

VCS VALIDATION OF PROJECT “LOWER ZAMBEZI REDD+ PROJECT”



Document Prepared By
DNV Climate Change Services AS

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Summary:

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

The purpose of a validation is to have a Validation/Verification Body (VVB) to assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS 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 seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Verified Carbon Units (VCU).

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.

In summary, it is DNV's opinion that the validation of the project “Lower Zambezi REDD+ Project” in Zambia, as described in the PD version 1.2 of 19 February 2014, has identified some corrective actions requests (CARs) and requests for clarification (CLs). The projects participants are invited to provide a response to the CARs and CLs listed in Table 3 of the validation protocol in Appendix A to this report.

Table of Contents

1	Introduction	5
1.1	Objective	5
1.2	Scope and Criteria	5
1.3	Level of Assurance	5
1.4	Summary Description of the Project	5
2	Validation Process	5
2.1	Method and Criteria	5
2.2	Document Review	6
2.3	Interviews	8
2.4	Site Inspections	13
2.5	Resolution of Findings	14
2.6	Forward Action Requests	15
3	Validation Findings	15
3.1	Project Details	15
3.2	Application of Methodology	18
3.3	Non-Permanence Risk Analysis	32
3.4	Environmental Impact	33
3.5	Comments by Stakeholders	33
4	Validation conclusion	34
	APPENDIX A: Validation Protocol	35

1 INTRODUCTION

1.1 Objective

The purpose of a validation is to have a Validation/Verification Body (VVB) to assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS 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 seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Verified Carbon Units (VCU).

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the project description (PD) for a proposed VCS project activity. The PD is reviewed against the criteria stated in the VCS Standard (version 3.4) and the approved baseline and monitoring methodology VM0009 (version 2.1) "Methodology for avoided deforestation". The validation was carried out in accordance with the principles and the requirements for validation contained in the VCS Validation and Verification Manual.

The validation is not meant to provide any consulting towards the project proponents. However, stated 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 project activity "Lower Zambezi REDD+ Project" meets VCS 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 VCS projects. Any clarification or corrective actions raised have been included in the validation protocol.

1.4 Summary Description of the Project

The Lower Zambezi REDD+ Project (Project) consists of 40 126 ha of privately-owned land in Rufunsa District in Zambia, which will be protected from deforestation and forest degradation activities mainly due to charcoal production and subsistence agriculture.

The core project climate accounting activities undertaken include forest carbon inventorying, modelling cumulative deforestation patterns, and soil carbon assessments. In order to support the conservation effort in the project area, a number of community project activities are undertaken to mitigate deforestation and create sustainable, scalable alternatives to deforestation, and strategic, meaningful incentives that comprise part of pay for performance programs that support forest conservation. The Project has been certified triple gold under the Climate, Community and Biodiversity Standard in 2013. Furthermore, the Project is aligned with the Government of the Republic of Zambia's (GRZ) National REDD+ Program, implemented through the Forestry Department.

2 VALIDATION PROCESS

2.1 Method and Criteria

The validation consisted of the following three phases:

- I document review

- II follow-up actions (e.g. on-site visit and telephone or email interviews)
 - III the closing out of validation findings and the issuance of the final 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 proponent

- /1/ BioCarbon Partners: *VCS-PD for project activity "Lower Zambezi REDD+ Project" in Zambia*, Version 1 dated 9 July 2013, and version 1.2 dated 19 February 2014
- /2/ BioCarbon Partners: *VCS Monitoring Report for project activity "Lower Zambezi REDD+ Project" in Zambia*, Version 1 dated 2 December 2013 and version 2.1 dated 19 February 2014
- /3/ BioCarbon Partners: *NER calculations*, 29 November 2013
- /4/ BioCarbon Partners: *Carbon data monitoring period 1*, 27 November 2013
- /5/ BioCarbon Partners: *CDM independent check*, 28 November 2013
- /6/ BioCarbon Partners: *Rufunsa management plan*, Version 2.0, 27 November 2013
- /7/ BioCarbon Partners: *Law Enforcement SOP*, 28 November 2013
- /8/ BioCarbon Partners: *Biomass sampling SOP*, 28 November 2013
- /9/ Zambia Environmental Management Agency: *Conservation, poverty reduction and partnership pilot REDD project activities in Zambia*, 14 August 2012
- /10/ Republic of Zambia: *Certificate of Title*, 17 October 2011
- /11/ Republic of Zambia: *Preliminary registration*, 17 October 2011
- /12/ Republic of Zambia: *Deed of Conservation Easement*, 14 August 2012
- /13/ Republic of Zambia: *Addendum to the Deed of Conservation Easement*, 6 November 2012
- /14/ BioCarbon Partners: *Baseline report*, Version 1, 16 October 2012
- /15/ BioCarbon Partners: *Biomass sampling leakage*, 8 June 2013
- /16/ BioCarbon Partners: *Biomass sampling leakage addendum*, 2013
- /17/ BioCarbon Partners: *Point interpretation methodology for a cumulative deforestation model*, 23 October 2013
- /18/ BioCarbon Partners: *Validation parameters*, 6 November 2013
- /19/ BioCarbon Partners: *Monitoring parameters*, 6 November 2013
- /20/ BioCarbon Partners: *Risk report calculation*, 12 December 2013
- /21/ BioCarbon Partners: *GIS data*, 29 December 2013
- /22/ BioCarbon Partners: *Leakage monitoring photographs*, July 2013
- /23/ European Space Agency: *GlobCover land cover database*, Version 2, 2008
- /24/ UN-REDD: *Preliminary study on the drivers of deforestation & potential for REDD+ in Zambia*, 2012
- /25/ BioCarbon Partners: *Cumulative deforestation model independent check*, 2013
- /26/ BioCarbon Partners: *Sustainable harvesting plan*, September 2013
- /27/ BioCarbon Partners: *Business plan for the adoption of eco-charcoal as an alternative economic activity in Chongwe district of Zambia*, October 2012
- /28/ BioCarbon Partners: *Eco-charcoal monitoring plan*, 2013

- /29/ BioCarbon Partners: *Social monitoring plan* , 24 August 2012
- /30/ Chidumayo, E.N.: *Estimating tree biomass and changes in root biomass following clear-cutting of Brachystegia-Julbernardia (miombo) woodland in central Zambia* , Environmental Conservation, 29 April 2013
- /31/ BioCarbon Partners: *Rufunsa allometry data 120 trees* , 9 July 2013
- /32/ Chidumayo, E.N.: *Forest degradation and recovery in a miombo woodland landscape in Zambia: 22 years of permanent sample plots* , Forest Ecology and Management 291 (2013) 154-161 21 November 2012
- /33/ BioCarbon Partners: *Community census and sensitization snapshot* , 5 April 2013
- /34/ Petterson: *Environmental impact statement for large scale mining activities under license number 15547-HQ-LML owned by Mwembeshi Resources limited located in Luangwa district* , 5 April 2013
- /35/ BioCarbon Partners: *Breakeven cost analysis*, December 2013
- /36/ BioCarbon Partners: *Budget and cashflow*, November 2013
- /37/ UNDP AMSCO: *Letter to offer a grant*, 2 July 2012
- /38/ Baker and McKenzie legal firm: *Investment Agreement between Biocarbon Group and Biocarbon Partners – Investment in the Lower Zambesi REDD+ Project*, 11 December 2013;
- /39/ USAID, *Confirmation of CFP award*, 8 November
- /40/ USAID, *VIGOR pre-award expenses letter*, 24 July 2013
- /41/ Peace Parks Foundation: *Letter of intent between Peace Parks Foundation and BCP*, 9 december 2013
- /42/ Sable Transport Ltd: *Attestation – Rufunsa ranch and community projects revenues and costs*, 6 December 2013
- /43/ Lindsay, P.A, et al: *The Zambian game ranching industry: scale, associated benefits and limitations affecting its development*, 18 December 2013
- /44/ Lindsay, P.A, et al: *The reasons why Zambian Game Management Areas are not functioning as ecologically or economically productive buffer zones and what needs to change for them to fulfil that role*, January 2013

1.1.1 Methodologies, tools and other guidance by the VCS or any VCS approved GHG program

- /45/ VCS: *Validation and Verification Manual*, version 3.1
- /46/ VCS: *VCS Standard*, version 3.4
- /47/ VCS: *VCS Program Guide*, version 3.5
- /48/ VCS: *Baseline and monitoring methodology VM0009*, version 2.1
- /49/ VCS: *Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities*, version 07.0.0
- /50/ VCS: *Agriculture, forestry and other land use (AFOLU) requirements*, version 3.4
- /51/ VCS: *AFOLU non-permanence risk tool*, version 3.2
- /52/ VCS: *Project description template*, version 3.2 of 8 October 2013

1.1.2 Documents used by DNV to cross-check information provided by the project proponent

- /53/ Environmental Services Inc: CCB validation report, 21 June 2013
- /54/ IPCC: Good practice guidance for LULUCF, Annex 3A.1, 2003
- /55/ VCS: Verified Carbon Standard website <http://www.v-c-s.org>, accessed in December 2013
- /56/ CCB: Climate Community and Biodiversity website <http://www.climate-standards.org>, accessed in December 2013
- ...

2.3 Interviews

DNV performed interviews with below listed persons to confirm information provided by the project proponent and/or to obtain information additional to that provided in the project description and any supporting documents.

	Date	Type	of	Name / Organization	Topic
	interview				
/57/	9-12 December 2013	☒ On-site		Wesley Roberts, BioCarbon Partners	Remote Sensing/GIS data and analyses, application of the methodology for emission reductions calculations
		☐ Face-to-face at office			
		☐ Telephone			
		☐ E-mail			
/58/	9-12 December 2013	☒ On-site		Leon-Jacques Theron, BioCarbon Partners	Project design and implementation, application of the methodology
		☐ Face-to-face at office			
		☐ Telephone			
		☐ E-mail			
/59/	9-12 December 2013	☒ On-site		Christoph Wanga, BioCarbon Partners	Biomass measurements, monitoring of biomass, soil and leakage
		☐ Face-to-face at office			
		☐ Telephone			
		☐ E-mail			
/60/	9-12 December 2013	☒ On-site		Elvin Muchimba, BioCarbon Partners	Biomass measurements, monitoring of biomass, soil and leakage
		☐ Face-to-face at office			
		☐ Telephone			
		☐ E-mail			
/61/	9-12 December 2013	☒ On-site		Andrew Tembo, BioCarbon Partners	Biomass measurements, monitoring of biomass, soil and leakage
		☐ Face-to-face at office			
		☐ Telephone			
		☐ E-mail			
/62/	9-12 December 2013	☒ On-site		Molly Christal, BioCarbon Partners	Project design and implementation, deforestation mitigation activities
		☐ Face-to-face at office			
		☐ Telephone			
		☐ E-mail			
/63/	9-12 December 2013	☒ On-site		Thor Kirchner, BioCarbon Partners	Project design and implementation

				☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/64/	9-12	December	2013	Hassan Sachedina, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Project design and implementation, right of use, additionality
/65/	9-12	December	2013	Andrew Daka, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/66/	9-12	December	2013	Hildah Mbalazi, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/67/	9-12	December	2013	Biston Nichoma, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/68/	9-12	December	2013	Darlington chipita, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/69/	9-12	December	2013	Maincey Hampejo, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/70/	11	December	2013	Christopher Nyamakao, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/71/	11	December	2013	Clinton Banda, BioCarbon Partners ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Stakeholder engagement, deforestation mitigation activities
/72/	11	December	2013	Simon Bweupe, Provincial Forest Department ☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	• Landuse regulation and enforcement, baseline, additionality
/73/	11	December	2013	Aywell Mwaluwitika, Chipungu village ☒ On-site ☐ Face-to-face at office	• Baseline, landuse practices, additionality, leakage, stakeholder consultation

				☐ Telephone ☐ E-mail	
/74/	11	December	2013	Shepart Chanshika, Kantyantya village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/75/	11	December	2013	Alex Banda, Kantyantya village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/76/	11	December	2013	Simon Mwachipata, Kantyantya village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/77/	11	December	2013	Lawford Chanshika, Kantyantya village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/78/	11	December	2013	Wilson Mudenda, Kantyantya village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/79/	11	December	2013	Alfred Tembo, Chipungu village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/80/	11	December	2013	Jackson Jere, Kantyantya village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/81/	11	December	2013	Edma Nthaimu, Chipungu village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/82/	11	December	2013	Valet Mbaluwa, Chipungu village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	
/83/	11	December	2013	Albertina Habula, Lumwwengo village	Baseline, landuse practices, additionality, leakage, stakeholder consultation
				☒ On-site ☐ Face-to-face at office ☐ Telephone	

	☐ E-mail				
/84/	11 December 2013	Christina Chendo, Chipungu village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/85/	11 December 2013	Annastazia Umpuwo, Mwaluenbe village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/86/	11 December 2013	Gladys Musopelo, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/87/	11 December 2013	Mailes Daka, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/88/	11 December 2013	Grance Phiri, Katyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/89/	11 December 2013	Rodwel Umpuwo, Mwaluwembe village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/90/	11 December 2013	Bedson Chumbo, Katyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/91/	11 December 2013	Jackson Musenda, Chipungu village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/92/	11 December 2013	David Malaya, Katyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	
/93/	11 December 2013	Manuel Chitonga, Katyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation	

/94/	11 December 2013	Adiel Mwale, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/95/	11 December 2013	Happy Mwale, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/96/	11 December 2013	Mwapatisha Ireen Chenda, Katyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/97/	11 December 2013	Mwaka Mubanga, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/98/	11 December 2013	Potifa Zunda, Kabandi village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/99/	11 December 2013	Willing Muchindu, Mwankomesha village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/100/	11 December 2013	Abisalom Mwale, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/101/	11 December 2013	Bupe Robinson, Kabandi village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/102/	11 December 2013	Grey Hanagubila	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/103/	11 December 2013	Sara Mwasa, Kantyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/104/	11 December 2013	Soneni Mudala, Chipungu village		Baseline, landuse practices,

	☒ On-site			additionality, leakage, stakeholder consultation
	☐ Face-to-face at office			
	☐ Telephone			
	☐ E-mail			
/105/	11 December 2013	Divin Twanbo, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/106/	11 December 2013	Lonika Banda, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/107/	11 December 2013	Fenezia Banda, Kantyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/108/	11 December 2013	Siamuzyali Elisabeth, Kantyantya village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/109/	11 December 2013	Nyanga Elina, Mutonka village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/110/	11 December 2013	Grace Kinyata, Chipungo village	☒ On-site ☐ Face-to-face at office ☐ Telephone ☐ E-mail	Baseline, landuse practices, additionality, leakage, stakeholder consultation
/111/	12 December 2013	Deuteronomy Kasaro, National REDD+ coordinator, Zambia Ministry of Lands, Natural Resources & Environmental Protection	☐ On-site ☒ Face-to-face at office ☐ Telephone ☐ E-mail	Land use regulation, baseline, additionality, environmental impact assessment, local stakeholder consultation, national data availability, monitoring practices

2.4 Site Inspections

From 9 December 2013 to 12 December 2013 DNV visited the project site, and on 13 December DNV interviewed Zambia's national REDD+ coordinator in Lusaka.

While on site, DNV visited 4 monitoring plots, 4 located in the project accounting area, 3 located in the overlapping portion of the reference and proxy area, and 1 located in the reference area. Plots were selected according to distance from the road and stratum so to observe all strata considered by the project (light and dense trees, grassland, fallow field and fields), but were otherwise random. In 4 of the

plots it observed the above-ground- biomass measurements performed by the plot team, and compared values to those recorded during the measurements performed for the verification of the first monitoring period, which had taken place on average one year before. For the plots located in the reference and proxy area, DNV observed the location of the plot to confirm it was “in status”, and the measurements taken to ensure that biomass monitoring only took place in the proxy area. The measurements observed confirm the correct application of the methodology, with the plot falling under the reference area only being used for soil measurements, while the plots falling under both the reference area and the proxy area being used for both biomass and soil measurements.

Regarding the measurement of above-ground biomass, DNV observed no systematic errors, detailed measurement procedures, and good knowledge of the procedures by the plot team. A number of discrepancies were noticed between the earlier measurements and the measurements carried out on site, especially in the measurement of the plot slope. However, these were noticed to have equal probability to result in an underestimation or overestimation of the corrected slope area, and no systematic bias was observed.

During the site visit, DNV interviewed BCP staff involved the project management, members of the plot team responsible for biomass and soil measurements, members of BCP involved in community engagement and implementation of the deforestation-mitigation activities, staff from the organization responsible for the identification of drivers of reforestation, leaders of the communities residing in the project area, a representative of the provincial forestry department, and several members of the local communities.

2.5 Resolution of Findings

The objective of this phase of the validation was to resolve any issues which needed be clarified prior to DNV’s conclusion on the project’s compliance with applicable VCS requirements. In order to ensure transparency a validation protocol was customised 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 organises, 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 for the project activity “Lower Zambezi REDD+ Project” is enclosed in Appendix A to this report.

Table 1 of the validation protocol documents the findings of the desk review of the project design documentation and follow-up interviews with project stakeholders. Any findings raised in Table 1 are listed in Table 2 of the protocol, and changes to the description of the project design as a result of these findings will be addressed in Table 2. Table 1 thus may not reflect all aspects of the project as described in the final project description.

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

- (a) The project proponent(s) have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The applicable VCS requirements have not been met;
- (c) 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.

The validation identified 18 CARs and 20 CLs.

2.6 Forward Action Requests

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 shall not relate to VCS requirements for registration.

The validation identified no FARs.

3 VALIDATION FINDINGS

3.1 Project Details

3.1.1 *Project type, technologies and measures implemented, and eligibility of the project*

The project activity consists of the conservation of forest so to avoid GHG emissions from deforestation and forest degradation caused by charcoal production and subsistence agriculture. This will be achieved through the implementation of a number of activities aimed at the mitigation of local drivers of deforestation /26//27/, which are listed and described in section 1.8 of the PD /1/. The project description presented in the PD is confirmed by DNV who observed the project implementation during the site visit.

A clear summary of the project description is provided in section 1.1 of the Project Document (PD). This was observed to be accurate during the site visit. VCS Sectoral scope 14 - Agriculture, Forestry, and Other Land Uses (AFOLU) has correctly been identified and reported in section 1.2 of the PD /1//46/. The project is not a grouped project. The project's scale is that of "project" in that the estimated annual Green-House Gases (GHG) emission reductions for the crediting period are 230 622 tCO₂, which is less than 300 000 tCO₂ per year /46/.

In addition to the requirements indicated in the PD template /52/ the methodology /48/ sets further requirements in terms of information to be included in the PD, called Project Description Requirements (PDR). These further requirements were assessed by the PP for applicability, and an overview of their applicability to the project is presented at the beginning of the PD /1/. DNV checked the list presented against the methodology, and the PD contents against the overview table.

It was confirmed onsite that the project's lifetime will coincide with the project's crediting period. Moreover, DNV confirmed during an interview to Zambia's REDD+ coordinator /111/ that no jurisdictional REDD+ program is yet operational in the Country.

The contact information of the project proponent is indicated in section 1.3 of the PD /1/. The PD includes contact information and roles/responsibilities for the three other entities involved in the project. These are: Musika Development Initiatives Ltd, Conservation Farming Unit; and the BioCarbon Partners Trust.

Project location:

The project location including a description of its boundaries, geographical coordinates, a map, total size and details of ownership is described in section 1.9 of the PD /1/. DNV can confirm that the map show in the PD is the same as that delineated by the project's Geographical Information System (GIS) files /21/ used for ER calculations /3//4/. The KML file with the project boundary has already been sent to the Markit registry /56/.

