. CAR 5		WWC Response 2: The PD does not contain an abbreviation table. However, FPIC has been duly defined as “Free, Prior and Informed Consent” in the text of the document when the acronym is initially used.	Documentation has been updated CAR Closed
CAR 6 Requirement: VCS Standard 3.4.3 “....are subject to the same (or at least as conservative) baseline scenario and rationale for the demonstration of additionality as a geographic area that does include initial project activity instances.” Non-Compliance: Module is not conservative in its determination of the baseline of AGMT & BGMT. Objective evidence: The NER module	1.7.1 3.4.2 4.2.1	Wildlife Works disagrees with the Validators assessment that our method in calculating m is not conservative. We do assume that all trees of merchantable species that are larger than the current species-specific minimum harvestable diameter for the Democratic Republic of the Congo would be harvested. However, we have 3 other emission pools related to this parameter that we have chosen to conservatively exclude from the accounting.	he PD states in PDR92 “.. <i>most likely baseline scenario would have included legally sanctioned commercial harvest in the project area.</i> ” In PDR 13 it defines the legally minimum diameters per species. Finally in PDR 84 it state “ <i>Above-ground merchantable trees (AGMT): AGMT are assumed to be removed and converted to long-lived wood products by commercial logging agents. Residual AGMT biomass remaining in the baseline scenario is limited to those merchantable trees which are below the minimum</i>

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
assumes that after exploitation and logging has finished in the project area there will be no harvested commercial left within the project area which is not in line with local logging practices and experience.		Based on local expertise we know that when SOFORMA was previously logging the project area that they harvested trees to a much small diameter than what the forestry regulations allow, therefore increasing the volume of harvested timber considerably. Wildlife Works has also not included any emissions form the residual damage to standing trees from the logging operations. Additionally, Wildlife Works has chosen to not consider any emissions resulting from the logging operations, including the construction of roads and log landings. Average road density within four logging concessions in the northern Republic of Congo was 0.0010175 m/m ² (1.0175 km/km ²), with a logging history extending back 30 years. Using this density, 2,636,037.25 m of	<i>diameters specified in the logging concession, and which are conservatively assumed to remain standing after the logging event.”</i> Consequently the assessment team cannot accept the project claim that the illegal practices of the concessionaire should be accounted for any legal commercial timber left behind in the forest. The assessment team acknowledges that the Project has elected not to claim all the carbon pools that it could and therefore the overall emission reduction claimed is lower than could be when all pools are claimed. Nonetheless this refers to the overall emission total and not the one that is defined by “m”. Current PDD and Module does not justification why the m value should be considered conservative taking into account that m does not address

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		road would have been expected within the accounting area, based on a project area of 259,070 ha (or $2.59070 \times 10^9 \text{ m}^2$). According to FAO (1997), average width of ‘feeder’ logging roads is 25 m (cited within Brown et al. (2005)). Multiplying the length of road (2,636,037.25 m) by the width (25 m) results in 65,900,931.25 m^2 of road within the project area, or 6590.1 ha, which is equivalent to approximately 2.54% of the accounting area. Using the Stratified SRS Inventory v2.19, the average tCO₂e/ha for Other Living Trees is 876.747978 tCO₂e/ha. Merchantable trees are excluded as they were already counted as avoided emissions. To determine emissions of the logging roads: $876.747978 * 6590.1 =$	commercial species logged under the legal diameter. For example under PDR 19 the PDD acknowledges that “ <i>Despite the minimum diameters prescribed in the terms of logging concessions, anecdotal evidence suggests that logging companies consistently cut many merchantable trees with smaller diameters.</i>” However this is not taking into account in PDR 84 where the PP deliberately excludes this logging practice from the baseline. The PP has not demonstrated the value of m after logging based on the legal minimum diameter and tree form suitable for commercial use (i.e. straight, minimum 10 meters trunk, solid, little to no deformities etc). CAR remains open