With regard to the requirements pertaining to the demonstration of control over the entire project area (AFOLU Requirements paragraph 3.4.2), the PP is able to demonstrate full control over the entire project area based on:

- A title deed dated 17 October 2011 /10/, which grants Sable Transport Limited a lease of 99 years starting on 1 September 2011 for the 39 951.385 ha coinciding with Farm 10800;
- The preliminary registration of a deed of conservation easement dated 30 November 2012 /11/ in which Sable Transport Limited grants BioCarbon Partners Limited the use of 39 951.385 ha belonging to Farm 10800 /12//13/. The deed of easement is effective starting from 1 October 2009.

DNV discussed land property legislation with the national REDD+ coordinator /111/ and with a representative of the local Forestry Department /72/ and concluded that the above documents establish conclusively a right of use accorded to the Project Proponent for 100% of the project area, as required by paragraph 3.4.2 of the VCS standard /46/.

The project description provided in section 1.10 of the PD /1/ includes information on the climate, geology, soils, topography vegetation and resources extraction, as such is considered complete. The information presented in this section is consistent with those reported in other publications that focused on the same area /44/.

In order to assess the project's compliance with relevant local, regional and national laws, DNV discussed the regulatory framework relevant to the project during the following interviews:

- The national legislation applicable to the project was discussed with Mr Deuteronomy Kasaro, National REDD+ coordinator /111/;
- Regional regulations were discussed with Mr Simon Bwenpe, from the local Forestry Department /72/;
- Customary laws concerning land use was discussed with the headmen of two communities neighbouring the project area.

It was confirmed through these interviews that the project complies with all relevant regulation concerning land use, and any other laws they were aware of. Moreover, DNV was also provided with a letter issued by Zambia's Environmental Management Agency on 14 August 2012 /9/ stating that the Agency has no objection with the implementation of the project activity, and the project is exempted from performing and Environmental Impact Assessment.

DNV considers the project description of the project contained in the PD to be complete and accurate. The PD complies with the relevant forms and guidance for completing the PD.

3.1.2 Project start date and crediting period

The project start date has been set on 1 October 2009. This coincides with the implementation of the fire management plan and forest patrol, and is therefore in line with the definition of starting date given in the AFOLU Requirements section 3.2 /50/, in that it is the date of implementation of "management or protection plans".

DNV discussed the definition of the starting date with the project proponent during the site visit /64/, including all documental evidence produced during the conservancy's earlier years, and confirms that:

- While the land has been under the control of the current land owner since 2001, the title deed was contested by Zambia's Ministry of Land in 2007 on the basis of allegedly defective maps used to obtain the title deed;

- In June 2009, the Government decided to re-instate the licence once the property had been surveyed again and re-registered;
- On 1st of September 2009, the shareholders agreed to invest on security, infrastructure upgrading, community support, and increased management time, starting on October 1st 2009. This has therefore been selected as starting date of the project activity;

The registration deed is dated 17 October 2011 /10/ because the title deed registration took approximately 2 years to complete. However, the government had confirmed in writing that the title could be reinstated, leading to investment on the formally contested land. For this reason, the starting date of the project activity precedes the date of the land title deed.

For compliance with the requirement set in paragraph 3.7.3 of the VCS Standard /46/, the project needs to complete validation by 1 October 2014.

The project crediting period starts on the project start date - 1 October 2009 and ends on 1 October 2039, for a total of 30 years. The chosen crediting period complies with the requirements set in paragraphs 3.8.1 and 3.8.2 of the VCS Standard /46/. Moreover, paragraph 3.8.3 is complied with since the project is registered under the Climate Community and Biodiversity Standard with a crediting period that coincides in dates and length with the crediting period indicated in the VCS PD /53/. However, it is to be noted that the Climate Community and Biodiversity (CCB) Alliance does not issue quantified emissions reductions certificates /56/.

The requirement set in paragraph 3.3.2 of the AFOLU Requirements /50/ does not apply to the project in that there are no harvesting/cutting cycles. In fact, sustainable harvesting takes place in the proxy area as part of the eco-charcoal initiative /26//27/, but it is outside the project area.

3.1.3 Ownership and other programs

The project proponent demonstrates to have a right of use based on a deed of conservation easement preliminary registered on 30 November 2012 between the land owner (Sable Transport Limited), and the project proponent (BioCarbon Partners) for an area of 39 951 ha of land for a period of 30 years /10//11//12//13//64/.

The deed of conservation easement states that:

“The Grantor hereby affirms that it is able to grant an easement for an initial term of thirty (30) years to the Grantee so that the Grantee can independently and without interference from the Grantor manage the Land in such a manner so as to preserve its natural, scientific, aesthetic, ecological, educational, scenic and recreational value and to enable the Grantee to develop a REDD+ project through the preservation of the Land leading ultimately to the trading of forest carbon on the international market by the Grantee”.

Based on this evidence, DNV confirms the project proponent has full right of use in accordance with the VCS requirements /46/. However, the total project area indicated in the PD and in the ER calculations is 40.126 ha: the discrepancy between the title deed and the project proponent boundary (175 ha) is a result of the field measurements taken in the field by the project proponent in order to digitalize the project boundary, and while every effort is made to match the title deed, the digitisation required along the rivers resulted in a different figure from the title deed boundaries. The differences between the two values is considered negligible in terms of carbon accounting as most of the areas adjacent to the two rivers have been removed from the accounting area due to slope restrictions imposed by the project proponent. From

an ownership point of view, the explanation provided is considered acceptable on the basis that interviews held on site with representatives of local authorities highlighted no issues with regard to land use rights /72/.

The project is implemented in Zambia, which has no emission trading program or binding limits on GHG emissions.

The project is registered under the CCB Standard: VO12079.00. This information is clearly provided in section 1.12 of the PD, and was verified by DNV against the CCBA website /56/. The PD states the intention of the PP not to claim credits under any other GHG programme. This was also confirmed on site with interviews with the project participant /57/ to /64/. The PD contains a confirmation by the PP that the project has not been rejected by any other GHG program. This was also confirmed on site with interviews with the project participant. /57/ to /64/.

3.1.4 Additional information relevant to the project

The project is not a grouped project.

The leakage management plan is described in section 1.13 of the PD /1/. The plan aims to address socio-economic factors that drive land-use change, and as such is in line with the requirements of paragraph 3.6.1 of the AFOLU Requirements /50/.

According to paragraph 3.6.4 of the AFOLU Requirements, market leakage assessment shall occur at validation and verification. The methodology applied by the PP requires a quantification of market-effect leakage and its inclusion in the overall Emission Reduction (ER) calculations /48/. The project proponent has however justified the choice not to consider market leakage. This decision is validated as part of the section relevant to GHG emission reductions.

The PD states that no commercially sensitive information has been excluded, but that some of the supporting information is confidential and has been made available to the Validation and Verification Body (VVB). In this regard, DNV confirms that the project proponent has submitted supporting information that is additional to the information presented in the PD.

More specifically, it was discussed during the site visit how the project proponent wishes not to publish some of the information relative to the biomass quantification carried out for the purposed of the VCS validation and verification.

According to the VCS programme definition /56/, sensitive information include scientific and technical information whose disclosure could reasonably be expected to result in a material financial loss or gain, prejudice the outcome of contractual or other negotiations or otherwise damage or enrich the person or entity to which the information relates.

3.2 Application of Methodology

3.2.1 Title and Reference

The project applies methodology VM0009 version 2.1 /48/. At the time of commencement of validation, this is the most recent valid version.

The project proponent applies a deviation to the monitoring of leakage: instead of having the Forest Inventory Team members estimating degradation visually as described by the methodology in section B.2.8.2, they will be required to georeference every felled tree in a 1 ha area. This value is then placed in a degradation category as per VM0009. The level of degradation is then compared against the average (i.e. lower boundary of the confidence level) density of trees/ha in the project accounting area. The proposed method can be considered more accurate than visually estimating degradation as indicated by the methodology, and is therefore considered acceptable.

3.2.2 Applicability

The assessment of the project's compliance with the applicability criteria of VM0009 (version 2.1) are documented in detail in the validation protocol in Appendix A to this report. Individual applicability criteria have been assessed as follows:

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

The drivers and agents of deforestation identified by the baseline report /14/ - i.e. charcoal production and the expansion of farmlands - are consistent with those indicated in section 6 of the methodology /48/, i.e. U3 – Avoided Unplanned Deforestation and Degradation (AUDD) Mosaic. The land end use in the baseline scenario is non-forest, and the project activity consists of Avoided Unplanned Deforestation and Degradation. The information presented in the baseline report was verified against publicly available studies performed in the area /30//32/, and further cross-checked by DNV through interviews held in the course of the site visit, which confirmed the drivers of deforestation identified by the project proponent /72//73/ to /110//111/.

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

The vegetation maps provided in the PD /1/ were verified against the satellite images available for the project area in 1989 and 2009 /21/. Supervised classification of forested and non-forested areas was produced to confirm that the area was on average a forest for the last 10 years. DNV was provided copies of images used for the analysis of forested area, and also observed the analysis being replicated during the site visit. /57//58/.

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

In order to demonstrate compliance with this criterion, the following analysis was performed by the project proponent /21//57//58/:

- From the shape file of the boundary of the project area the PP extrapolated the length of the perimeter;
- Deforestation was digitized the deforestation on screen by creating polygons around the pixels that showed deforestation;
- The PP created a 120m buffer, clipped the sections of the boundary that intersected the digitized deforestation, and found the length of the perimeter threatened by deforestation and degradation;

Based on the ratio between threatened perimeter and total perimeter, it was determined that the applicable baseline scenario is U3.

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

Not applicable: the relevant baseline scenario has been identified to be U3 /48/.

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

Not applicable: the relevant baseline scenario has been identified to be U3 /48/.

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.*

The baseline survey performed by the project proponent to identify drivers of deforestation /14/ indicates that deforestation is mainly driven by residents and long-term immigrants moving into the area from other regions within the country. This information was confirmed through interviews, which indicated that deforestation for the purpose of producing charcoal is mainly carried out by people taking residence in the area that clear the land to establish agricultural plots for subsistence agriculture, and in the process use the wood resulting from clearing as well as wood for the area to produce charcoal /62//65/ to /71//73/ to /110/. Although a few people recalled the sighting of commercial charcoal producers that indeed only arrived to the area for clearing woodlands and then moved on, stakeholders all agreed that these were isolated cases, and the real agent of the clearing consisted of residents.

DNV can confirm that, based on the information collected through interviews held on site, it is reasonable to assume that agents of deforestation are unlikely to shift their activities outside the activity-shifting leakage area due to the distance involved in reaching other forested areas, and the presence of a national park to the west and south of the project activity. .

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

The project proponent demonstrated compliance with this applicability criterion through an analysis of the types of soils present in the project area, using the GlobCover map as source /23/.

The GlobCover map observed on site shows no area falling under the wetland category in the project accounting area, which is the only category of soil associated with the presence of peat /57//58/.

8. *For each project accounting area, 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.*

One project accounting area and one reference area have been identified /57//58/:

Project Accounting area:

- According to the methodology /48/, the project accounting area shall be subject to deforestation in the baseline scenario, i.e. the project accounting area is defined based on the constraints to deforestation associated with the identified agents and drivers of deforestation. The project accounting area was calculated by firstly excluding non-forested portions of the project area (bare earth and grassland). Then, all steeply sloped lands (greater than 20 degrees slope) which are inaccessible to agents of deforestation were excluded. The slope of 20 degrees was selected based on the assessment of the maximum slope of fields in the reference area. For clarity, steep slopes were excluded only if the size of the polygon to be excluded is greater than 0.4 ha, in which case a 15 m buffer was created around these polygons. The project accounting area comprises 33 338 ha of the total project area of 40 126 ha. A 30m Digital Elevation Model (ASTER Global Digital Elevation Model Version 2) was used in the slope calculation. An area of illegal settlements around the northern boundary (the encroachment area in the PD) was likewise removed from the project accounting area;
- The project accounting area shall be forested as of the project start date, and for 10 years prior to the project start date. This has been validated as part of the applicability criteria of the methodology, and was found to be OK;
- The geographic or physical boundaries of the project area shall be clearly delineated using, at minimum, the following:
 - Name of the project area (compartment or allotment number, local name);
 - Digital maps of the area, including geographic coordinates of vertices
 - Total land area;
 - Details of ownership, including user rights and/or land tenure information;
 - Topography;
 - Roads;
 - Major rivers and perennial streams;
 - Land use/vegetation type classification.

The PD provides all the information listed above.

Reference area:

The requirements listed in section 6.7.1 of the methodology /48/ and applicable to the reference area for baseline type U3 were assessed as follows:

- The reference area is in the same general region as the project accounting area. This is apparent by the maps of the project accounting area and reference area provided by the PP;
- The PP can demonstrate that in 1989, during the reference period, the reference area contained at least as much forest as the project accounting area /21/: 42 217 ha for the reference area and 33 338 ha for the project accounting area. Considering their relative areas, the reference area presented forest cover on 85% of its extension, while the project accounting area on 83%. The map provided in the PD was verified against the shape files with satellite images from 1989 for the reference area (selected among the images available for the reference period because of its good quality– no cloud cover), and for 2009. Unsupervised classification for forested and non-forested areas was performed to produce figure 13 in the PD. The analysis performed shows that in absolute terms, the reference area at one point contained as much forest as the project accounting area;
- The reference area and the project accounting area do not overlap,

- The reference and project accounting area share the same environmental political boundaries, with the difference that the reference area hosts permanent communities, while the project accounting area – being privately owned – does not contain settlements apart from the encroachment area which has been excluded from the project accounting area;

With regard to the requirements listed in Appendix D of the methodology /48/: 1. the reference area and project accounting area share proximity to the agents of deforestation in that the agents reside in or close to the reference area, and the project accounting area is adjacent to the reference area; 2. Agents of deforestation have access to the reference area, which in terms of land use regulation is subject to customary laws which allow land clearance for charcoal production and agriculture; 3. The reference area shares the same socio-economic and cultural conditions to the project area, since they are adjacent to each other and fall within the same political and administrative boundaries; 4. The area has similar land configuration to the project accounting area in terms of topography and land cover. In fact, the delimitation of the reference area excluded slopes that are greater than 20 degrees; the two areas had the same area of forest cover at some point in time during the historic reference period.

9. *As of the project start date, historic imagery of the reference area exists with sufficient coverage to meet the requirements of section 6.7.4 of this methodology.*

The project proponent is able to demonstrate 100% coverage for all the years considered (1984, 1989, 18992, 1999, 2002, and 2009 /21/) because only the points for which 100% coverage existed were selected for the Cumulative Deforestation Model (CDM) /57/.

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.*

The project meets this criterion /26//27//62//65/ to /71/, and a detailed description of activities implemented to mitigate deforestation is provided in the PD /1/.

These were verified as part of the Climate Community and Biodiversity verification procedure, which resulted in the project achieving the gold standard under that scheme /53/.

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

The project participant has set up monitoring plots in both the leakage area and proxy area, and has been collecting data from both areas. The monitoring plots located in the proxy and reference area were visited by DNV during the site visit. The criterion is therefore met. /48/

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

Not applicable: logging is not included in the baseline scenario, which is U3 – avoided unplanned deforestation and degradation. /48/

13. This methodology is applicable to all geographies, however if SOC is a selected carbon pool and the default value from section 6.18.1.1 is selected then the project must be located in a tropical ecosystem.

Soil organic carbon is selected as a carbon pool, which is acceptable as Zambia falls into a tropical climate. Moreover, the default value for Soil Organic Carbon (SOC) is only used to estimate ER at the time of validation, and that site-specific values will be used as part of the request for issuance .

3.2.3 Project Boundary

The project's system boundaries consist of the selected carbon pools, located within the project's spatial boundaries, in the course of the project's temporal boundaries. The three components of the project boundary have been defined as follows:

- The carbon pools included consist of above-ground other (non-merchantable tree), below-ground other (non-merchantable tree), and soil organic carbon. An assessment of the selection of carbon pools is presented further below;
- Spatial boundaries: the project area consists of 40 126 ha of privately-owned land in Rufunsa District, Zambia. This is confirmed by the documentation establishing land title;
- Temporal boundaries: see CL6

One GHG has been identified by the project proponent: CO₂ from fluxes in carbon pools. This is the only gas the methodology requires projects to consider /48/.

	GHGs involved	Description
Baseline emissions	CO ₂	Major pool considered in the project scenario
Project emissions	CO ₂	Major pool considered in the project scenario
Leakage	CO ₂	Major pool considered in the project scenario

As for the selected carbon pools, they are:

- above-ground other (non-merchantable tree) - AGOT;
- below-ground other (non-merchantable tree) - BGOT; and
- soil organic carbon (SOC).

The selected pools comply with the requirements set in the methodology section 5.4, and a justification for their selection is presented in the PD. The system boundaries for the project comply with the project boundaries stipulated by the applied baseline methodology /48/. No other emission sources not foreseen by the methodology have been identified.

The identified boundary and selected sources and gases are justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions occurring within or outside the project boundary as a result of the implementation of the proposed project activity which are not addressed by VM0009 version 2.1 and which are expected to contribute more than 1% of the overall expected average annual emission reduction.

3.2.4 Baseline Scenario

The baseline scenario identified is U3: Avoided Deforestation and Degradation (Mosaic) /1/. The project proponent has followed the decision tree provided by the methodology /48/ to identify the baseline scenario, and based on a Participatory Rural Appraisal partly described by the project's baseline report /14/, and the spatial analysis of the project area /21/, and concluded that the appropriate baseline scenario is unplanned deforestation and degradation of type U3. The determination of the baseline scenario has been carried out in accordance with the methodology. The scenario determination was not based on assumptions, but on the information collected from the consultation of local stakeholders /62//65/ to /71/.

The baseline scenario identified was confirmed to DNV by the national REDD+ coordinator /111/, as well as by a representative of the local Forestry Department /72/. No objections were raised with regard to relevant national and/or sectoral policies.

The baseline scenario identified by the project proponent is compatible with the information presented in publications /32/, including one produced by the UN REDD+ programme in 2012 and titled "Preliminary study on the drivers of deforestation & potential for REDD+ in Zambia" /30/. The study concludes that "the ultimate drivers of forest cover loss are agricultural expansion, charcoal production, fuel wood collection, wood harvesting, settlements, fires, urbanization, industrialization, urban expansion and livestock grazing".

The approved baseline methodology has been correctly applied to identify a complete list of realistic and credible baseline scenarios, and the identified baseline scenario most reasonably represents what would occur in the absence of the proposed VCS project activity.

All the assumption and data used by the project proponent(s) are listed in the PD and/or supporting documents. All documentation relevant for establishing the baseline scenario and correctly quoted and interpreted in the PD. Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable. Relevant national and/or sectoral policies and circumstances are considered and listed in the PD.

3.2.5 Additionality

The project applies the "Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities version 3.0 /49/. The use of the tool is required by the methodology /48/, and the PP has applied the most recent valid version of the tool.

Regulatory requirements were discussed by DNV with both the national REDD+ coordinator and with a representative of the local Forest Department /72//111/. Both confirmed that the project activity is not mandated by any law in the host country.

The demonstration of additionality is based on an investment analysis, and in particular on a simple cost analysis.

3.2.5.1 Identification of alternatives to the project activity

A number of credible alternative land uses, not prevented by regulation, have been identified and listed in the PD. These are:

- Forest land converted to cropland if the necessary permits are acquired. This is a credible land use scenario as this is not an illegal activity on private land in Zambia and the project area is suitable for dryland and irrigated crops.
- Forest land converted to other land through logging of trees and subsequent charcoal production if the necessary permits are acquired. This is a credible land use scenario as the title deed holder can apply for such a permit from the Department of Forestry and considering the demand for charcoal it will be a viable alternative.
- Forest land converted to other land through clear felling and converting to grassland and using the land for cattle ranching. This is a legal and credible activity. Clearing the forests will also destroy tsetse flies, allowing for cattle to be ranched. Cattle ranching is a highly successful land use in Zambia.
- Forest land remaining forest land by managing through managing the property as a game ranch, that is, the pre-project land use. This is a credible, legal land use.
- Protecting the forests in the project area through registering it as an AFOLU REDD activity under VCS. This is a credible land use scenario.
- Forest land converted to cropland caused by unplanned, uncontrolled, unsustainable charcoal production, followed by conversion to agricultural fields and unmanaged late season fires. It is thus, generally a stepwise process where an area is cleared for charcoal to generate an income and it is then farmed to provide food. This is a credible scenario as this land use is already taking place within the boundary of the project area. This is the baseline scenario and justification for the selected baseline is provided below.

The list is considered adequate in that it comprises the minimum land use alternatives required by the tool, i.e. 1. continuation of the pre-project scenario and 2. project activity on the land within the project boundary performed without being registered as the VCS AFOLU project (managing the property as game ranch), while no legal requirements exist for alternative land-uses. Moreover, the list is considered complete based on the information collected by DNV from stakeholders during the site visit.

DNV considers the listed alternatives to be credible and complete.

3.2.5.2 Investment analysis

Choice of approach

Although the land is currently managed as a commercial game farm, no revenues are generated from this activity. Therefore the project participant selected the simple cost analysis as the most appropriate way to demonstrate additionality.

Benchmark selection

Not applicable for a simple cost analysis.

Input parameters

The current land use does not generate revenues as a game farm, but has incurred in costs to secure the land, establish a road network in the ranch and community areas, the construction of dams and water points, a tourism camp, land management infrastructure, forest management security, and community development projects.

The information presented in the PD is supported by:

1. A declaration made by the Director of Sable Transport Ltd, the land owner, stating that despite the cost of earlier attempts to create a viable wildlife tourism product, which were required to secure the land, establish a road network in the ranch and community areas, the construction of dams and water points, a tourism camp, land management infrastructure, forest management security, and community development projects, the only revenues generated have come from the signing of the carbon agreement with the project developer /42/;
2. Two reviews of the Zambian game ranching industry, funded by the Wildlife Producers Association of Zambia, which confirms the information presented in the PD on the fact that the project is not common practice, and that the industry faces significant barriers /43//44/.

Calculation and conclusion

The current land management, which is the only alternative where the forest is not felled but kept standing, is not economically viable.

Sensitivity analysis

Not applicable for a simple cost analysis.

3.2.5.3 Barrier analysis

No barrier analysis has been presented.

3.2.5.4 Common practice analysis

The analysis demonstrates that the project is not common practice in the region.

3.2.5.5 Additionality - Conclusion

In conclusion, it is sufficiently demonstrated that the project is not a likely baseline scenario and that emission reductions resulting from the project are additional.

3.2.6 Quantification of GHG Emission Reductions and Removals**Quantification of baseline emissions:**

Baseline emissions are quantified through baseline emission models, i.e. the Biomass Emissions Model (BEM) and the Soil Emission Model (SEM). Both models rely on an underlying model for deforestation in the reference area, which is determined by parameters α , β , γ and θ . Since the project achieved a good model fit without the need to consider covariates, parameters γ and θ have been excluded.

Deforestation model:

The deforestation model /3//4/ was run and discussed during the site visit.

Inputs to the model: The project proponent used available Landsat imagery spanning from 1984 to 2009 /21/. Although deforestation has been observed in the area since the 1970s, 1984 was selected as starting date of the historic reference period because it coincides with the first suitable available image in the Landsat archive. This choice is acceptable based on the indications of paragraph 6.7.2.2. of the methodology /48/, which for baseline scenario U3 allows the historic reference period to be determined based on available satellite imagery if no important events are identified. Despite the entry into force of regulation between the 1970s and 1984, DNV confirmed through interviews /72//111/ that poor enforcement of regulation has been common, and hence it is reasonable to conclude that no important events have taken place that would impact the selection of the historic reference period.

6 largely cloud free images were selected for this purpose, and are listed in table 12 of the PD /1/. These comply with the requirements of the methodology in that they allowed 100% double coverage of the area was achieved with a total of 2 600 points (the 1984 image contained some cloud, but points covered by the clouds were removed by the population data set). Moreover, the selected images have a spatial resolution of 30 m, and are located evenly across the reference period (as presented in figure 15 of the PDD). The 2600 points showing 100% double coverage and distributed systematically on a grid largely exceed the minimum sample size of 300 required by the methodology, and were thus selected as the ultimate sample size used to estimate β . These were classified as either forest or non-forest throughout the reference period. The points all had equal weighting because no corrections for cloud cover were needed. Conversion from forest (0) to non-forest (1) starts becoming apparent in 1989, while in 1984 all points were “forest”. The 2 600 points observed and classified over six historical images resulted in the logistic function being calculated using 15 600 state observations during the historic reference period.

Calculation: The model applies a generalized linear regression model. The best fit was obtained by the project proponent by not considering weights. Only this option resulted in the regression being “highly significant” (99%). The good fit of the model is also apparent from the graphical representation of the model presented in figure 17 of the PD /1/. Computing α and β based on the sample deforestation data returned respectively a value of 0.5791768 and 0.0003653.

For quality purposes, the project proponent has developed detailed procedures for forest state point interpretation /17/. Moreover, the assessment of forest state observation was subject to an independent check performed by a third party /27/.

Baseline scenarios for selected carbon pools:

The methodology defines the different baseline scenarios applicable to each carbon pool based on the overall baseline scenario identified /48/.

For the project activity, the following applies:

- Above-ground other (non-merchantable tree) with U3 as baseline scenario: the above-ground portions of trees that are not commercially viable are assumed to be converted to an emission first in the stratum with the lowest carbon stocks and last in the stratum with the highest carbon stocks;
- Below-ground other (non-merchantable tree); with U3 as baseline scenario: below-ground biomass is conservatively assumed to be partially removed or to begin decay at the time of deforestation, first in the stratum with the lowest carbon stock and last in the stratum with the lowest carbon stocks;

- Soil organic carbon with U3 as baseline scenario: it is assumed that soil carbon will deplete to the SOC measured in the proxy area after a long period of time.

Given these premises, the baseline model comprises the biomass emissions model, the soil emissions model, and the model for spatial component that is unique to baseline scenario U3.

Biomass Emissions Model: for U3, this is given by equation F.4 of the methodology /48/. The PD indicates this was calculated to be 1 564 437 tCO₂e /1/. Since the validation takes place at the time of the first verification of the project, equation F.15 is also applied in the ER calculation spreadsheet for the first monitoring period /3//4/. The baseline scenario average carbon stock in selected carbon pools has been calculated for AGOT and BGOT using equations F.18 and F.23 of the methodology. Cumulative emissions from BGB are calculated using equation F.29 of the methodology, while the carbon not decayed in BGB is calculated by applying equations F.30 and F.31.

In addition to the biomass model above, the methodology indicates that baseline scenario U3 requires the application of the decay emissions model described by equation F.24 to estimate the carbon not decayed in BGB (equation F.9), as well as in SOC (equation F.10).

Soil Emissions Model: for U3, this is given by equation F.7 of the methodology. The PD indicates this was calculated to be 856 870 tCO₂e. The cumulative baseline emissions from SOC for U3 are calculated with equation F.26 and F.28 of the methodology, while the cumulative carbon not decayed in SOC is given by equation F.32. The use of equation F.26, which the methodology indicates as current baseline emissions from SOC for type P baseline scenarios, is considered acceptable since this equation is in line with equations F.15 and F.30 which are not indicated as only applicable to a scenario of type P.

The application of the cumulative emission model through equations F.4 (baseline emission model), F.7 (soil emission model), F.9 (decay emission model for SOC), and F.10 (decay emission model for BGB) was achieved using the Visual Basic programming language. The application of equations F.4, F.7, and F.9 was checked and found correct. For the application of the remaining equations (i.e. F.18, F.23, F.24, F.28, F.29, F.31, and F.32), DNV checked the source data collected during the monitoring period, and the calculations that resulted in the final carbon figures.

The methodology requires the baseline emissions model to be based on data collected in the reference area, which used to estimate deforestation parameters, and in the proxy area, where residual biomass is measured. The methodology sets a number of requirements for the identification of each of the areas, but the selection is otherwise left to the discretion of the PP. The selection of the project accounting area and of the reference area was validated as part of the assessment of the applicability of the methodology. The proxy area has been validated as follows:

Proxy area:

- Is located in the same general region as the project area, in fact it is located within the reference area and as such shares the same drivers of deforestation of the reference and project accounting areas: this is confirmed by the maps provided by the PP /21/ and was observed on site;
- On average, the proxy area shall not be forested as of the project start date: this is confirmed by the maps provided by the PP /21/ and was observed on site;
- It shall have a similar landscape configuration to the project accounting area: This is demonstrated by the maps provided by the PP (and shown in the PD) and was observed on site;

- The proxy area shall not be altered after the first monitoring period:

In addition to the spatial boundaries of the three areas required to calculate baseline emissions, the methodology requires the identification of a reference period, which serves as temporal boundary to the calculations. The reference period has already been validated as part of the input parameters to the baseline emission model.

The methodology has a number of requirements for minimizing uncertainty, which are outlined in section 6.7.9. The PP has made every attempt to mitigate uncertainty, which resulted in a forest state interpretation document /17/, an independent check of point interpretation by associates from the Cape Peninsula University of Technology /27/, and the identification and correction of systematic errors using the Cumulative Deforestation Model developed for ArcGIS by Wildlife Works /57//58/.

Moreover, the methodology requires the project proponent to determine deductions for uncertainty, which are described by equation F.52 of the methodology, and equation F.14 to calculate the approximate estimate of uncertainty for the logistic function of deforestation.

Quantification of project emissions:

According to the methodology /48/, project emissions are calculated from the events of biomass consumption through forest fires, burning, logging or other disturbances. The calculation of project emissions is outlined in equation F.40 of the methodology, but since logging does not take place in the baseline, and the carbon stored in wood products has therefore been excluded, the project emissions consist of GHG emissions from burning, and have been calculated using equation F.41 /1/.

Emissions from burning have been calculated to be 0 because, during the first 5 years of the project activity, no tree biomass has been lost because of fires. It was in fact observed on site that the miombo vegetation which cover the project area has evolved a strong resistance to fire: fire events in this area are frequent, but they rarely reach the intensity required to kill the trees. DNV observed several burned areas within the project area, and observed no dead trees. Moreover, DNV checked measurements performed in monitoring plots which showed evidence signs of burning, and observed that the trees recorded still coincided with the records collected as part of the previous monitoring exercise, which had taken place on average one year before the site visit. The project proponent has subscribed to a number of satellite alert services targeting forest fires, and maintains staff patrolling the area for security purposes that are able to report fire occurrences. DNV considers the choice of estimating project emissions due to fire as 0 justified.

The calculation of project emissions has been based on the data recorded in the first five years of the project lifetime, and is not based on assumptions.

Quantification of leakage:

The methodology contemplates two types of leakage /48/: activity-shifting leakage and market-effect leakage. As the project does not cause a reduction in the supply of commodities since no merchantable tree is present in the area /72/, market-effect leakage has been excluded from the calculations. Leakage emission are therefore estimated using the leakage emission model described by the methodology in equation F.45, and calculated cumulative emissions from activity-shifting leakage with equation F.44. The resulting activity-shifting leakage emissions were insignificant, and have therefore considered 0.

The insignificance of leakage emissions was verified with georeferenced, dated pictures provided by the project participant for each monitoring plot in the leakage area, and cross-checked through interviews with the plot team responsible for the measurements, which confirmed that no deforestation activities had been observed in the leakage area.

In addition to the quantification of leakage emissions, the methodology requires project proponents to implement leakage mitigation strategies. The project proponent has initiated several activities that involve the communities residing in the project area. These described in the PD, and were verified through interviews with the local communities. DNV confirmed the information presented in the PD in relation to deforestation mitigation activities implemented by the project proponent.

The methodology has been designed in such way as to require the identification of an activity-shifting leakage area and a market-effect leakage area. The methodology sets a number of requirements for the identification of each of the areas, but the selection is otherwise left to the discretion of the PP. The project proponent only identified an activity-shifting leakage since no market-effect leakage is foreseen. The selection of this area is assessed here:

Activity-shifting leakage area:

- the activity-shifting leakage area is in the same general region as the project area: in fact, the area identified to monitor leakage is adjacent to the project area;
- As of the project start date, the activity-shifting leakage area is entirely forested and no larger than the project accounting area: the activity-shifting accounting area (which excludes steep slopes) extends to 27 806 ha, compared to the 33 338 ha of the project accounting area. Moreover, at the time of the starting date of the project was entirely forested;
- the leakage area is located in the same proximity to the agents of deforestation, as it shares with the project area approximately the same distance from the reference area where the agents of deforestation originate;
- agents of deforestation have access to the area: in fact there are a number of roads going through this area which the project proponents use to access the monitoring plots located in the area;
- the area shares the same political boundaries with the project area;
- It has similar landscape configuration to the project accounting area.

The project participant calculated activity-shifting leakage based on the data recorded in the first 5 years of the crediting period, which presented no uncertainties.

Summary of net GHG emission reductions or removals:

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average *ex-ante* estimation of emission reduction conservatively calculated to be 210 316 CO₂e per year for the selected crediting period.

All assumptions and data used by the project proponent(s) are listed in the PD and/or supporting documents, including their references and sources. All documentation used by the project proponent(s) as the basis for assumptions and source of data is correctly quoted and interpreted in the PD. All values used in the PD are considered reasonable in the context of the proposed VCS project activity. The baseline methodology has been applied correctly to calculate project emissions, baseline emissions, leakage and emission reductions. All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the PD.

3.2.7 Methodology Deviations

The project proponent applies a deviation to the monitoring of leakage: instead of having the Forest Inventory Team members estimating degradation visually as described by the methodology in section B.2.8.2, they are required to georeference every felled tree in a 1 ha area /15//16/ /59/ to /61/. This value is then placed in a degradation category as per VM0009. The level of degradation is then compared against the average (i.e. lower boundary of the confidence level) density of trees/ha in the project accounting area. The proposed method can be considered more accurate than visually estimating degradation as indicated by the methodology, and is therefore considered acceptable.

The proposed deviation is considered acceptable.

3.2.8 Monitoring Plan

3.2.8.1 Parameters determined ex-ante

The assessment of individual parameters determined ex-ante is presented in the validation protocol in Appendix A.

3.2.8.2 Parameters monitored ex-post

The project proponent has submitted an Appendix with the list of parameters that will be monitored as part of the project activity. See CAR16.

3.2.8.3 Management system and quality assurance

The methodology requires the project to be monitored through fixed area plots coupled with allometric equations for the estimation of carbon stocks in trees, in addition to soil samples collected from soil cores or pits /48/. Moreover, the project proponent is requested to monitor the activities implemented to reduce deforestation.

The different elements of the monitoring plan were validated as follows:

Sample plots: the selection of sample plots for this project was validated against the requirements set in Appendix B of the methodology /48/. Since the project validation takes place at the time of the first verification, DNV could observe the location and settings of the monitoring plots, as well as measurements procedures /59/ to /61/. Plots have been located throughout the project area, reference area, proxy area and leakage area to achieve stratified random sampling. 196 permanent monitoring plots have been established within the project area, of which 59 also included soil sampling and 10 were located within the encroachment area. The proxy area hosts 46 plots, while the reference area includes 84 plots including soil sampling plots. 30 plots are located in the leakage area. DNV visited 8 plots located in the project, reference and proxy area, and can confirm they are marked inconspicuously in line with the requirements of the methodology. The influence of periodic variations is mitigated by having measurements taking place throughout the years instead of at a specific time of the year /58/. The optimum number of biomass plots was reached based on the coefficient of variation, confidence level and acceptable error, which was set at 0.05 /4/. The calculation resulted in the final figure of 181, which was eventually exceeded by the project proponent.

Allometric equation: the project applies an allometric equation which was developed specifically for miombo forest through destructive sampling which took place in close proximity to the project area /30/. DNV visited the site where trees were selected for the destructive sampling, and confirms that the site

shares the same environmental conditions with the project area. It consists of a logarithmic linear model for estimating tree biomass (both above-ground and below-ground). The allometric equation was based on 113 trees from 19 species, with a Diameter at Breast Height (DBH) of 2 to 39 cm. The sample exceeds the minimum sample of 30 trees required by the methodology. The model was later extended to cover a range of diameters spanning from 3.2 to 54.8 cm, as it was observed by the author of the publication that no significant dispersion of deviation occurred with the increased range /30/. The range has been respected by the project participant, who does not include in the AGOT pool trees that are less than 15 cm in diameter, and has capped biomass calculations to 55 cm /4/. The model has been demonstrated by the author of the publication to have a mean error of +/- 2.98%. Moreover, the project proponent compared the predicted biomass for 120 trees with the actual measurements performed as a crosscheck, and demonstrates that the model underestimated actual biomass by 10% /32/. The allometric equation is therefore considered acceptable. The calculation of below-ground biomass was based on the root:shoot ratio indicated in the allometric equation: it was found that actual root:shoot ratios were 0.54 and 0.77 in old-growth and regrowth woodland, respectively, and the PP selected the most conservative value of the two – 0.54.

Soil samples: The NER estimation is based on the selected 0.2 default value for λ_{SOC} .

Deforestation mitigation activities: The project proponent has submitted a monitoring plan for the eco-charcoal initiative /28/, as well as a social monitoring plan to monitor the performance of the deforestation mitigation activities over time /29/.

The project proponent has produced clear and detailed Standard Operating Procedures (SOP) for field-based carbon stock assessment /8/. DNV could observe the implementation of the SOP on site, and confirms that the plot team has good knowledge of the procedures and excelled skills to carry out the work /59/ to /61/.

The SOP for field-based carbon stock assessment also includes instructions on how to complete electronic datasheets while in the field. The data thus recorded are automatically sent to the project proponent's office for analysis. The electronic forms include a number of quality control measures, so that recording errors are minimized. The monitoring operations observed on site by DNV showed that the data management, QA and QC procedures are sufficient to ensure that the emission reductions achieved by the project can be reported ex-post and verified.

It was confirmed on site that all monitored data required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of Verified Emission Reductions (VERs), for this project activity, whichever occurs later /58//64/.

It is DNV's opinion, that the project proponent(s) are able to implement the monitoring plan.

3.3 Non-Permanence Risk Analysis

The non-permanence risk rating performed by the project proponent has been assessed in table 2 of Appendix A.

The analysis returned a risk of 14%, which will constitute the basis for the determination of the carbon buffer.

3.4 Environmental Impact

Zambia has requirements for the performance of environmental impact assessments. However, the project proponent has received a letter from the Zambia Environmental Management Agency (ZEMA) /9/, which states that the project is not required to undertake an environmental impact assessment, and that ZEMA has no objection with the project proponent proceeding with the implementation of the project activity. Compliance with applicable laws was also confirmed to DNV by the national REDD+ coordinator from Zambia's Ministry of Lands, Natural Resources & Environmental Protection /111/.

Interviews held on site highlighted no foreseen adverse environmental effects /73/ to /110/. Moreover, the CCB validation report confirms exceptional net positive biodiversity impacts /53/

No environmental impact assessments have been undertaken, but interviews held on site highlighted no foreseen adverse environmental effects. DNV could determine that no significant environmental impacts are expected from the project activity.

3.5 Comments by Stakeholders

The project proponent conducted extensive sensitization and consultation of all local communities /62//65/ to /71/. More specifically, the project proponent carried out 70 sensitization meetings, achieving a sensitization rate of 86% /44/. Approval rates for the project based on votes reached 96%, while approval rates obtained through surveys achieved 100% approval /44/. These data were cross-checked by interviewing resident communities during the site visit /73/ to /110/. All confirmed they felt sufficiently informed about the project activity and had a positive opinion of it.

DNV considers the local stakeholder consultation carried out adequately.

4 VALIDATION CONCLUSION

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

The purpose of a validation is to have a Validation/Verification Body (VVB) to assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant VCS 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 seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of Verified Carbon Units (VCU).