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		5,777,856.85 tCO₂e To determine the amount of emissions per year, divide by 25 years (project length). $5,777,856.85/25 = 231,114.27$ tCO₂e/year Dividing this by the m parameter yields: $231,114.27/1,497,062.2 = 0.154$, or 15.4%. Wildlife Works believes that in consideration of these 3 additional sources of emissions that have been omitted from the accounting of m, it can be considered a conservative determination of the baseline. References Brown S., Pearson T., Moore N.,	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		Parveen A., Ambagis S., and Shock D. 2005. Impact of selective logging on the carbon stock of tropical forests: Republic of Congo as a case study. Technical Report 6 Winrock International. Available at: [http://www.winrock.org]. Clark, C.J., Poulsen J.R., Malonga R., and Elkan P.W. Jr. 2009. Logging concessions can extend the conservation estate for central African tropical forests. Conservation Biology. 25:1281-1293. Food and Agriculture Organization. 1997. Forest harvesting in natural forests of the Republic of Congo. Forest Harvesting Case Studies -07. Files accompanying this CAR to	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		be supplied to the auditor: 1. Zip archive containing references and justification for selection of the ‘m’ parameter: ‘CAR6.zip’	
Cont. CAR 6		WWC Response 2: Wildlife Works accepts the contention that logging operations, under normal circumstances, would not harvest 100% of legally merchantable trees over the forest management period. We also concur with the statement that although there is anecdotal evidence of illegal logging (below diameter limits), we have already stated that our definition of a “normal baseline scenario” respects these limits. Wildlife Works agrees that the “m” parameter should be assessed as a conservative estimate of the tree	The Project proponent has introduced a 5% discount rate to account for any timber that traditionally is left behind in a concession that would have been logged by a company. DNV considers this value to be sufficiently conservative. CAR closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		harvesting that would have occurred under the baseline scenario, and that this parameter must offset the carbon pools likely left in the forest by the commercial logging company. Wildlife Works has therefore revised the “m” parameter to include a 5% annual discount factor, thereby offsetting these pools, and thus representing a more conservative estimate for the commercial tree harvest being prevented in the project area. Additional verbiage has been inserted into the PD, section 2.4.8 ‘Determining m’ to describe this offset factor, and to further illustrate why the value chosen for <i>m</i> represents a conservative estimate of commercially harvested trees in the baseline scenario. As a result of the 5% discount, <i>m</i> has been reduced from	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		1,497,062.2 tCO ₂ -e/yr to 1,288,795.4 tCO ₂ -e/yr.	
CL 1 Requirements: Methodology PDR 4 A digital (GIS based) Model of the project area with at least the above minimum requirements for delineation of the geographic boundaries Potential non-compliance: 1. Are the correct geographic boundaries being applied 2. What is the basis of the size of the buffer around the villages Clarification: 1. PDD indicated at PDR 4 that buffer zone around villages is 2.2 km where in PDD at DPR 22 indicates that buffer is 2,5 km. Please clarify which is being used within the stratification Auditor Team seeks clarification on how the buffer zone around the village was determined.	1.8.1 2.3.1	1. Wildlife Works confirms that the correct value for the diameter of the community buffers is 2.5km. We could not find any instances of an incorrect value being used as was stated in the CL description which has led us to believe that perhaps the auditor was reviewing an outdated version of the PD during the site visit... All values in the PD for the community buffers have been confirmed to read 2.5km. 2. A buffer surrounding all communities with population over 100 was decided upon to effectively allow forest communities customary access to their traditional forest resources. The developers acknowledge that this is an	The clarification provided has confirmed the fact that the buffer around villages is 2.5 km and now consistently applied throughout the documentation of the PP. The explanation of the determination of the buffer zone is found to be line with the VCS requirements. CL closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		important step toward mitigating the risk of project failure. The local, indigenous communities use the areas immediately adjacent to them for life-sustaining resources like fuel wood and medicines. In many cases, the surrounding forest is also sacred to the communities. The very act of creating this buffer demonstrates to the communities the developers' understanding of their basic needs, historical and present practices, and shows respect for their way of life. It would be an absolute catastrophe to attempt to run a REDD project with no built-in access for communities to their forests. Different buffer sizes were experimented with, and through interviews with the communities within the	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		Project Zone, a balance between excision from the REDD project, and keeping enough area within the project to provide these same communities with adequate Carbon Benefits, was struck at circular buffers with radius 2.5km. The size of these buffers was actually deemed to be slightly larger than the current needs of the communities, but Wildlife Works and ERA wishes to account for population and inevitable future expansion into the forest. At the same time, it is the aim of the project to slow the communities' destruction of the forest through slash and burn activities. Therefore, these buffers were not designed to be unreasonably large, and the goal is for the communities to recognize them as both a	