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 baseline and monitoring methodology VM0009 (version 2.1) “Methodology for avoided deforestation”.

The project activity consists of the conservation of forest so to avoid GHG emissions from deforestation and forest degradation caused by charcoal production and subsistence agriculture. As a result, the project results in reductions of CO₂ emissions that 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 210 316 tCO₂e per year over the selected 30 year crediting period. 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.

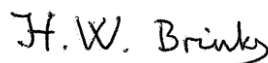
The monitoring plan provides for the monitoring of the project's emission reductions. The monitoring arrangements described in the monitoring plan are feasible within the project design, and it is DNV's opinion that the project proponent(s) are able to implement the monitoring plan.

In summary, it is DNV's opinion that the project activity “Lower Zambezi REDD+ Project” in Zambia”, as described in the VCS project description, version 1.2 dated 19 February 2014, meets all relevant VCS requirements and correctly applies the baseline and monitoring methodology VM0009 (version 2.1) “Methodology for avoided deforestation”. Hence, DNV requests the registration of the project as a VCS project activity.

The validation was based on the information made available to DNV and the engagement conditions detailed in this report. DNV cannot be held liable by any party for decisions made or not made based on this report.



Francesca Feller
Validator
DNV Oslo, Norway



Hendrik W. Brinks
Approver,
DNV Climate Change Services AS

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APPENDIX A: VALIDATION PROTOCOL

Table 1 Requirements Checklist

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
1 DESCRIPTION OF PROJECT ACTIVITY					
1.1 Summary Description of the Project					
<i>1.1.1 Does Section 1.1 of the VCS PD include a clear summary description of the project?</i>	/1/ /52/	DR CC	Yes. A clear summary of the project description is provided in section 1.1 of the Project Document (PD). This was observed to be accurate during the site visit.		OK
1.2 Sectoral Scope and Project Type					
<i>1.2.1 Are the sectoral scopes applicable to the project clearly described? Is the project a grouped project?</i>	/1/ /52/	DR CC	VCS Sectoral scope 14 - Agriculture, Forestry, and Other Land Uses (AFOLU) has correctly been identified and reported in section 1.2 of the PD. The project is not a grouped project.		OK
1.3 Project Proponent					
<i>1.3.1 Are contact information and roles/responsibilities for the project proponent(s) clearly and properly described?</i>	/1/ /52/	DR CC	The contact information of the project proponent is indicated in section 1.3 of the PD.		OK
1.4 Other Entities Involved in the Project					
<i>1.4.1 Have contact information and roles/responsibilities for any other entities involved in the development of the project been provided?</i>	/1/ /52/	DR CC	The PD includes contact information and roles/responsibilities for the three other entities involved in the project. These are: Musika Development Initiatives Ltd, Conservation Farming Unit; and the BioCarbon Partners Trust. An indication of their role in the project is also provided.		OK
1.5 Project Start Date					

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
1.5.1 <i>What is the project start date? Has the project start date been defined correctly?</i>	/1/ /10/ /11/ /12/ /13/ /50/ /64/	DR CC I	The project start date has been set on 1 October 2009. This coincides with the implementation of the fire management plan and forest patrol, and is therefore in line with the definition of starting date given in the AFOLU Requirements section 3.2, in that it is the date of implementation of “management or protection plans”. DNV discussed the definition of the starting date with the project proponent during the site visit, including all documental evidence produced during the conservancy’s earlier years, and confirms that: - While the land has been under the control of the current land owner since 2001, the title deed was contested by Zambia’s Ministry of Land in 2007 on the basis of allegedly defective maps used to obtain the title deed; - In June 2009, the Government decided to re-instate the licence once the property had been surveyed again and re-registered; - On 1st September 2009, the shareholders agreed to invest on security, infrastructure upgrading, community support, and increased management time, starting on October 1st 2009. This has therefore been selected as starting date of the project activity; - The registration deed is dated 17 October 2011 because the title deed registration took approximately 2 years to complete. However, the government had confirmed in writing that the title could be reinstated,		OK

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			leading to investment on the formally contested land. For this reason, the starting date of the project activity precedes the date of the land title deed. For compliance with the requirement set in paragraph 3.7.3 of the VCS Standard, the project needs to complete validation by 1 October 2014.		
1.6 Project Crediting Period					
1.6.1 <i>What is the crediting period start date? Is the date determined appropriately? What is the selected crediting period?</i>	/1/ /6/ /46/ /56/ /64/	DR CC I	The project crediting period starts on the project start date - 1 October 2009 and ends on 1 October 2039, for a total of 30 years. CL1: The project proponent is requested to clarify in the PD whether the crediting period is fixed or renewable. The chosen crediting period complies with the requirements set in paragraphs 3.8.1 and 3.8.2 of the VCS Standard. Moreover, paragraph 3.8.3 is complied with since the project is registered under the Climate Community and Biodiversity Standard with a crediting period that coincides in dates and length with the crediting period indicated in the VCS PD. However, it is to be noted that the Climate Community and Biodiversity (CCB) Alliance does not issue quantified emissions reductions certificates. CL2: According to paragraph 3.3.1 of the VCS AFOLU Requirements, projects shall have a credible and		CL1 CL2

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			robust plan for managing and implementing the project over the project crediting period. The project proponent has submitted the conservancy's ecological management plan. However this extends to the period spanning from 2013 to 2017. The PP is requested to submit evidence that a robust plan for managing and implementing the project over the project's entire crediting period is also in place. The requirement set in paragraph 3.3.2 of the AFOLU Requirements does not apply to the project in that there are no harvesting/cutting cycles. In fact, sustainable harvesting takes place in the proxy area as part of the eco-charcoal initiative, but it is outside the project area.		
1.7 Project Scale and Estimated GHG Emission Reductions or Removals	/1/	DR			
<i>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?</i>	/1/ /46/	DR CC	The project's scale is that of "project" in that the estimated annual Green-House Gases (GHG) emission reductions for the crediting period are 230 622 tCO ₂ , which is less than 300 000 tCO ₂ per year.		OK
1.8 Description of the Project Activity					
<i>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 the lifetime of the project activity(s)?</i>	/1/ /26/ /27/ /48/ /52/ /62/ /65/ to	DR CC I	The project activity consists of the conservation of forest so to avoid GHG emissions from deforestation and forest degradation caused by charcoal production and subsistence agriculture. This will be achieved through the implementation of a number of activities aimed at the mitigation of local drivers of deforestation, which are listed and described in section 1.8 of the PD. The		CAR1 CAR2

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/71/ /111/		project description presented in the PD is confirmed by DNV who observed the project implementation during the site visit. It was confirmed onsite that the project's lifetime will coincide with the project's crediting period. CAR1: According to the VCS PD template section 1.8, AFOLU projects are requested to indicate if the project is located within a jurisdiction covered by a jurisdictional REDD+ program. This information is missing from the PD. The project proponent is requested to include in section 1.8 of the PD all the information listed in the PD template. DNV confirmed during an interview to Zambia's REDD+ coordinator that no jurisdictional REDD+ program is yet operational in the Country. In addition to the requirements indicated in the PD template the methodology sets further requirements in terms of information to be included in the PD, called Project Description Requirements (PDR). These additional requirements were assessed by the PP for applicability, and an overview of their applicability to the project is presented at the beginning of the PD. DNV checked the list presented against the methodology, and the PD contents against the overview table, and confirms the PD meets the requirements set in		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			the methodology in terms of information contents, except for the following: - PDR 23, 24, and 25 are not consistent; - The applicability of PDR 68 is not clear; - PDR 110 and 111 are not related to market leakage, and are included in the main body of the PD; CAR2: The information presented in the PD in the table of PD requirements is not correct on the following points: - PDR 23, 24, and 25 are not consistent; - The applicability of PDR 68 is not clear; - PDR 110 and 111 are not related to market leakage, and are included in the main body of the PD; The project proponent is requested to correct the information presented in this table.		
1.9 Project Location					
1.9.1 <i>What is the project location and geographic boundaries if applicable?</i>	/1/ /10/ /11/ /12/ /13/ /21/ /56/ /64/ /72/	DR CC I	The project location including a description of its boundaries, geographical coordinates, a map, total size and details of ownership is described in section 1.9 of the PD. DNV can confirm that the map show in the PD is the same as that delineated by the project's Geographical Information System (GIS) files used for ER calculations.		CL3

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/111/		The KML file with the project boundary has already been sent to the Markit registry. With regard to the requirements pertaining to the demonstration of control over the entire project area (AFOLU Requirements paragraph 3.4.2), the PP is able to demonstrate full control over the entire project area based on: - A title deed dated 17 October 2011, which grants Sable Transport Limited a lease of 99 years starting on 1 September 2011 for the 39 951.3850 ha coinciding with Farm 10800; - The preliminary registration of a deed of conservation easement dated 30 November 2012 in which Sable Transport Limited grants BioCarbon Partners Limited the use of 39 951.385 ha belonging to Farm 10800. The deed of easement is effective starting from 1 October 2009. CL3: The total project area indicated in the PD and in the ER calculations is 40.126 ha. However, the Title Deed submitted indicates an area of 39 951.3850 ha. The project participant is requested to clarify the reason behind this discrepancy. DNV discussed land property legislation with the national REDD+ coordinator and with a representative of the local Forestry Department and concluded that the above documents establish conclusively a right of use accorded to		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			the Project Proponent for 100% of the project area, as required by paragraph 3.4.2 of the project standard.		
1.10 Conditions prior to Project Initiation					
1.10.1 <i>Are the conditions prior to project initiation clearly described in the VCS PD with supporting evidence?</i>	/1/ /32/ /44/	DR CC	The project description provided in section 1.10 of the PD includes information on the climate, geology, soils, topography vegetation and resources extraction, as such is considered complete. The information presented in this section is consistent with those reported in other publications that focused on the same area.		OK
1.10.2 <i>Is it demonstrated that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction?</i>	/1/ /52/	DR CC	CAR3: According to the VCS PD template section 1.10, project proponents shall demonstrate that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction. The project proponent is requested to include this information in the PD.		CAR3
1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks					
1.11.1 <i>What relevant local, regional and national laws, statutes and regulatory frameworks are identified?</i>	/1/ /9/ /72/ /111/	DR CC I	In order to assess the project's compliance with relevant local, regional and national laws, DNV discussed the regulatory framework relevant to the project during the following interviews: - The national legislation applicable to the project was discussed with Mr Deuteronomy Kasaro, National REDD+ coordinator; - Regional regulations were discussed with Mr Simon Bwenpe, from the local Forestry Department;		OK

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			- Customary laws concerning land use was discussed with the headmen of two communities neighbouring the project area. It was confirmed through these interviews that the project complies with all relevant regulation concerning land use, and any other laws they were aware of. DNV was also provided with a letter issued by Zambia's Environmental Management Agency on 14 August 2012 stating that the Agency has no objection with the implementation of the project activity, and the project is exempted from performing and Environmental Impact Assessment.		
1.11.2 <i>Is the project in compliance with all the relevant local, regional and national laws, statutes and regulatory frameworks identified? How is this demonstrated?</i>	/1/ /9/ /72/ /111/	DR CC I	The interviews held on site by DNV confirmed that the project complies with all relevant local, regional and national laws.		OK
1.12 Ownership and Other Programs					
1.12.1 <i>Is evidence of right of use proper?</i>	/1/ /10/ /11/ /12/ /13/ /64/	DR CC I	The project proponent demonstrates to have a right of use based on a deed of conservation easement preliminary registered on 30 November 2012 between the land owner (Sable Transport Limited), and the project proponent (BioCarbon Partners) for an area of 39 951 ha of land for a period of 30 years. The deed of conservation easement states that: "The Grantor hereby affirms that it is able to grant an easement for an initial term of thirty (30) years to the Grantee so that the Grantee can		CL4

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			independently and without interference from the Grantor manage the Land in such a manner so as to preserve its natural, scientific, aesthetic, ecological, educational, scenic and recreational value and to enable the Grantee to develop a REDD+ project through the preservation of the Land leading ultimately to the trading of forest carbon on the international market by the Grantee”. Based on this evidence, DNV confirms the project proponent has full right of use in accordance with the VCS requirements. CL4: The project proponent is requested to clarify which of the options listed under paragraph 3.11.1 of the VCS Standard and relative to the different types of rights of use applies to the project activity.		
<i>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?</i>	/1/	DR	The project is implemented in Zambia, which has no emission trading program or binding limits on GHG emissions.		OK
<i>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?</i>	/1/ /53/ /56/	DR CC	The project is registered under the CCB Standard: VO12079.00. This information is clearly provided in section 1.12 of the PD, and was verified by DNV against the CCBA website.		OK
<i>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</i>	/1/ /57/ to	DR I	The PD states the intention of the PP not to claim credits under any other GHG programme. This was also confirmed on site with interviews		OK

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<i>emission reductions or removals claimed under the VCS Program, or that any such credit has been or will be cancelled from the relevant program?</i>	/64/		with the project participant.		
1.12.5 <i>Has the project been rejected by any other GHG programs? Where the project has been rejected, has the relevant information been provided?</i>	/1/ /57/ to /64/	DR I	The PD contains a confirmation by the PP that the project has not been rejected by any other GHG program. This was also confirmed on site with interviews with the project participant.		OK
1.13 Additional Information Relevant to the Project					
1.13.1 <i>For grouped projects, have eligibility criteria for inclusion of new instances of each project activity been properly identified?</i>	/1/	DR	Not applicable: this is not a grouped project.		OK
1.13.2 <i>Where applicable, has the leakage management plan and implementation of leakage and risk mitigation measures been properly described?</i>	/1/ /26/ /27/ /48/ /50/	DR CC	The leakage management plan is described in section 1.13 of the PD. The plan aims to address socio-economic factors that drive land-use change, and as such is in line with the requirements of paragraph 3.6.1 of the AFOLU Requirements. According to paragraph 3.6.4 of the AFOLU Requirements, market leakage assessment shall occur at validation and verification. The methodology applied by the PP requires a quantification of market-effect leakage and its inclusion in the overall Emission Reduction (ER) calculations. The project proponent has however justified the choice not to consider market leakage. This decision is validated as part of the section relevant to GHG emission reductions.		OK
1.13.3 <i>Has any commercially sensitive information been excluded from the public version of the VCS PD? If yes, can the excluded information be justified as</i>	/1/ /46/ /56/	DR	The PD states that no commercially sensitive information has been excluded, but that some of the supporting information is confidential and		CL5

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<i>being commercially sensitive?</i> <i>Has the items to which such information pertains been described?</i>			has been made available to the Validation and Verification Body (VVB). In this regard, DNV confirms that the project proponent has submitted supporting information that is additional to the information presented in the PD. More specifically, it was discussed during the site visit how the project proponent wishes not to publish some of the information relative to the biomass quantification carried out for the purposed of the VCS validation and verification. According to the VCS programme definition, sensitive information include scientific and technical information whose disclosure could reasonably be expected to result in a material financial loss or gain, prejudice the outcome of contractual or other negotiations or otherwise damage or enrich the person or entity to which the information relates. CL5: The project proponent is requested to clarify which information is to be considered commercially sensitive in accordance with the VCS programme definitions, and how the treatment of this information by the project proponent complies with the requirements of paragraph 3.18.2 of the Project Standard and paragraph 4.2.11 of the VCS Registration and Issuance Process. Section 1.13.3 of the PD needs to be updated to reflect the project proponents' choice of how to handle sensitive		

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				information.		
2 APPLICATION OF A BASELINE AND MONITORING METHODOLOGY						
2.1 Methodology applied						
2.1.1	<i>Does the project apply an approved methodology and the correct and valid version thereof?</i>	/1/ /48/	DR CC	The project applies methodology VM0009 version 2.1. At the time of commencement of validation, this is the most recent valid version.		OK
2.1.2	<i>Has any methodology deviation been applied? If yes, has the deviation been justified? Deviations from the applied methodology are permitted where they represent a deviation from the criteria and procedures relating to monitoring or measurement set out in the methodology (i.e. deviations are permitted where they relate to data and parameters available at validation, data and parameters monitored, or the monitoring plan). Methodology deviations shall not negatively impact the conservativeness of the quantification of GHG emission reductions or removals, except where they result in increased accuracy of such quantification. Deviations relating to any other part of the methodology shall not be permitted.</i>	/1/ /15/ /16/ /59/ to /61/	DR CC I	The PP applies a deviation to the monitoring of leakage: instead of having the Forest Inventory Team members estimating degradation visually as described by the methodology in section B.2.8.2, they will be required to georeference every felled tree in a 1 ha area. This value is then placed in a degradation category as per VM0009. The level of degradation is then compared against the average (i.e. lower boundary of the confidence level) density of trees/ha in the project accounting area. The proposed method can be considered more accurate than visually estimating degradation as indicated by the methodology, and is therefore considered acceptable.		OK

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2.2 Applicability of methodology (and modules) <i>Insert a row for each applicability criteria of the applied methodology (and tools)</i>	/1/ /52/	DR CC	CAR4: According to the VCS PD template, section 2.2 of the PD needs to include a demonstration and justification of how the project activity meets each of the applicability conditions of the methodology and tools applied by the project. In the PD, the applicability conditions of the tools have not been considered. The project proponent is requested to include this information in section 2.2. of the PD.		CAR4
2.2.1 <i>How was it validated that project complies with the following applicability criteria: This methodology was developed for avoiding deforestation and assumes that degradation and deforestation occur as a result of land use conversion to non-forest. The drivers and agents of deforestation in the baseline scenario must be consistent with those described in section 6 of this methodology and the end land use in the baseline scenario is non-forest. Accordingly, the project activity must be APD or AUDD</i>	/1/ /14/ /32/ /48/ /72/ /73/ to /110/ /111/	DR CC I	The drivers and agents of deforestation identified by the baseline report in the baseline scenario are consistent with those indicated in section 6 of the methodology, i.e. U3 – Avoided Unplanned Deforestation and Degradation (AUDD) Mosaic. The land end use in the baseline scenario is non-forest, and the project activity consists of Avoided Unplanned Deforestation and Degradation. The information presented in the baseline report was verified against publicly available studies performed in the area, and further cross-checked by DNV through interviews held in the course of the site visit, which confirmed the drivers of deforestation identified by the project proponent.		OK
2.2.2 <i>How was it validated that project complies with the following applicability criteria: Land in all project accounting areas has qualified as forest on average across the project accounting areas as defined by FAO 2010 or as defined by the residing designated national authority (DNA) for the project country for a minimum of 10 years prior to</i>	/1/ /21/ /48/ /57/ /58/	DR CC I	The vegetation maps provided in the PD were verified against the satellite images available for the project area in 1989 and 2009. Supervised classification of forested and non-forested areas was produced to confirm that the area was on average a forest for the last 10		OK

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<i>the project start date.</i>			years. DNV was provided copies of images used for the analysis of forested area, and also observed the analysis being replicated during the site visit.		
2.2.3 <i>How was it validated that project complies with the following applicability criteria: In the case of baseline types that are type U, unplanned deforestation, deforestation exists at some point within 120 meters of the perimeter of the project accounting area such that without the implementation of the project activity the project accounting area would be immediately threatened by the agent of deforestation as of the project start date.</i>	/1/ /21/ /48/ /57/ /58/	DR CC I	In order to demonstrate compliance with this criterion, the following analysis was performed by the project proponent: - From the shape file of the boundary of the project area the PP extrapolated the length of the perimeter; - Deforestation was digitized the deforestation on screen by creating polygons around the pixels that showed deforestation; - The PP created a 120m buffer, clipped the sections of the boundary that intersected the digitized deforestation, and found the length of the perimeter threatened by deforestation and degradation; - Based on the ratio between threatened perimeter and total perimeter, it was determined that the applicable baseline scenario is U3.		OK
2.2.4 <i>How was it validated that project complies with the following applicability criteria: In the case of baseline type U1, at least 25% of the project area boundary is within 120 meters of deforestation and at least 25% of the project area is adjacent to the reference area.</i>	/1/ /48/	DR CC	Not applicable: the relevant baseline scenario has been identified to be U3.		OK
2.2.5 <i>How was it validated that project complies with the following applicability criteria: In the case of baseline type U2, at least 25% of the</i>	/1/ /48/	DR CC	Not applicable: the relevant baseline scenario has been identified to be U3.		OK

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
<i>project area boundary is within 120 meters of deforestation</i>						
2.2.6	<i>How was it validated that project complies with the following applicability criteria:</i> <i>If foreign agents have been identified as an agent of deforestation, they are unlikely to shift their activities outside the activity-shifting leakage area.</i>	/1/ /14/ /48/ /62/ /65/ to /71/ /73/ to /110/	DR CC I	The baseline survey performed by the project proponent to identify drivers of deforestation indicates that deforestation is mainly driven by local residents, and that current residents who originally came from outside the project area have been established in the current location for several years, and cannot reasonably be considered foreign agents. This information was confirmed through interviews, which indicated that deforestation for the purpose of producing charcoal is mainly carried out by nationals. Only one person out of the many interviewed indicated foreign agents of deforestation (from Tanzania), but this was an isolated information, which was not in line with feedback received by the majority of stakeholders interviewed. DNV can confirm that, based on the information collected through interviews held on site, it is reasonable to assume that agents of deforestation are unlikely to shift their activities outside the activity-shifting leakage area.		OK
2.2.7	<i>How was it validated that project complies with the following applicability criteria:</i> <i>The project accounting area(s) shall not contain peat soil.</i>	/1/ /23/ /48/ /57/ /58/	DR CC I	The project proponent demonstrated compliance with this applicability criterion through an analysis of the types of soils present in the project area, using the GlobCover map as a source.		OK

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			The GlobCover map observed on site shows no area falling under the wetland category in the project accounting area, which is the only category of soil associated with the presence of peat.		
2.2.8 <i>How was it validated that project complies with the following applicability criteria: For each project accounting area, 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.</i>	/1/ /21/ /48/ /57/ /58/	DR CC I	One project accounting area and one reference area have been identified. <u>Project Accounting area:</u> - According to the methodology, the project accounting area shall be subject to deforestation in the baseline scenario, i.e. the accounting area is defined based on the constraints to deforestation associated with the identified agents and drivers of deforestation. The accounting area was calculated by firstly excluding non-forested portions of the project area (bare earth and grassland). Then, all steeply sloped lands (greater than 20 degrees slope) which are inaccessible to agents of deforestation were excluded. The slope of 20 degrees was selected based on the assessment of the maximum slope of fields in the reference area. For clarity, steep slopes were excluded only if the size of the polygon to be excluded is greater than 0.4 ha, in which case a 15 m buffer was created around these polygons. The accounting area comprises 33 338 ha of the total project area of 40 126 ha. A 30m Digital Elevation Model (ASTER Global Digital Elevation Model Version 2) was used in the slope calculation. An area of illegal settlements around the		OK

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			northern boundary (the encroachment area in the PD) was likewise removed from the accounting area; - The accounting area shall be forested as of the project start date, and for 10 years prior to the project start date. This has been validated as part of the applicability criteria of the methodology, and was found to be OK; - The geographic or physical boundaries of the project area shall be clearly delineated using, at minimum, the following: - Name of the project area (compartment or allotment number, local name); - Digital maps of the area, including geographic coordinates of vertices - Total land area; - Details of ownership, including user rights and/or land tenure information; - Topography; - Roads; - Major rivers and perennial streams; - Land use/vegetation type classification. The PD provides all the information listed above. <u>Reference area:</u> The requirements listed in section 6.7.1 of the methodology /48/ and applicable to the reference area for baseline type U3 were assessed as follows: • The reference area is in the same general region as the project accounting area. This		

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			is apparent by the maps of the project accounting area and reference area provided by the PP; • The PP can demonstrate that in 1989, during the reference period, the reference area contained at least as much forest as the project accounting area /21/: 42 217 ha for the reference area and 33 338 ha for the project accounting area. Considering their relative areas, the reference area presented forest cover on 85% of its extension, while the project accounting area on 83%. The map provided in the PD was verified against the shape files with satellite images from 1989 for the reference area (selected among the images available for the reference period because of its good quality– no cloud cover), and for 2009. Unsupervised classification for forested and non-forested areas was performed to produce figure 13 in the PD. The analysis performed shows that in absolute terms, the reference area at one point contained as much forest as the project accounting area; • The reference area and the project accounting area do not overlap, • The reference and project accounting area share the same environmental political		

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			boundaries, with the difference that the reference area hosts permanent communities, while the project accounting area – being privately owned – does not contain settlements apart from the encroachment area which has been excluded from the project accounting area; With regard to the requirements listed in Appendix D of the methodology /48/: 1. the reference area and project accounting area share proximity to the agents of deforestation in that the agents reside in or close to the reference area, and the project accounting area is adjacent to the reference area; 2. Agents of deforestation have access to the reference area, which in terms of land use regulation is subject to customary laws which allow land clearance for charcoal production and agriculture; 3. The reference area shares the same socio-economic and cultural conditions to the project area, since they are adjacent to each other and fall within the same political and administrative boundaries; 4. The area has similar land configuration to the project accounting area in terms of topography and land cover. In fact, the delimitation of the reference area excluded slopes that are greater than 20 degrees; the two areas had the same area of forest cover at some point in time during the historic reference period.		
2.2.9 <i>How was it validated that project complies with the</i>	/1/	DR	The project proponent is able to demonstrate		OK

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<i>following applicability criteria: As of the project start date, historic imagery of the reference area exists with sufficient coverage to meet the requirements of section 6.7.4 of this methodology.</i>	/21/ /48/ /57/	CC I	100% coverage for all the years considered (1984, 1989, 18992, 1999, 2002, and 2009) because only the points for which 100% coverage existed were selected for the Cumulative Deforestation Model (CDM).		
2.2.10 <i>How was it validated that project complies with the following applicability criteria: 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.</i>	/1/ /26/ /27/ /48/ /53/ /62/ /65/ to /71/	DR CC I	The project meets this criterion, and a detailed description of activities implemented to mitigate deforestation is provided in the PD. These were verified as part of the Climate Community and Biodiversity verification procedure, which resulted in the project achieving the gold standard under that scheme.		OK
2.2.11 <i>How was it validated that project complies with the following applicability criteria: The project proponent has access to the activity-shifting leakage area(s) and proxy area(s) to implement monitoring (see sections 8.3.2.1 and 6.4), or has access to monitoring data from these areas for every monitoring event.</i>	/1/ /48/	DR CC	The project participant has set up monitoring plots in both the leakage area and proxy area, and has been collecting data from both areas. The monitoring plots located in the proxy and reference area were visited by DNV during the site visit. The criterion is therefore met.		OK
2.2.12 <i>How was it validated that project complies with the following applicability criteria: If logging is included in the baseline scenario and a market-effects leakage area is required per section 8.3, then the project proponent has access to or monitoring data from the market-effects leakage area for every monitoring event (see section 8.3.3).</i>	/1/ /48/	DR CC	Not applicable: logging is not included in the baseline scenario, which is U3 – avoided unplanned deforestation and degradation.		OK

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2.2.13 <i>How was it validated that project complies with the following applicability criteria: This methodology is applicable to all geographies, however if SOC is a selected carbon pool and the default value from section 6.18.1.1 is selected then the project must be located in a tropical ecosystem.</i>	/1/ /48/	DR CC	Soil organic carbon is selected as a carbon pool, which is acceptable as Zambia falls into a tropical climate. Moreover, the default value for Soil Organic Carbon (SOC) is only used to estimate ER at the time of validation, and that site-specific values will be used as part of the request for issuance. See CL8 in section 2.6.5 of this checklist.		OK
2.2.14 <i>Is the selected baseline on of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology?</i>	/1/ /48/	DR CC	The selected baseline is described in the methodology.		OK
2.3 Project boundary					
2.3.1 <i>What are the project's system boundaries (components and facilities used to mitigate GHGs)? Are they clearly defined?</i>	/1/ /48/	DR CC	The project's system boundaries consist of the selected carbon pools, located within the project's spatial boundaries, in the course of the project's temporal boundaries. The three components of the project boundary have been defined as follows: - The carbon pools included consist of above-ground other (non-merchantable tree), below-ground other (non-merchantable tree), and soil organic carbon. An assessment of the selection of carbon pools is presented further below; - Spatial boundaries: the project area consists of 38 781 ha of privately-owned land in Rufunsa District, Zambia. This is confirmed by the documentation establishing land title; CL6:		CL6

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				The project proponent is requested to indicate the temporal project boundary in the PD in accordance with the requirements of the methodology, i.e. project start date and project end date.		
2.3.2	<i>Which GHG sources are identified for the project? Does the identified boundary cover all possible sources linked to the project activity? Give reference to documents considered to arrive at this conclusion.</i>	/1/ /48/	DR CC	One GHG has been identified by the PP: CO₂ from fluxes in carbon pools. This is the only gas the methodology requires projects to consider. As for the selected carbon pools, they are: - above-ground other (non-merchantable tree); - below-ground other (non-merchantable tree); and - soil organic carbon. The selected pools comply with the requirements set in the methodology section 5.4, and a justification for their selection is presented in the PD.		OK
2.3.3	<i>Do the system boundaries for the project as described in the PD fully comply with the project boundaries stipulated by the applied baseline methodology?</i>	/1/ /48/	DR CC	The system boundaries for the project comply with the project boundaries stipulated by the applied baseline methodology.		OK
2.3.4	<i>Does the project involve other emissions sources not foreseen by the methodologies that may question the applicability of the methodology? Do these sources contribute with more than 1% of the estimated emission reductions of the project?</i>	/1/ /48/	DR CC	No other emission sources not foreseen by the methodology have been identified.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
2.4 Baseline scenario determination and description / Identification of alternatives to the project activity <i>Ensure that the evaluation of all alternatives provided in the PD and required by the methodology and also possible alternatives/offshoots of alternatives are discussed. Check that all alternatives required to be considered by the methodology are included in the final PD. If baseline alternatives required to be considered by the methodology are considered not applicable, please assess the justification for this.</i>	/1/ /52/	DR CC	CAR5: The information presented in section 2.4.2 to 2.4.9 of the PD discusses the quantification of baseline emissions rather than the identification of the baseline scenario, and therefore logically belong to section 3.1 of the PD “Quantification of GHG emission reductions and removals”. The PP is requested to move the information in the correct section of the PD.		CAR5
2.4.1 <i>Which baseline scenarios have been identified? Is the list of baseline scenarios complete? Does the list include as one of the options that the project activity is undertaken without being registered as a proposed project activity? Does the list contain all plausible alternatives which are viable means of supplying the comparable outputs or services that are to be supplied by the proposed project activity?</i>	/1/ /14/ /21/ /48/ /62/ /65/ to /71/	DR CC I	The baseline scenario identified is U3 (AUDD Mosaic), The PP has followed the decision tree provided by the methodology to identify the baseline scenario, and based on a Participatory Rural Appraisal partly described by the project’s baseline report, and the spatial analysis of the project area, and concluded that the appropriate baseline scenario is unplanned deforestation and degradation of type U3.		OK
2.4.2 <i>Could the project activity in absence of the VCS or other baseline alternatives also be implemented by other entities than the project proponent(s)? If so, has this also been included in the list of baseline scenarios?</i>	/1/ /48/	DR CC	Not applicable: this is not an option foreseen by the applied methodology, which only considers a list of 5 baseline scenarios.		OK
2.4.3 <i>How have the other baseline scenarios been eliminated in order to determine the baseline?</i>	/1/ /48/ /52/	DR CC	CAR6: The information provided in the PD does not comply with the requirements sent in the PD template: “Where the procedure in the applied methodology involves several steps, describe how each step is applied and clearly document the outcome of each step”. The PD does not		CAR6

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
				indicate how the decision tree has been followed to identify the baseline scenario.		
2.4.4	<i>What is the baseline scenario?</i>	/1/ /48/	DR CC	U3 – Avoided Unplanned Deforestation and Degradation Frontier or Mosaic		OK
1.1.1	<i>Is the determination of the baseline scenario in accordance with the guidance in the methodology?</i>	/1/ /48/	DR CC	The determination of the baseline scenario has been carried out in accordance with the methodology, (See CAR6).		CAR6
2.4.5	<i>Has the baseline scenario been determined using conservative assumptions where possible?</i>	/1/ /14/ /62/ /65/ To /71/	DR CC I	The scenario determination was not based on assumptions, but on the information collected from various sources.		OK
2.4.6	<i>Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies? Does the baseline scenario comply with all applicable and enforced legislation?</i>	/1/ /72/ /111/	DR I	The baseline scenario identified was confirmed to DNV by the national REDD+ coordinator, as well as by a representative of the local Forestry Department. No objections were raised due to relevant national and/or sectoral policies.		OK
2.4.7	<i>Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?</i>	/1/ /30/ /32/	DR CC	The baseline scenario identified by the project proponent is compatible with the information presented in a publication produced by the UN REDD+ programme in 2012 and titled “Preliminary study on the drivers of deforestation & potential for REDD+ in Zambia”. The study concludes that “the ultimate drivers of forest cover loss are agricultural expansion, charcoal production, fuel wood collection, wood harvesting, settlements, fires, urbanization, industrialization, urban expansion and livestock grazing”.		OK
2.4.8	<i>Is the baseline determination adequately</i>	/1/	DR	The baseline determination is adequately		OK

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<i>documented in the PD?</i>		/30/ /32/	CC	described in the PD.		
2.5 Additionality determination						
2.5.1	<i>What approach/tool does the project use to assess additionality? Is this in line with the methodology?</i>	/1/ /48/ /49/ /52/	DR CC	The project applies the “Tool for the demonstration and assessment of additionality in VCS agriculture, forestry and other land use (AFOLU) project activities version 3.0. The use of the tool is required by the methodology, and the PP has applied the most recent valid version of the tool. CAR7: The VCS PD template indicates that where a project method is applied to demonstrate additionality and the procedure in the applied methodology or tool involves several steps, the PD must describe how each step is applied and clearly document the outcome of each step. The demonstration of additionality as presented in the PD does not comply with the step-wise approach of the tool.		CAR7
2.5.2	<i>Have the regulatory requirements correctly been taken into account to evaluate the project activity and the alternatives?</i>	/1/ /72/ /111/	DR I	Regulatory requirements were discussed by DNV with both the national REDD+ coordinator and with a representative of the local Forest Department. Both confirmed that the project activity is not mandated by any law in the host country.		OK
2.5.3	<i>Is sufficient evidence provided to support the relevance of the arguments made?</i>	/1/ /49/	DR CC	CAR8: When demonstrating the project's additionality in accordance with the selected tool, the project proponent is requested to provide valid evidence in support to the argument presented.		CAR8

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
2.5.4	<i>What is the project additionality mainly based on (Investment analysis or barrier analysis)?</i>	/1/ /49/	DR CC	The demonstration of additionality is equally based on an investment analysis, and on the demonstration of barriers.		OK
Investment analysis <i>The list of questions below must be adjusted to the parameters in the investment analysis relevant to the project under validation. All input parameters need to be assessed. Rows B.22 to B.25 need to be adjusted, as necessary, and additional rows must be added similar to rows B.22 to B.25 for other input parameters relevant to the investment analysis.</i>						
2.5.5	<i>Does the project activity or any of the remaining alternatives generate revenues apart from VCS? Is this reflected in the PD?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.6	<i>Do any of the alternatives to the project activity involve investment? Is this reflected in the PD?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.7	<i>If the project activity is implemented in existing facilities or is utilizing existing equipment's, does the investment analysis also consider the overall impact on the operations of the project owner, including any impacts on operational costs and revenues that the project may have (also outside of the project boundaries)?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.8	<i>Is the choice of benchmark analysis, investment comparison or simple cost analysis correct?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.9	<i>Is the benchmark/discount rate the latest available at the time of decision?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.10	<i>What is the financial indicator? Is it on equity/project basis? Before/after tax? Is the</i>	/1/	DR	See CAR7 and CAR8.		CAR7

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
<i>financial indicator in correspondence with the benchmark?</i>	/49/ /52/	CC			CAR8
2.5.11 <i>Are the underlying assumptions appropriate, e.g. what is considered as waste in the baseline is considered to have zero value?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.12 <i>Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the host country?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.13 <i>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?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.14 <i>When a feasibility study report or similar approved by the government is used as the basis for the investment analysis: Can it be confirmed that the values used in the PD are fully consistent with the FSR and is the period of time between finalization of the FSR and the investment decision adequate?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.15 <i>How was the amount of output (e.g. sales of electricity) assessed?</i>	/1/ /49/ /52/	DR CC	☐ The plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval ☐ The plant load factor determined by a third party contracted by the project proponent(s) (e.g. an engineering company) ☐ Other approach. See CAR7 and CAR8.		CAR7 CAR8
2.5.16 <i>How was the output price (e.g. electricity price) assessed?</i>	/1/ /49/	DR CC	☐ Cross-check against third-party or publicly available sources (e.g. invoices or price indices)		CAR7 CAR8

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/52/		☐ Review of feasibility reports, public announcements and annual financial reports related to the project and the project proponent(s) See CAR7 and CAR8.		
2.5.17 <i>How were the investment costs assessed? Were the data available and valid at the time of decision?</i>	/1/ /49/ /52/	DR CC	☐ Cross-check against third-party or publicly available sources (e.g. invoices or price indices) ☐ Review of feasibility reports, public announcements, contracts and annual financial reports related to the project and the project proponent(s) See CAR7 and CAR8.		CAR7 CAR8
2.5.18 <i>How were the O&M costs assessed? Were the data available and valid at the time of decision?</i>	/1/ /49/ /52/	DR CC	☐ Cross-check against third-party or publicly available sources (e.g. invoices or price indices) ☐ Review of feasibility reports, public announcements and annual financial reports related to the project and the project proponent(s) See CAR7 and CAR8.		CAR7 CAR8
2.5.19 <i>Describe the assessment of the other input parameters. Were the data available and valid at the time of decision?</i>	/1/ /49/ /52/	DR CC	☐ Cross-check against third-party or publicly available sources (e.g. invoices or price indices) ☐ Review of feasibility reports, public announcements and annual financial reports related to the project and the project proponent(s) See CAR7 and CAR8.		CAR7 CAR8
2.5.20 <i>In case one of the input parameters being the</i>	/1/	DR	See CAR7 and CAR8.		CAR7

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
<i>contractually agreed price for an energy carrier (which may prior to implementation of the project activity was not utilized and thus did not have any economic value), such as waste gas, waste heat, CMM or biogas, does the price of the energy carrier agreed between the PP and the producer of the energy carrier represent the actual costs by the producer of the energy carrier for recovering and if necessary treating and transporting the energy carrier?</i>	/49/ /52/	CC			CAR8
2.5.21 <i>Was the financial calculation spreadsheet verified and found to be correct?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.22 <i>Sensitivity analysis: Have the key parameters contributing to more than 20% of the revenue/costs during operating or implementation been identified? Has possible correlation between the parameters been considered?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.23 <i>Sensitivity analysis: Is the range of variations is reasonable in the project context?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
2.5.24 <i>Have the key parameters been varied to reach the benchmark and the likelihood of this to happen been justified to be small?</i>	/1/ /49/ /52/	DR CC	See CAR7 and CAR8.		CAR7 CAR8
Barrier analysis					
2.5.25 <i>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.</i>	/1/ /49/ /52/	DR CC	The PP has identified implementation barriers, investment barriers, institutional barriers, and barriers due to social conditions. The investment barrier has been supported by an investment analysis. CAR9:		CAR9