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		physical and philosophical boundary.	
CL 2 Requirements: Methodology 6.4 Delineation of the Proxy Area Potential non-compliance: Whether areas currently classified as non-forest are indeed non-forest using the definition defined under PDR 3 of the PDD Clarification: In the PDD section 2.4.4 the PDD talks about non-forest, however, from conversations with project staff, it is unclear if the same definition is being used in determining the non-forest areas within the Proxy area. Following the close out of CAR the audit teams clarification how this has affected the proxy area in terms of size, boundaries and biomass level.	2.3.1	As stated in this CL description, the clarification response given is tied to CAR3. As stated above in our response for CAR3, it has been determined that we were in fact originally using the strict FAO definition for forest in the PAA. We have since altered our definition of forest for this project to include a caveat, stating that we are excluding an additional mixed land-use type (called “foret secondaire), which has been conservatively excised from the project carbon accounting. The total excision of land resulting from this change is ~10,000 ha. Also as a result of this revised definition of forest, the Proxy Area was found to be in full compliance with the project definition of “non-forest”	In line with the close out findings of CAR 3 the assessment team confirms that the PP now uses two different definitions for forested area to make the distinction between primary forest and secondary forest, whilst no consistently using the FOA non-forest definition for its areas classified as non-forest. CL Closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		(effectively the opposite of forest, and consisting entirely of the “forest secondaire” strata). Thus, as the Proxy Area meets the requirements stated in VM0009 - it ‘shall not be forested as of the project start date’ (VM0009 Section 6.4) and represents an area ‘to estimate residual carbon stocks in the baseline scenario’ (VM0009 Section 2.3) - it remains unchanged from its previous state as described in the PD.	
CL 3 Potential non-compliance: Potential incorrect use of parameters values Clarification: Validator requests clarification on the origin and the source of the defaults values used in: 1. Section 2.4.12.1 (default value 0.2) 2. Section 2.4.13 (default values 0.37)	2.4.5	Wildlife Works agrees that these values and defaults were not cited in the project PD and monitoring report. The PD has been updated to cite these values in text with the full reference added to the reference list in Section 5. The parameter values in the Monitoring Report Section 3.1 or 3.2, respectively, were also updated to include the appropriate	Clarification and corrections provided are considered adequate CL Closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
3. NER Module Parameters a. Milling wood waste fraction b. Sawnwood oxidation factor c. Woodbase panels oxidation factor d. Other industrial roundwood oxidation factor e. Paper and paperboard oxidation factor		citation.	
CL 4 Requirement: AFOLU Non-Permanence Risk Tool VCS Version 3 section 2.4.1 Natural risks (NR) shall be assessed using Table 10 Potential non-compliance: Risk factor being calculated incorrectly Clarification: Audit team request clarification on why the likelihood of Fire risk is considered non-applicable where there is evidence that within the vicinity of the project, there is evidence of recent run-away fires resulting from human		We have contended both in the PD and the MR that the risk of fire has been proven to be at a very low level as evidenced by historical fire records (satellite-based) and further back into history using proxy climatology. However, as a conservative measure, Wildlife Works agrees that a fire event resulting in less than 5% occurs only once every ~80 years (the proxy climatology indicates that the last time similar temperature variables were shown was in	The assessment team, accepts the revised information of the PP however it found that the new Total Risk Assessment percentage and the argumentation provided for the new fire risk was not corrected in all documentation. 3.4.2.2.1 contains original text and percentage of 24% 3.4.4 Table values do not correspond with the numbers in the file “Annex B – NER Worksheet 2.15_PUBLIC Version.xls” The same file with formulas provided in Appendix Zip

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
activities in relation to settlements & shifting cultivation.		1924). However, in order to ensure conservativeness, WW agrees to list a significant fire event as occurring once every 50 to less than 100 years and resulting in between 5 and 25% carbon loss (this is one of the choices provided by VCS in the risk of reversal tool v3.1). This results in a risk rating due to fire of 1. This new rating has been factored into the risk tool, updated in the NERs sheet and PD/MR, and the newly revised tool has been provided to the auditor. The new overall risk rating is 25%. A detailed study including evidence supporting the claim that major fire events are extremely rare in the Project Area, is given in the accompanying study provided to the auditor, 'Fire.docx'. The aforementioned detailed historical climatology will be made	file has same values as PDD but risk assessment of 24% and not 25% 1.7 Table values do not correspond with the number in the file “Annex B – NER Worksheet 2.15_PUBLIC Version.xls” The same file with formulas provided in Appendix Zip file has same values as PDD but risk assessment of 24% and not 25% CL not closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		available to the auditor upon request. Files affected by / accompanying this CL to be supplied to the auditor: 1. Annex V - Non-Permanence Risk Worksheet v1.0.xlsx 2. Study indicating that fire events are rare in the project area – ‘Fire.docx’ 3. PD (v1.63) 4. MR (v1.34)	
Cont. CL 4		WWC Response 2: Due to an oversight, the revised Non-Permanence Risk Factor was not inserted into Section 3.4.2.2. This section has now been updated to reflect the revised value of 25%. Additionally, the tables of	Updated documentation is inline with the 25% discount rate. CL4 closed