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			The demonstration of barriers presented in the PD does not comply with the tool's requirements on the demonstration of barriers.		
2.5.26 <i>How were the <u>investment barriers</u> assessed to be real? Are the investment barriers substantiated by a source independent of the project proponent(s)?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.27 <i>How does VCS alleviate the investment barriers?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.28 <i>Is the project activity prevented by the investment barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.29 <i>How were the <u>technological barriers</u> assessed to be real? Are the technological barriers substantiated by a source independent of the project proponent(s)?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.30 <i>How does the VCS alleviate the technological barriers?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.31 <i>Is the project activity prevented by the technological barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.32 <i>How were the <u>barriers due to prevailing practise</u> assessed to be real? Are the barriers due to prevailing practise substantiated by a source independent of the project proponent(s)?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.33 <i>How does VCS alleviate the barriers due to prevailing practise?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9

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

Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
2.5.34 <i>Is the project activity prevented by the barriers due to prevailing practise and at least one of the possible alternatives to the project activity is feasible under the same circumstances?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.35 <i>How were the <u>other barriers</u> assessed to be real? Are the other barriers substantiated by a source independent of the project proponent(s)?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.36 <i>How does the VCS alleviate the other barriers?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
2.5.37 <i>Is the project activity prevented by the other barriers and at least one of the possible alternatives to the project activity is feasible under the same circumstances?</i>	/1/ /49/ /52/	DR CC	See CAR9.		CAR9
Common practice analysis					
2.5.38 <i>Does the project apply the latest version of the “Guidelines on common practice” (applicable to projects Tool for the demonstration and assessment of additionality / Combined tool to identify the baseline scenario and demonstrate additionality or any other methodology requiring the use of the “Guidelines on common practice”?</i>	/1/ /49/ /52/	DR CC	☐ Project apply measure(s) for which “Guidelines on common practice” shall be applied and thus applies the steps of the guidelines ☐ Project does <u>not</u> apply measure(s) for which “Guidelines on common practice” shall be applied ☒ Methodology applied by project does not require use of “Guidelines on common practice” ☐ Project is demonstrated to be first-of-its kind and not common practise analysis is required CAR10: The common practice analysis presented in the		CAR10

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
				PD does not comply with the requirements set in step 4 of the additionality tool.		
2.5.39	<i>What is the geographical scope of the common practice analysis? Is this justified?</i>	/1/ /49/ /52/	DR CC	See CAR10.		CAR10
2.5.40	<i>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? For projects applying the “Guidelines on common practice”, has the PD considered similar projects with a capacity or output range as +/-50% of the total design capacity or output of the proposed project activity capacity?</i>	/1/ /49/ /52/	DR CC	See CAR10.		CAR10
2.5.41	<i>What is the data source(s) used for the common practice analysis?</i>	/1/ /49/ /52/	DR CC	See CAR10.		CAR10
2.5.42	<i>How many similar projects exist in the region within the scope? For projects applying the “Guidelines on common practice”, has the PD identified all those projects that are neither registered CDM project activities, project activities submitted for registration, nor project activities undergoing validation and note their number N_{all}?</i>	/1/ /49/ /52/	DR CC	See CAR10.		CAR10
2.5.43	<i>How were possible essential distinctions between the project activity and similar activities assessed? For projects applying the “Guidelines on common practice”, has the PD identified those projects that apply technologies that are different to the technology applied in the proposed project activity and note their number N_{diff}?</i>	/1/ /49/ /52/	DR CC	See CAR10.		CAR10
2.5.44	<i>What is the conclusion of the common practice analysis? For projects applying the “Guidelines on</i>	/1/ /49/	DR CC	See CAR10.		CAR10

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
<i>common practice”, has the PD demonstrated that the proposed project activity is not a “common practice” within a sector in the applicable geographical area given that neither the factor F is greater than 0.2 nor $N_{all}-N_{diff}$ is greater than 3.</i>	/52/				
Conclusion					
2.5.45 <i>What is the conclusion with regard to the additionality of the project activity?</i>	/1/ /49/ /52/	DR CC	A conclusion on the additionality of the project activity will be reached once relevant CARs have been closed.		-
2.6 Algorithms and/or formulae used to determine emission reductions					
Data and parameters that are available at validation and that are not monitored					
2.6.1 <i>How was α verified?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	CAR11: According to table 4 of the methodology, parameter α for U3 is equal to 0. In the ER calculations this is indicated as 0.5791768. The project proponent is requested to comply with the methodology with regard to the value of this parameter.		CAR11
2.6.2 <i>How was β verified?</i>	/1/ /3/ /4/ /17/ /21/ /27/ /48/ /57/ /58/	DR CC I	This parameter refers to the cumulated deforestation that took place in the reference area during the reference period, based on a logistic function. The deforestation model was run and discussed during the site visit. <u>Input to deforestation model:</u> The project proponent used available Landsat imagery spanning from 1984 to 2009. Although deforestation has been observed in the area		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc l.	Final Concl.
			since the 1970s, 1984 was selected as starting date of the historic reference period because it coincides with the first suitable available image in the Landsat archive. This choice is acceptable based on the indications of paragraph 6.7.2.2. of the methodology, which for baseline scenario U3 allows the historic reference period to be determined based on available satellite imagery if no important events are identified. Despite the entry into force of regulation between the 1970s and 1984, DNV confirmed through interviews that poor enforcement of regulation has been common, and hence it is reasonable to conclude that no important events have taken place that would impact the selection of the historic reference period. 6 largely cloud free images were selected for this purpose, and are listed in table 12 of the PD. These comply with the requirements of the methodology in that allowed 100% double coverage of the area was achieved with a total of 2 600 points (the 1984 image contained some cloud, but points covered by the clouds were removed by the population data set). Moreover, the selected images have a spatial resolution of 30 m, and are located evenly across the reference period (as presented in figure 15 of the PDD). The 2600 points showing 100% double coverage and distributed systematically on a grid largely exceed the minimum sample size of 300 required by the methodology, and were thus		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			selected as the ultimate sample size used to estimate β. These were classified as either forest or non-forest throughout the reference period. The points all had equal weighting because no corrections for cloud cover were needed. Conversion from forest (0) to non-forest (1) starts becoming apparent in 1989, while in 1984 all points were “forest”. The 2 600 points observed and classified over six historical images resulted in the logistic function being calculated using 15 600 state observations during the historic reference period. <u>Model</u> The model applies a generalized linear regression model. The best fit was obtained by the project proponent by not considering weights. Only this option resulted in the regression being “highly significant” (99%). The good fit of the model is also apparent from the graphical representation of the model presented in figure 17 of the PDD. Computing β based on the sample deforestation data returned a value of 0.0003653. For quality purposes, the project proponent has developed detailed procedures for forest state point interpretation. Moreover, the assessment of forest state observation was subject to an independent check performed by a third party.		
2.6.3 <i>How was γ verified?</i>	/1/ /3/	DR CC	According to table 4 of the methodology, parameter γ for U3 is equal to 0, as this parameter is only needed to develop the		CL7

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/4/ /21/ /48/ /57/ /58/	I	baseline emission model for planned deforestation. The project proponent calculated the time shift from the beginning of the start date of the historic reference period to the starting date of the project activity to be 8956 days, as indicated in Appendix P of the PD. However, the ER calculation spreadsheet does not indicate any value for this parameter. CL7: The PP is requested to clarify the inconsistency between the information in Appendix P and the “parameters” sheet ER calculation spreadsheet.		
2.6.4 How was θ verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	No covariates have been considered, therefore this parameter is equal to 0. This choice was made by the project proponent because the forest state observation data resulted in a good fit of the model without the need of covariates, and also because of lack of defensible co-variate data (e.g. census data were considered outdated and not reliable).		OK
2.6.5 How was λ_{SOC} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	For the purpose of estimating ex ante ER, the default value of 0.2 given by the methodology has been used. CL8: The project proponent indicated in earlier stages of the validation the intention to replace the default value for parameter λ_{SOC} – exponential soil carbon decay – with the values sourced from		CL8

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			the analysis of actual soil samples from the project site. If this option is still the preferred one, the project proponent is requested to submit evidence for the new values, and update the ER calculations accordingly.		
2.6.6 <i>How was σ_{EM} verified?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The estimated standard deviation of the state observations used to fit the logistic function is indicated in Appendix P as 0.455, and in the ER calculation spreadsheet as having no value. See CL7.		OK
2.6.7 <i>How was B verified?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	CL9: According to section 8.1.1 of the methodology, baseline emissions from biomass are based on the average carbon stock in selected carbon pools from AGMT, AGOT, AGNT, BGMT, BGOT, and BGNT (see acronyms in the methodology). Considering that the project considered 2 biomass carbon pools, AGOT and BGOT, the project proponent is requested to clarify why parameter B was given a value of 1 in Annex P of the PDD. As the ER spreadsheet does not indicate a value for this parameter, see CL7.		CL9
2.6.8 <i>How was C verified?</i>	/1/ /3/ /4/ /21/ /48/ /57/	DR CC I	CL10: Considering that the project considered 3 carbon pools, AGOT, BGOT, and SOC, the project proponent is requested to clarify why parameter C was given a value of 2 in Annex P of the PDD.		CL10

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/58/				
2.6.9 How was J verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This was calculated as the number of observation points times the number of time steps during the reference period. $2\,600 \times 6 = 15\,600$ See CL7.		OK
2.6.10 How was M verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	Since this validation takes place at the same time of the first verification, the PP has calculated baseline emissions for 1 monitoring period. See CL7.		OK
2.6.11 How was A_{PAA} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This equals to 33 338 ha, which is in line with the information presented in the PD and the project maps.		OK
2.6.12 How was A_{PX} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The proxy area has an area of 42 794.40 ha, which is in line with the information presented in the PD and the project maps.		OK
2.6.13 How was A_{AS} verified?	/1/ /3/	DR CC	The area of activity-shifting leakage has an area of 27 805.55 ha, which is in line with the		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/4/ /21/ /48/ /57/ /58/	I	information presented in the PD and the project maps.		
2.6.14 How was C_{Lp} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter is not applicable to the project in that it is used to calculate market-effect leakage as per equation F.47. As discussed in more detail in the leakage emissions section market-effect leakage has not been considered.		OK
2.6.15 How was m verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter is not applicable to the project in that no merchantable trees are present within the reference area. This was confirmed through interviews with local communities held on site.		OK
2.6.16 How was n_d verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The number of spatial points in the reference area is equal to 3120. See CL7.		OK
2.6.17 How was o_i verified?	/1/ /3/ /4/ /21/ /48/	DR CC I	Forest state observation were classified as 0 (forest) or 1 (non-forest). This is correctly indicated in Appendix P. See CL7.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/57/ /58/				
2.6.18 How was p_{LME} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter is not applicable to the project in that it is used to calculate market-effect leakage As discussed in more detail in the leakage emissions section market-effect leakage has not been considered.		OK
2.6.19 How was q verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The lag between start of degradation and deforestation has been quantified as 620 days based on interviews held by the project proponent with local communities. CL11: The project proponent is request to submit evidence for the value of 620 days attributed to parameter q .		CL11
2.6.20 How was r_{CFb} verified?	/1/ /3/ /4/ /21/ /48/ /56/ /57/ /58/	DR CC I	Carbon fraction of biomass for burned wood has been quantified as 0.5, in line with the default value of the 2006 IPCC report. See CL7.		OK
2.6.21 How was r_{RS} verified?	/1/ /3/ /4/ /21/	DR CC I	The model considers a biomass expansion factor of 0.28. This value was sourced from the Intergovernmental Panel on Climate Change "LULUCF Good Practice Guidelines" (table 3A.1.8), and corresponds to the upper range of		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/48/ /56/ /57/ /58/		the average BGB to AGB ratio for tropical/sub-tropical dry forest.		
2.6.22 How was r_U verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This has been calculated based on the length of the perimeter of the project area threatened by deforestation and the total perimeter of the project area. The steps undertaken to obtain this value are described in the PD, and were observed by DNV during the site visit.		OK
2.6.23 How was T verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	CL12: From the project documents submitted, it is not clear how the value assigned to parameter T (1 461 days according to Appendix P) and T_1 (8 956) were selected. The project proponent is requested to clarify how the values indicated in Annex P were reached. See CL7.		CL12
2.6.24 How was T_i verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	See CL 12.		CL12
2.6.25 How was t_{PA} verified?	/1/ /3/ /4/ /21/	DR CC I	This parameter is not applicable to baseline scenario U3.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/48/ /57/ /58/				
2.6.26 How was t_m verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter is not applicable to baseline scenario U3.		OK
2.6.27 How was t_{PL} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This is equal to the project's crediting period expressed in days. CAR12: The value applied for parameter t_{PL} indicated in Appendix P and in the Net Emission Reductions (NER) model (i.e. 10 592 days) does not coincide with a crediting period of 30 years as calculated in the "parameters" sheet of the ER spreadsheet (10 957 days). The project proponent is requested to ensure consistency between project documents.		CAR12
2.6.28 How was t_{PAI} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter only applies in the case of grouped projects, and has therefore been considered as 0.		OK
2.6.29 How was t_{SA} verified?	/1/ /3/	DR CC	This parameter is not applicable as the agents of deforestation identified do not consist of primary and secondary agents.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/4/ /21/ /48/ /57/ /58/	I			
2.6.30 How was W_i verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	CL13: From the project documents submitted, it is not clear how the value assigned to parameter W_i (0.0000641 according to Appendix P). The project proponent is requested to clarify how the value indicated in Annex P was reached. See CL7.		CL13
2.6.31 How was x verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	No covariates have been considered, therefore this parameter is equal to 0.		OK
2.6.32 How was x_i verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter is not used in equations applicable to scenario U3.		OK
2.6.33 How was x_o verified?	/1/ /3/ /4/ /21/	DR CC I	No covariates have been considered, therefore this parameter is equal to 0.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/48/ /57/ /58/				
2.6.34 How was x_{PAI} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	No covariates have been considered, therefore this parameter is equal to 0.		OK
2.6.35 How was x_{SA} verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	No covariates have been considered, therefore this parameter is equal to 0.		OK
2.6.36 How was the y_i verified?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	This parameter is not used in equations applicable to scenario U3.		OK
Baseline emissions					
2.6.37 Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/ /3/ /4/ /21/ /48/ /57/	DR CC I	CAR14: According to section 3 of the VCS PD template, the PD must describe the procedure to quantification baseline, project and leakage emissions and/or removals in accordance with the applied methodology, including all relevant		CAR13 CAR14 CL14 CAR15

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/58/		equations, and explain and justify all relevant methodological choices (e.g., with respect to selection of emission factors and default values). The information presented in section 3 of the PD does not comply with this requirement. The project proponent is requested to include in the PD all the information required by the VCS template. The methodology defines the different baseline scenarios applicable to each carbon pool based on the overall baseline scenario identified. For the project activity, the following applies: - Above-ground other (non-merchantable tree) with U3 as baseline scenario: the above-ground portions of trees that are not commercially viable are assumed to be converted to an emission first in the stratum with the lowest carbon stocks and last in the stratum with the highest carbon stocks; - Below-ground other (non-merchantable tree); with U3 as baseline scenario: below-ground biomass is conservatively assumed to be partially removed or to begin decay at the time of deforestation, first in the stratum with the lowest carbon stock and last in the stratum with the lowest carbon stocks; - Soil organic carbon with U3 as baseline scenario: it is assumed that soil carbon will deplete to the SOC measured in the proxy area after a long period of time. Given these premises, the baseline model comprises the biomass emissions model, the		

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			soil emissions model, and the model for spatial component that is unique to baseline scenario U3. <u>Biomass Emissions Model:</u> for U3, this is given by equation F.4 of the methodology. The PD indicates this was calculated to be 1 564 437 tCO₂e. Since the validation takes place at the time of the first verification of the project, equation F.15 is also applied in the ER calculation spreadsheet for the first monitoring period. The baseline scenario average carbon stock in selected carbon pools has been calculated for AGOT and BGOT using equations F.18 and F.23 of the methodology. Cumulative emissions from BGB are calculated using equation F.29 of the methodology, while the carbon not decayed in BGB is calculated by applying equations F.30 and F.31. In addition to the biomass model above, the methodology indicates that baseline scenario U3 requires the application of the decay emissions model described by equation F.24 to estimate the carbon not decayed in BGB (equation F.9), as well as in SOC (equation F.10). <u>Soil Emissions Model:</u> for U3, this is given by equation F.7 of the methodology. The PD indicates this was calculated to be 856 870 tCO₂e. The cumulative baseline emissions from SOC for U3 are calculated with equation F.26 and F.28 of the methodology, while the cumulative carbon not decayed in SOC is given		

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			by equation F.32. The use of equation F.26, which the methodology indicates as current baseline emissions from SOC for type P baseline scenarios, is considered acceptable since this equation is in line with equations F.15 and F.30 which are not indicated as only applicable to a scenario of type P. CAR14: According to the methodology section 8.4.5, when a monitoring period spans more than one calendar year, NERs shall be allocated by year proportional to the number of calendar days in each year relative to the total number of days in the monitoring period. The calculations submitted have condensed the first 5 years (the first monitoring period) into 1 figure. For transparency, the project proponent is requested to disaggregate these values so that all years are individually shown. The application of the cumulative emission model through equations F.4 (baseline emission model), F.7 (soil emission model), F.9 (decay emission model for SOC), and F.10 (decay emission model for BGB) was achieved using the Visual Basic programming language. The application of equations F.4, F.7, and F.9 was checked and found correct. CL14: The calculation of the decay emission model for BGB presented in the calculation spreadsheet		

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			could not be matched with the calculations described by equation F.10 of the methodology. The project proponent is requested to clarify how the decay emission model for BGB was produced. For the application of the remaining equations (i.e. F.18, F.23, F.24, F.28, F.29, F.31, and F.32), DNV checked the source data collected during the monitoring period, and the calculations that resulted in the final carbon figures. CAR155: The ER spreadsheet contains the calculations of the cumulative baseline emissions from SOC, but refers to them as equation 27 (applicable for baseline scenario U1) rather than 28 (applicable to baseline scenario U3). For clarity, the project proponent is requested to refer to the correct equation from the methodology.		
2.6.38 <i>Have conservative assumptions been used when calculating the baseline emissions?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The methodology requires the baseline emissions model to be based on data collected in the reference area, which used to estimate deforestation parameters, and in the proxy area, where residual biomass is measured. The methodology sets a number of requirements for the identification of each of the areas, but the selection is otherwise left to the discretion of the PP. The selection of the project accounting area and		CL15

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			of the reference area was validated as part of the assessment of the applicability of the methodology. The proxy area has been validated as follows: <u>Proxy area:</u> - Is located in the same general region as the project area: this is confirmed by the maps provided by the PP and was observed on site; - On average, the proxy area shall not be forested as of the project start date: this is confirmed by the maps provided by the PP and was observed on site; - It shall have a similar landscape configuration to the project accounting area: This is demonstrated by the maps provided by the PP (and shown in the PD) and was observed on site; - The proxy area shall not be altered after the first monitoring period: <u>CL15:</u> Since for this project the reference area (where drivers of deforestation have been identified and are being mitigated through community projects) largely overlaps with the proxy area (where residual biomass is monitored for the quantification of baseline emissions), the project runs the risk that deforestation mitigation activities, when fully operational, may interfere with the measurements of the residual baseline biomass in the baseline scenario, inflating recorded residual biomass, and resulting in a		

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			progressively significant underestimation of the difference in carbon sequestration between baseline and project scenarios. The PP is requested to clarify how it will prevent the increase in biomass due to deforestation mitigation activities implemented in the reference area interfering with measurements of residual biomass in the proxy area. In addition to the spatial boundaries of the three areas required to calculate baseline emissions, the methodology requires the identification of a reference period, which serves as temporal boundary to the calculations. The reference period has already been validated as part of the input parameters to the baseline emission model.		
2.6.39 <i>Are uncertainties in the baseline emission estimates properly addressed?</i>	/1/ /3/ /4/ /17/ /21/ /27/ /48/ /57/ /58/	DR CC I	The methodology has a number of requirements for minimizing uncertainty, which are outlined in section 6.7.9. The PP has made every attempt to mitigate uncertainty, which resulted in a forest state interpretation document, an independent check of point interpretation by associates from the Cape Peninsula University of Technology, and the identification and correction of systematic errors using the Cumulative Deforestation Model developed for ArcGIS by Wildlife Works. Moreover, the methodology requires the project proponent to determine deductions for uncertainty, which are described by equation F.52 of the methodology, and equation F.14 to calculate the approximate estimate of		CL16