Corrective action and/ or clarification requests	Reference to Table 1	Response by project participants	Validation conclusion
		estimated ex-ante NERs in section 1.7 and 3.4.4 were not updated to reflect the revised NER values based on the changes made to the project parameters and calculations. These tables have been updated to reflect the NER values based on all 2 nd round revisions.	
CL 5 Potential non-compliance: Incorrect use of dates Clarification: A number of the documents provided by the Project are incomplete (missing pages) and/or seem to have different text from copies provided during the audit. The audit team seeks clarification on what the ruling documentation of the supportive annexes are, for example Cahier de Charge, Signed Contracts, etc.	1.4.1 1.10.1 1.11.2 1.12.1	We have verified that all Annexes and ancillary documents are complete and final. Wildlife Works has organized and have provided final copies of each document in a zip archive to the auditor, 'PD Annexes.zip'.	Files are confirmed to be complete CL Closed

Table 3 Forward Action Request

Forward action requests	Reference to Table 1	Response by project participants	Validation conclusion
FAR 1 Requirements: Methodology 3.3. Estimating Emissions from Activity-Shifting Leakage Potential Future non-compliance: Currently there is a logging moratorium which does not allow new concessions to be issued however once the moratorium is being lifted SOFORMA owners could, under another name, obtain a new concession. The Audit team requests that by the next verification, the Project Developer has collected more objective evidence that SOFORMA can no longer obtain new concessions beyond their current holdings through different companies.	3.3.1 3.3.2	Wildlife Works submits the following evidence in support of our contention that SOFORMA, the primary agent of deforestation, is and will be ineligible to obtain new concessions either using their current name, or by forming a new company with a different name: 1. A letter signed by a DRC lawyer indicating that SOFORMA may not receive any further concessions within DRC borders. 2. A letter signed by the Ministry of Environment indicating that SOFORMA may not receive any further concessions within DRC borders. 3. A copy of a signed letter from SOFORMA indicating that they not only wish to receive no further	

Forward action requests	Reference to Table 1	Response by project participants	Validation conclusion
		concessions, but that they wish to rescind multiple concessions (to lower their tax liabilities). The Ministry has refused this petition in order to continue to collect the substantial taxes collected from these concessions. Files accompanying this FAR to be supplied to the auditor: 1. Lawyer's letter 2. Ministry of Environment letter 3. Letter from SOFORMA indicating their desire to give up concessions.	
FAR 2 Requirement: AFOLU requirements v3.2 section 3.7.1 Projects with tree harvesting shall demonstrate that the permanence of their carbon stock is maintained and shall put in place management systems to ensure		Wildlife Works contends that the requirements for this FAR may not be correctly addressing the correct baseline scenario for the Mai Ndombe project. The description speaks of "Projects with tree harvesting" shall put in place	

Forward action requests	Reference to Table 1	Response by project participants	Validation conclusion
the carbon against which VCUs are issued is not lost during a final cut with no subsequent replanting or regeneration. Potential Future non-compliance: Potential risk assessment not sufficient Evidence: Current documentation does not contain much information on the manner in which the project is being managed, which processes and procedures are being followed, and how compliance can be checked once more by both internal and external auditors.		systems that ensure “carbon against which VCUs are issued is not lost during a final cut.” The Mai Ndombe project does not involve “tree harvesting” per se, nor do we understand what is referred to by “a final cut”. It appears that this verbiage is referring to a commercial harvest situation, not an avoided deforestation scenario. We speculate that perhaps the requirement refers to the communities living in the Project Zone, in that the auditor is referring to them as performing “tree harvesting”. However, there is no formal tree harvesting taking place in the project. Given the aforementioned issue, more information is requested from the auditor regarding the description of this FAR as well as	

Forward action requests	Reference to Table 1	Response by project participants	Validation conclusion
		its intention, and in particular, what type of evidence the auditor expects.	