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			uncertainty for the logistic function of deforestation. CL16: The determination of parameters U_{EM}, U_B and U_P in the inventory and in the ER spreadsheet are not transparently shown. The project proponent is requested to present the calculation on uncertainty in a transparent manner, so that it can be linked to the final confidence deduction.		
Project emissions					
2.6.40 <i>Are the calculations documented according to the approved methodology and in a complete and transparent manner?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	According to the methodology, project emissions are calculated from the events of biomass consumption through forest fires, burning, logging or other disturbances. The calculation of project emissions is outlined in equation F.40 of the methodology, but since logging does not take place in the baseline, and the carbon stored in wood products has therefore been excluded, the project emissions consist of GHG emissions from burning, and have been calculated using equation F.41. Emissions from burning have been calculated to be 0 because, during the first 5 years of the project activity, no tree biomass has been lost because of fires. It was in fact observed on site that the miombo vegetation which cover the project area has evolved a strong resistance to fire: fire events in this area are frequent, but they rarely reach the intensity required to kill the trees. DNV observed several burned areas within the project area, and observed no dead		OK

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			trees. Moreover, DNV checked measurements performed in monitoring plots which showed evidence signs of burning, and observed that the trees recorded still coincided with the recors collected as part of the previous monitoring exercise, which had taken place on average one year before the site visit. The project proponent has subsribed to a number of satellite alert services targeting forest fires, and mantains staff patrolling the area for security purposes that are able to report fire occurrences. DNV considers the choice of estimating project emissions due to fire as 0 justified.		
2.6.41 <i>Have conservative assumptions been used when calculating the project emissions?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The calculation of project emissions has been based on the data recorded in the first five years of the project lifetime, and is not based on assumptions.		OK
2.6.42 <i>Are uncertainties in the project emission estimates properly addressed?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The calculation of project emissions has been based on the data recorded in the first five years of the project lifetime, and presents no uncertainties.		OK
Leakage					
2.6.43 <i>Are the leakage calculations documented according to the approved methodology and in a complete and transparent manner?</i>	/1/ /3/ /4/ /15/	DR CC I	The methodology contemplates two types of leakage: activity-shifting leakage and market-effect leakage. As the project does not cause a reduction in the supply of commodities since no		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/16/ /21/ /22/ /48/ /57/ /58/ /59/ to /61/ /73/ to /110/		merchantable tree is present in the area, market-effect leakage has been excluded from the calculations. Leakage emission are therefore estimated using the leakage emission model described by the methodology in equation F.45, and calculated cumulative emissions from activity-shifting leakage with equation F.44. The resulting activity-shifting leakage emissions were insignificant, and have therefore considered 0. The insignificance of leakage emissions was verified with georeferenced, dated pictures provided by the project participant for each monitoring plot in the leakage area, and cross-checked through interviews with the plot team responsible for the measurements, which confirmed that no deforestation activities had been observed in the leakage area. In addition to the quantification of leakage emissions, the methodology requires project proponents to implement leakage mitigation strategies. The project proponent has initiated several activities that involve the communities residing in the reference area. These described in the PD, and were verified through interviews with the local communities. DNV confirmed the information presented in the PD in relation to deforestation mitigation activities implemented by the project proponent.		
2.6.44 Have conservative assumptions been used when calculating the leakage emissions?	/1/ /3/ /4/	DR CC I	The methodology has been designed in such way as to require the identification of an activity-shifting leakage area and a market-effect		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/48/ /57/ /58/		leakage area. The methodology sets a number of requirements for the identification of each of the areas, but the selection is otherwise left to the discretion of the PP. The project proponent only identified an activity-shifting leakage since no market-effect leakage is foreseen. The selection of this area is assessed here: <u>Activity-shifting leakage area:</u> - the activity-shifting leakage area is in the same general region as the project area: in fact, the area identified to monitor leakage is adjacent to the project area; - As of the project start date, the activity-shifting leakage area is entirely forested and no larger than the project accounting area: the activity-shifting accounting area (which excludes steep slopes) extends to 27 806 ha, compared to the 33 338 ha of the project accounting area. Moreover, at the time of the starting date of the project was entirely forested; - the leakage area is located in the same proximity to the agents of deforestation, as it shares with the project area approximately the same distance from the reference area where the agents of deforestation originate; - agents of deforestation have access to the area: in fact there are a number of roads going through this area which the project proponents use to access the monitoring plots located in the area; - the area shares the same political boundaries with the project area;		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			- It has similar landscape configuration to the project accounting area.		
2.6.45 <i>Are uncertainties in the leakage emission estimates properly addressed?</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	The project participant calculated activity-shifting leakage based on the data recorded in the first 5 years of the crediting period, which presented no uncertainties.		OK
Emission Reductions					
2.6.46 <i>Algorithms and/or formulae used to determine emission reductions:</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	A conclusion on the determination of emissions reductions will be reached once relevant CARs and CLs have been closed.		-
<i>All assumptions and data used by the project proponent(s) are listed in the PD and related document submitted for registration. The data are properly referenced</i> <i>All documentation is correctly quoted and interpreted.</i> <i>All values used can be deemed reasonable in the context of the project activity</i> <i>The methodology has been correctly applied to calculate the emission reductions and this can be replicated by the data provided in the PD and supporting files to be submitted for registration.</i>					
2.7 Monitoring plan					
Data and parameters monitored					
2.7.1 <i>Do the means of monitoring described in the plan comply with the requirements of the methodology?</i>	/1/ /8/ /30/ /32/ /28/	DR CC I	The methodology requires the project to be monitored through fixed area plots coupled with allometric equations for the estimation of carbon stocks in trees, in addition to soil samples collected from soil cores or pits.		CAR16 CL17 CL8

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
	/29/ /48/ /57/ /58/ /59/ to /61/		Moreover, the project proponent is requested to monitor the activities implemented to reduce deforestation. The monitoring plan is presented in the project's first Monitoring Report, rather than in the PD. CAR16: Section 4 of the VCS PD template list the information that project proponents are required to include in the PD, i.e. a list of parameters determined or available at validation in the format provided by the template, a list of parameters that will be monitored during the project's crediting period in the format provided by the template, and a description of the process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters (Data and Parameters Monitored). This information is missing from the PD. The project proponent is requested to comply with the requirement of the VCS PD template for what concerns the information that needs to be provided to stakeholders. The different elements of the monitoring plan were validated as follows: <u>Sample plots:</u> the selection of sample plots for this project was validated against the requirements set in Appendix B of the methodology. Since the project validation takes		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			place at the time of the first verification, DNV could observe the location and settings of the monitoring plots, as well as measurements procedures. Plots have been located throughout the project area, reference area, proxy area and leakage area to achieve stratified random sampling. 196 permanent monitoring plots have been established within the project area, of which 59 also included soil sampling and 10 were located within the encroachment area. The proxy area hosts 46 plots, while the reference area includes 84 plots including soil sampling plots. 30 plots are located in the leakage area. DNV visited 8 plots located in the project, reference and proxy area, and can confirm they are marked inconspicuously in line with the requirements of the methodology. The influence of periodic variations is mitigated by having measurements taking place throughout the years instead of at a specific time of the year. The optimum number of biomass plots was reached based on the coefficient of variation, confidence level and acceptable error, which was set at 0.05. The calculation resulted in the final figure of 181, which was eventually exceeded by the project proponent. <u>Allometric equation:</u> the project applies an allometric equation which was developed specifically for miombo forest through destructive sampling which took place in close proximity to the project area. DNV visited the site where trees were selected for the destructive sampling, and confirms that the site shares the		

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			same environmental conditions with the project area. It consists of a logarithmic linear model for estimating tree biomass (both above-ground and below-ground). However, the project proponent decided to only use the equation for the estimation of AGB, in combination with a root: shoot ration sourced from the IPCC default values. The allometric equation was based on 113 trees from 19 species, with a Diameter at Breast Height (DBH) of 2 to 39 cm. The sample exceeds the minimum sample of 30 trees required by the methodology. The model was later extended to cover a range of diameters spanning from 3.2 to 54.8 cm, as it was observed by the author that no significant dispersion of deviation occurred with the increased range. The range has been respected by the project participant, who does not include in the AGOT pool trees that are less than 15 cm in diameter, and has capped biomass calculations to 55 cm. The model has been demonstrated by the author to have a mean error of +/- 2.98%. Moreover, the project proponent compared the predicted biomass for 120 trees with the actual measurements performed as a crosscheck, and demonstrates that the model under estimated actual biomass by 10%. The allometric equation is therefore considered acceptable. CL17: The calculation of the average carbon stock per ha is not transparently shown in the inventory spreadsheet. The project proponent is requested		

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
			to present the calculations so that the equations used can be observed. <u>Soil samples:</u> See CL8 <u>Deforestation mitigation activities:</u> The project proponent has submitted a monitoring plan for the eco-charcoal initiative, as well as a social monitoring plan to monitor the performance of the deforestation mitigation activities over time.		
2.7.2 Does the monitoring plan contains all necessary parameters, and are they clearly described?	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	See CL17 in 2.7.1. The project proponent has submitted an Appendix with the list of parameters that will be monitored as part of the project activity. CL18: Although project emissions from burned biomass have been estimated to be 0 based on the records collected in the first 5 years of the project's lifetime, intense fires causing trees to burn may occur within the project's crediting period. The project proponent is requested to clarify why parameters relevant to burned wood (i.e. w, and B_b) are indicated as not applicable in Appendix Q.		CL17 CL18
2.7.3 In case parameters are measured, is the measurement equipment described? Describe each relevant parameter.	/1/ /3/ /4/ /21/ /48/ /57/	DR CC I	See CAR16.		CAR16

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
2.7.4 <i>In case parameters are measured, is the measurement accuracy addressed and deemed appropriate? Describe each relevant parameter.</i>	/58/ /1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	See CAR16.		CAR16
2.7.5 <i>In case parameters are measured, are the requirements for maintenance and calibration of measurement equipment described and deemed appropriate? Describe each relevant parameter.</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	See CAR16.		CAR16
2.7.6 <i>Is the monitoring frequency adequate for all monitoring parameters? Describe each parameter.</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	See CAR16.		CAR16
2.7.7 <i>Is the recording frequency adequate for all monitoring parameters? Describe each parameter.</i>	/1/ /3/ /4/ /21/ /48/ /57/ /58/	DR CC I	See CAR16.		CAR16

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Checklist Question		Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
Ability of project proponent(s) to implement monitoring plan						
2.7.8	<i>How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?</i>	/1/ /48/	DR CC I	The validation of the project takes place at the same time as the first verification. For this reason, DNV could observe the monitoring plan implementation in the first 5 years of the project lifetime. An assessment of the implementation of the monitoring plan is provided in DNV's verification report for this project.		OK
2.7.9	<i>Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?</i>	/1/ /3/ /4/ /8/ /21/ /48/ /57/ /58/	DR CC I	The project proponent has produced clear and detailed Standard Operating Procedures (SOP) for field-based carbon stock assessment. DNV could observe the implementation of the SOP on site, and confirms that the plot team has good knowledge of the procedures and excelled skills to carry out the work.		OK
2.7.10	<i>Are the data management and quality assurance and quality control procedures sufficient to ensure that the emission reductions achieved by/resulting from the project can be reported ex post and verified?</i>	/1/ /3/ /4/ /8/ /21/ /48/ /57/ /58/	DR CC I	The SOP for field-based carbon stock assessment also includes instructions on how to complete electronic datasheets while in the field. The data thus recorded are automatically sent to the project proponent's office for analysis. The electronic forms include a number of quality control measures, so that recording errors are minimized. The monitoring operations observed on site by DNV showed that the data management, QA and QC procedures are sufficient to ensure that the emission reductions achieved by the project can be reported ex-post and verified.		OK
2.7.11	<i>Will all monitored data required for verification and issuance be kept for two years after the end of the</i>	/1/ /3/	DR CC	It was confirmed on site that all monitored data required for verification and issuance will be kept		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
<i>crediting period or the last issuance of VERs, for this project activity, whichever occurs later?</i>	/4/ /21/ /48/ /57/ /58/	I	for two years after the end of the crediting period or the last issuance of verified Emission Reductions (VERs), for this project activity, whichever occurs later.		
Monitoring of sustainable development indicators/ environmental impacts					
2.7.12 <i>Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?</i>	/1/ /111/	DR I	The existence of requirements for monitoring sustainable development indicators was verified on site by DNV with the national REDD+ coordinator. It was confirmed that no legislation in the host country warrants the monitoring of sustainable development indicators.		OK
2.7.13 <i>Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?</i>	/1/ /111/	DR I	Not applicable		OK
2.7.14 <i>Are the sustainable development indicators in line with stated national priorities in the host country?</i>	/1/ /111/	DR I	Not applicable		OK
3 DURATION OF THE PROJECT ACTIVITY / CREDITING PERIOD					
3.1 Start date of project activity					
3.1.1 <i>How has the starting date of the project activity been determined? What are the dates of the first contracts for the project activity? When was the first construction activity?</i>	/1/	DR	The starting date of the project activity has been discussed in section 1.5. Of this checklist.		OK
3.1.2 <i>Is the stated expected operational lifetime of the project activity reasonable?</i>	/1/ /12/	DR CC	The operational time of the project activity is 30 years, which coincide with the duration of the easement of conservation signed between the land owner and the project proponent. This is renewable.		OK

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Checklist Question	Ref	MoV	Assessment by DNV	Draft Conc I.	Final Concl.
3.1.3 <i>Is the start date, the type (renewable/fixed) and the length of the crediting period clearly defined and reasonable?</i>	/1/	DR	See CL1 in section 1.6.1 of this checklist.		CL1
4 ENVIRONMENTAL IMPACTS)					
4.1.1 <i>Are there any host country requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved? Does the approval contain any conditions that need monitoring?</i>	/1/ /9/	DR CC	Zambia has requirements for the performance of environmental impact assessments. However, the project proponent has received a letter from the Zambia Environmental Management Agency (ZEMA), which states that the project is not required to undertake an environmental impact assessment, and that ZEMA has not objection with the project proponent proceeding with the implementation of the project activity.		OK
4.1.2 <i>Does the project comply with environmental legislation in the host country?</i>	/1/ /9/ /111/	DR CC I	The letter issued by ZEMA indicates support to the implementation of the project activity. Compliance with applicable laws was also confirmed to DNV by the national REDD+ coordinator from Zambia's Ministry of Lands, Natural Resources & Environmental Protection.		OK
4.1.3 <i>Will the project create any adverse environmental effects?</i>	/1/ /73/ to /110/	DR	Interviews held on site highlighted no foreseen adverse environmental effects.		OK
4.1.4 <i>Have identified environmental impacts been addressed in the project design?</i>	/1/ /73/ to /110/	DR	Interviews held on site highlighted no foreseen adverse environmental effects.		OK
4.1.5 <i>Has an analysis of the environmental impacts of the project activity been sufficiently described?</i>	/1/ /53/	DR I	No formal environmental impact assessment has been submitted to DNV, as the project consists of the preservation of the environmental conditions existing prior to the project implementation. Moreover, the CCB validation		OK

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			report confirms exceptional net positive biodiversity impacts.		
4.1.6 <i>Are transboundary environmental impacts considered in the analysis?</i>	/1/ /73/ to /110/	DR	No analysis was undertaken. Interviews held on site highlighted no foreseen adverse environmental effects.		OK
5 STAKEHOLDER CONSULTATION					
5.1.1 <i>Have relevant stakeholders been consulted?</i>	/1/ /44/ /62/ /65/ to /71/ /73/ to /110/	DR CC I	The project proponent conducted extensive sensitization and consultation of all local communities. More specifically, the project proponent carried out 70 sensitization meetings, achieving a sensitization rate of 86%. Approval rates for the project based on votes reached 96%, while approval rates obtained through surveys achieved 100% approval. These data were cross-checked by interviewing resident communities during the site visit. All confirmed they felt sufficiently informed about the project activity and had a positive opinion of it.		OK
5.1.2 <i>Have appropriate media been used to invite comments by local stakeholders?</i>	/1/ /44/ /62/ /65/ to /71/	DR CC I	The Project proponent has set up a competent community engagement team, which carries out sensitization in the ways considered most culturally suitable to the local situation.		OK
5.1.3 <i>If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?</i>	/1/ /72/	DR I	No regulation applies to the consultation of stakeholders for this type of project. This was confirmed by DNV through interviews with local authorities.		OK
5.1.4 <i>Is a summary of the stakeholder comments received provided?</i>	/1/ /52/	DR CC	CAR17: According to the VCS PD template, section 6 of		CAR17

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			the PD needs to summarize relevant outcomes from stakeholder consultations, and mechanisms for on-going communication. This information is missing from the PD. The project proponent is requested to include this information in the PD.		
5.1.5 <i>Has due account been taken of any stakeholder comments received?</i>	/1/ /73/ to /110/	DR I	All stakeholders interviewed during the site visit confirmed a positive opinion of the project activity, including community leaders. No remark was raised on comments not taken into account by the project proponent.		OK

Table 2 Non-Permanence risk assessment checklist

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
1 INTERNAL RISKS		CAR18: The non-permanence risk assessment has not been described in a risk report based on the VCS template. The project proponent is requested to submit a non-permanence risk report using version 3.0 of the VCS risk assessment template.		CAR18
1.1 Project Management				
a) Species planted (where applicable) associated with more than 25% of the stocks on which GHG credits have previously been issued are not native or proven to be adapted to the same or similar agro-ecological zone(s) in which the project is located (Score 2).	0	All species present in the project area are native		OK
b) Ongoing enforcement to prevent encroachment by outside actors is required to protect more than 50% of stocks on which GHG credits have previously been issued (Score 2).	0	CL19: The project proponent is requested to justify why the risk of encroachment has been assessed to be 0 given the encroachment pressure threatening the project area.		CL19
c) Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (i.e., any area of required experience is not covered by at least one individual with at least 5 years' experience in the area) (Score 2).	0	The management team includes individuals with significant experience in all skills necessary to successfully undertake all project activities. This was observed by DNV during the site visit		OK
d) Management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or	0	The management team does maintain a presence in the country, with an office in Lusaka and experienced staff based at the conservancy. This was confirmed by DNV on		OK

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
polygons in the project area (Score 2).		site.		
e) Mitigation: Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting (e.g., individuals who have successfully managed projects through validation, verification and issuance of GHG credits) under the VCS Program or other approved GHG programs (Score -2).	-2	The management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting.		OK
f) Mitigation: Adaptive management plan in place (Score -2).	-2	An adaptive management plan is in place /6/		OK
Total Project Management (PM)	-4	The score will be confirmed once CL 19 is closed.		-
1.2 Financial viability				
a) Project cash flow breakeven point is greater than 10 years from the current risk assessment	0	DNV was provided with documentation that demonstrates the project's expenses (capital and operational), and the funding that has been made available to the project through grants issued by a number of organizations, also in the form of insurance against failure to sell carbon credits during the crucial early years of the project: /35//36//37//38//39//40//44/.		OK
b) Project cash flow breakeven point is between 7 and up to 10 years from the current risk assessment	0			
c) Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment	0			
d) Project cash flow breakeven point is less than 4 years from the current risk assessment	0			
e) Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven	0	DNV was provided with documentation that demonstrates the project's expenses (capital and operational), and the funding that has been made available to the project through grants issued by a number of organizations, also in the form of insurance against failure to sell carbon credits during the crucial early years of the project: /35//36//37//38//39//40//44/.		OK
f) Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven	0			
g) Project has secured 40% to less than 80% of funding	0			

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
needed to cover the total cash out required before the project reaches breakeven				
h) Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven	0			
i) Mitigation: Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven	0	This is not available to the project proponent.		OK
Total Financial Viability (FV)	0	The calculated score is justified for the project activity.		OK
1.3 Opportunity Cost				
a) NPV from the most profitable alternative land use activity is expected to be at least 100% more than that associated with project activities; or where baseline activities are subsistence-driven, net positive community impacts are not demonstrated	0	DNV was provided with documentation that demonstrates the project's expenses (capital and operational), and the funding that has been made available to the project through grants issued by a number of organizations, also in the form of insurance against failure to sell carbon credits during the crucial early years of the project: /35//36//37//38//39//40//44/.		OK
b) NPV from the most profitable alternative land use activity is expected to be between 50% and up to 100% more than from project activities	0			
c) NPV from the most profitable alternative land use activity is expected to be between 20% and up to 50% more than from project activities	0			
d) NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated	0			
e) NPV from project activities is expected to be between 20% and up to 50% more profitable than	0			

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
the most profitable alternative land use activity				
f) NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity	0			
g) Mitigation: Project proponent is a non-profit organization	0	This does not apply to the project proponent.		OK
h) Mitigation: Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over the length of the project crediting period	-2	The project is protected by a legally binding commitment in the form of a Deed of conservation easement which lasts for the duration of the crediting period (30 years) /11/12/13/		OK
i) Mitigation: Project is protected by legally binding commitment (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over at least 100 years	0	This does not apply to the project.		OK
Total Opportunity Cost (OC)	0	The calculated score is justified for the project activity.		OK
1.4 Project Longevity				
a) Without legal agreement or requirement to continue the management practice (Score is 24 - (project longevity/5)	15	The project is protected by a legally binding commitment in the form of a Deed of conservation easement which lasts for the duration of the crediting period (30 years) /11/12/13/		OK
b) With legal agreement or requirement to continue the management practice (Score is 30 - (project longevity/2)				
Total Project Longevity (PL)	15	The calculated score is justified for the project activity.		OK
1.5 Total Internal Risk				
Total Internal Risks (PM+FV+OC+PL)	11	The score will be confirmed once CL 19 is closed.		-

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
2 EXTERNAL RISKS				
2.1 Land Ownership and Resource Access/Use Rights				
a) Ownership and resource access/use rights are held by same entity(s)	0	CL20: The documentation for right of use submitted by the project proponent indicates that land ownership and resource access/use rights are not held by same entity. The project proponent is requested to clarify why this indicator has been given a score of 0.		CL20
b) Ownership and resource access/use rights are held by different entity(s) (e.g., land is government owned and the project proponent holds a lease or concession)	2			
c) In more than 5% of the project area, there exist disputes over land tenure or ownership	0	No disputes over land tenure or ownership threaten the project activity, as the land title is clear. This was confirmed on site through interviews with local authorities and with the local community /72//73/ to /110/.		OK
d) There exist disputes over access/use rights (or overlapping rights)	0	No disputes over land tenure or ownership threaten the project activity, as the land title is clear. This was confirmed on site through interviews with local authorities and with the local community /72//73/ to /110/.		OK
e) WRC projects unable to demonstrate that potential upstream and sea impacts that could undermine issued credits in the next 10 years are irrelevant or expected to be insignificant, or that there is a plan in place for effectively mitigating such impacts.	0	This is not applicable to the project.		OK
f) Mitigation: Project area is protected by legally binding commitment (e.g., a conservation easement or protected area) to continue management practices that protect carbon stocks over the length of the	-2	The project is protected by a legally binding commitment in the form of a Deed of conservation easement which lasts for the duration of the crediting period (30 years) /11//12//13/		OK

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
project crediting period				
g) Mitigation: Where disputes over land tenure, ownership or access/use rights exist, documented evidence is provided that projects have implemented activities to resolve the disputes or clarify overlapping claims	-2	The project proponent has developed Standard Operating Procedures for law enforcement /7/.		OK
Total Land Tenure (LT)	0	The score will be confirmed once CL20 is closed.		-
2.2 Community Engagement				
a) Less than 50 percent of households living within the project area who are reliant on the project area, have been consulted	0	Households living in the project area are limited to those families living in the encroachment area. These have been approached to clarify land ownership and land use rights /65/ to /71/.		OK
b) Less than 20 percent of households living within 20 km of the project boundary outside the project area, and who are reliant on the project area, have been consulted	0	The project proponent conducted extensive sensitization and consultation of all local communities /62//65/ to /71/. More specifically, the project proponent carried out 70 sensitization meetings, achieving a sensitization rate of 86% /44/. Approval rates for the project based on votes reached 96% while approval rates obtained through surveys achieved 100% approval /44/. These data were cross-checked by interviewing resident communities during the site visit /73/ to /110/. All confirmed they felt sufficiently informed about the project activity and had a positive opinion of it.		OK
c) Mitigation: The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area	-5	The generated net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area. This is confirmed by the fact that the project achieved triple gold under the Climate, Community and Biodiversity Standard /53/.		OK

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
Total Community Engagement (CE)	-5	The calculated score is justified for the project activity.		OK
2.3 Political Risk				
a) Governance score of less than -0.79 (Score 6)	6	Zambia has a low governance score.		OK
b) Governance score of -0.79 to less than -0.32 (Score 4)	0			
c) Governance score of -0.32 to less than 0.19 (Score 2)	0			
d) Governance score of 0.19 to less than 0.82 (Score 1)	0			
e) Governance score of 0.82 or higher (Score 0)	0			
f) Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3.	-2	Zambia is a REDD+ pilot country /30/.		OK
Total Political Risk (PC)	4	The calculated score is justified for the project activity.		OK
2.4 Total External Risk				
Total External Risk (LT+CE+PC)	0	The score will be confirmed once CL20 is closed.		-
3 NATURAL RISKS				
3.1 Fire (F)				
3.1.1 <i>Significance and Likelihood (LS)</i>	2	The low score is justified based on the fact that the miombo forest is fire-evolved, and only a very devastating event could destroy the majority of the proejct		OK
3.1.2 <i>Mitigation (M)</i>	0.5			
3.1.3 <i>Score (LSxM)</i>	1			
3.2 Pest and Disease Outbreaks (PD)				
3.2.1 <i>Significance and Likelihood (LS)</i>	0	The risk of pests has been etimated to be low since there is no record of african natural forest being impacted by pests		OK
3.2.2 <i>Mitigation (M)</i>	1			

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Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
3.2.3 <i>Score (LSxM)</i>	0	due to its diversity.		
3.3 Extreme Weather (W)				
3.3.1 <i>Likelihood (LS)</i>	1	The woody vegetation is adapted to drought as the region is exposed to periodic droughts.		OK
3.3.2 <i>Mitigation (M)</i>	1			
3.3.3 <i>Score (LSxM)</i>	1			
3.4 Geological Risk (G)				
3.4.1 <i>Likelihood (LS)</i>	0	The project area is geologically stable and there are thus no significant threats from seismic activities.		OK
3.4.2 <i>Mitigation (M)</i>	1			
3.4.3 <i>Score (LSxM)</i>	0			
3.5 Other Natural Risk (ON)				
3.5.1 <i>Likelihood (LS)</i>	1	There are no elephants permanently present in the project zone.		OK
3.5.2 <i>Mitigation (M)</i>	1			
3.5.3 <i>Score (LSxM)</i>	1			
3.6 Total Natural Risks				
Total Natural Risks (F + PD + W + G + ON)	3	The calculated score is justified for the project activity.		OK
4 TOTAL RISK				
Overall Risk Rating	14	The calculated total risk will be confirmed once relevant CLs have been closed.		

Table 3 Resolution of Corrective Action Requests and Clarification Requests

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
CAR1: According to the VCS PD template section 1.8, AFOLU projects are requested to indicate if the project is located within a jurisdiction covered by a jurisdictional REDD+ program. This information is missing from the PD. The project proponent is requested to include in section 1.8 of the PD all the information listed in the PD template.	Text in the document has been updated to indicate that the project is not part of any JNR program	The information presented in section 1.8 complies with the requirements of the VCS PD template. The information concerning the presence of jurisdictional REDD programmes in Zambia was confirmed by the national REDD+ coordinator /111/. CAR1 is closed.
CAR2: The information presented in the PD in the table of PD requirements is not correct on the following points: - PDR 23, 24, and 25 are not consistent; - The applicability of PDR 68 is not clear; - PDR 110 and 111 are not related to market leakage, and are included in the main body of the PD; The project proponent is requested to correct the information presented in this table.	Table has been updated as per the auditors request	Information on the applicability of the PD requirements has been updated and is now correct. CAR2 is closed.
CAR3: According to the VCS PD template section 1.10, project proponents shall demonstrate	Text has been updated in the PD as per the auditor's request.	The information presented in section 1.10 complies with the requirements of the VCS PD template. The information presented is in line with what observed by DNV on site.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
that the project has not been implemented to generate GHG emissions for the purpose of their subsequent reduction, removal or destruction. The project proponent is requested to include this information in the PD.		CAR3 is closed.
CAR4: According to the VCS PD template, section 2.2 of the PD needs to include a demonstration and justification of how the project activity meets each of the applicability conditions of the methodology and tools applied by the project. In the PD, the applicability conditions of the tools have not been considered. The project proponent is requested to include this information in section 2.2. of the PD.	Decision tree indicating project type decision making process has been added to the text as well as a narrative explaining the process	Section 2.2. of the PD demonstrates the applicability of the methodology. The applicability of the Tool for the Demonstration and Assessment of Additionality in VCS AFOLU Project Activities is demonstrated in section 2.5 of the PD. The AFOLU Non-Permanence Risk Tool does not present any applicability conditions. CAR4 is closed.
CAR5: The information presented in section 2.4.2 to 2.4.9 of the PD discusses the quantification of baseline emissions rather than the identification of the baseline scenario, and therefore logically belong to section 3.1 of the PD “Quantification of GHG emission reductions and removals”. The PP is requested to move the information in the correct section of the PD.	PD has been updated with sections 2.4.2 to 2.4.9 moved to section 3.1	The identification of the baseline scenario and the quantification of baseline emissions are now presented in the correct sections of the PD, in accordance with the indications of the VCS PD template. CAR5 is closed.
CAR6: The information provided in the PD does not comply with the requirements set in the PD	The PD has been updated to include the decision process followed to identify the baseline scenario.	Section 2.2. of the PD now indicates how the decision tree provided by the methodology was followed to identify the baseline scenario.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
template: "Where the procedure in the applied methodology involves several steps, describe how each step is applied and clearly document the outcome of each step". The PD does not indicate how the decision tree has been followed to identify the baseline scenario.		CAR6 is closed.
CAR7: The VCS PD template indicates that where a project method is applied to demonstrate additionality and the procedure in the applied methodology or tool involves several steps, the PD must describe how each step is applied and clearly document the outcome of each step. The demonstration of additionality as presented in the PD does not comply with the step-wise approach of the tool.	Section 2.5 of the PD has been updated in accordance with VCS Tool VT0001.	Section 2.5 of the PD now presents a demonstration of additionality that complies with the requirements of VCS Tool VT0001. The information presented in the PD are supported by: 1. A declaration made by the Director of Sable Transport Ltd, the land owner, stating that despite the cost of earlier attempts to create a viable wildlife tourism product, which were required to secure the land, establish a road network in the ranch and community areas, the construction of dams and water points, a tourism camp, land management infrastructure, forest management security, and community development projects, the only revenues generated have come from the signing of the carbon agreement with the project developer /42/; 2. Two reviews of the Zambian game ranching industry, funded by the Wildlife Producers Association of Zambia, which confirms the information presented in the PD on the fact that the project is not common practice, and that the industry faces significant barriers /43//44/.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
		CAR7 is closed.
CAR8: When demonstrating the project's additionality in accordance with the selected tool, the project proponent is requested to provide valid evidence in support to the argument presented.	The PD has been updated to indicate the exact steps of VT0001 that were followed to determine additionality. New evidence has been added as an Annex	Valid evidence has been provided in support to the demonstration of additionality presented in the PD. CAR8 is closed.
CAR9: The demonstration of barriers presented in the PD does not comply with the tool's requirements on the demonstration of barriers.	The PD has been updated to indicate the exact steps of VT0001 that were followed to determine additionality. Barrier analysis has been removed as it is not required.	The demonstration of additionality has been revised and no longer relies on the demonstration of barriers. CAR9 is closed.
CAR10: The common practice analysis presented in the PD does not comply with the requirements set in step 4 of the additionality tool.	The PD has been updated and an additional Annex added that reports on the current failure of similar activities to the project.	The demonstration of additionality has been revised and now presents a valid common practice analysis. Valid supporting evidence has been provided. CAR10 is closed.
CAR11: According to table 4 of the methodology, parameter α for U3 is equal to 0. In the ER calculations this is indicated as 0.5791768. The project proponent is requested to comply with the methodology with regard to the value of this parameter.	Parameter alpha is not used for baseline type U3, but it is, however, calculated when parameterizing the baseline emissions model. It was reported for the sake of completeness. Table 16 has been updated	The value of parameter alpha complies with the requirements of the methodology. CAR11 is closed.
CAR12: The value applied for parameter t_{PL} indicated in Appendix P and in the NER model (i.e. 10 592	Text in notes document updated. Error is a typo	The value applied for parameter t_{PL} indicated consistently between documents. CAR12 is closed.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
days) does not coincide with a crediting period of 30 years as calculated in the “parameters” sheet of the ER spreadsheet (10 957 days). The project proponent is requested to ensure consistency between project documents.		
CAR13: According to section 3 of the VCS PD template, the PD must describe the procedure to quantification baseline, project and leakage emissions and/or removals in accordance with the applied methodology, including all relevant equations, and explain and justify all relevant methodological choices (e.g., with respect to selection of emission factors and default values). The information presented in section 3 of the PD does not comply with this requirement. The project proponent is requested to include in the PD all the information required by the VCS template.	CAR 5 indicated that a number of sections be moved. This section now contains the information requested by the auditor, updates have also been included in Annex P and Annex Q	The calculation of baseline emissions through the cumulative emissions model and the soil emissions model has been further described in section 3.2 of the PDD. Calculation of leakage has likewise been further described in section 3.3 of the PD. CAR13 is closed.
CAR14: According to the methodology section 8.4.5, when a monitoring period spans more than one calendar year, NERs shall be allocated by year proportional to the number of calendar days in each year relative to the total number of days in the monitoring period. The calculations submitted have condensed the first 5 years (the first monitoring period) into 1 figure. For transparency, the project proponent	Table 19 has been updated to include the first five years GERS and NERS	Table 19 of the PD has been updated to include the first five years of GERS and NERS. CAR14 is closed.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
is requested to disaggregate these values so that all years are individually shown.		
CAR15: The ER spreadsheet contains the calculations of the cumulative baseline emissions from SOC, but refers to them as equation 27 (applicable for baseline scenario U1) rather than 28 (applicable to baseline scenario U3). For clarity, the project proponent is requested to refer to the correct equation from the methodology.	The NER Spreadsheet has been updated with the correct equation as per the auditor's request.	References to the equations in the methodology have been corrected in the NER calculation spreadsheet. CAR15 is closed.
CAR16: Section 4 of the VCS PD template list the information that project proponents are required to include in the PD, i.e. a list of parameters determined or available at validation in the format provided by the template, a list of parameters that will be monitored during the project's crediting period in the format provided by the template, and a description of the process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters (Data and Parameters Monitored). This information is missing from the PD. The project proponent is requested to comply with the requirement of the VCS PD template for what concerns the information that needs to be provided to stakeholders.	The validation and monitoring parameters have been transferred to the appropriate VCS tables including all the information of calculations and quality control. We request that the tables remain confidential.	The calculation of baseline emissions through the cumulative emissions model and the soil emissions model has been further described in section 3.2 of the PDD. Calculation of leakage has likewise been further described in section 3.3 of the PD. CAR16 is closed.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
CAR17: According to the VCS PD template, section 6 of the PD needs to summarize relevant outcomes from stakeholder consultations, and mechanisms for on-going communication. This information is missing from the PD. The project proponent is requested to include this information in the PD.	The PD has been updated with the required information and all comments from the CCB validation have been added to Annex F.	Stakeholders comments have been summarized in section 6 of the PD. the information presented in the PD is in line with the information collected on site through interviews with residents of the reference area. CAR17 is closed.
CAR18: The non-permanence risk assessment has not been described in a risk report based on the VCS template. The project proponent is requested to submit a non-permanence risk report using version 3.0 of the VCS risk assessment template.	The non-permanence risk assessment has been transferred to the VCS template and added to Annex S.	DNV was provided with a non-permanence risk assessment complying with VCS rules. CAR18 is closed.
CL1: The project proponent is requested to clarify in the PD whether the crediting period is fixed or renewable.	Text in the PD has been updated, the crediting period is renewable.	The PD now clearly indicates the crediting period is renewable. CL1 is closed.
CL2: According to paragraph 3.3.1 of the VCS AFOLU Requirements, projects shall have a credible and robust plan for managing and implementing the project over the project crediting period. The project proponent has submitted the conservancy's ecological management plan. However this extends to	The EMP plan has been updated as per the auditors request. See Annex Y	DNV has been provided with the conservancy's ecological management plan for the entire duration of the crediting period, i.e. until 2039. CL2 is closed.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
the period spanning from 2013 to 2017. The PP is requested to submit evidence that a robust plan for managing and implementing the project over the project's entire crediting period is also in place.		
CL3: The total project area indicated in the PD and in the ER calculations is 40.126 ha. However, the Title Deed submitted indicates an area of 39 951.3850 ha. The project participant is requested to clarify the reason behind this discrepancy.	The discrepancy between the title deed and the project proponent boundary amounts to 175 ha. This amount is a result of changes made to the boundary of the project area adjacent to the Chongwe and Mwambashi Rivers. The boundary used in the calculations was digitised by the project proponent and while every effort is made to match the title deed, the digitisation required along the rivers may differ from the title deed boundaries. The project proponent believes that the differences between the two values are negligible as most of the areas adjacent to the two rivers have been removed from the accounting area due to slope restrictions imposed by the project proponent.	The explanation provides is considered acceptable on the basis that interviews held on site with representatives of local authorities highlighted no issues with regard to land use rights /72/. CL3 is closed.
CL4: The project proponent is requested to clarify which of the options listed under paragraph 3.11.1 of the VCS Standard and relative to the different types of rights of use applies to the project activity.	The PD has been updated, subsection 4& 6 apply to the project. 4) A right of use arising by virtue of a statutory, property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions and/or removals (where such right includes the right of use of such reductions or 6) An enforceable and irrevocable agreement with the holder of the statutory, property or contractual right in the land, vegetation or conservational or management process that	The information provided in the PD with regard to the type of right of use is now considered complete. The options selected are compatible with the land ownership and land use documentation submitted to DNV /10//11//12//13/. CL4 is closed.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
	generates GHG emission reductions or removals which vests the right of use in the project proponent.	
CL5: The project proponent is requested to clarify which information is to be considered commercially sensitive in accordance with the VCS programme definitions, and how the treatment of this information by the project proponent complies with the requirements of paragraph 3.18.2 of the Project Standard and paragraph 4.2.11 of the VCS Registration and Issuance Process. Section 1.13.3 of the PD needs to be updated to reflect the project proponents' choice of how to handle sensitive information.	Completed and updated the PD.	Section 1.13 of the PD indicates what information has to be considered as commercially sensitive. The information inserted in the PD complies with relevant VCS requirements. CL5 is closed.
CL6: The project proponent is requested to indicate the temporal project boundary in the PD in accordance with the requirements of the methodology, i.e. project start date and project end date.	Project start and end dates have been included in the project document in section 3.2.1 and can also be seen as part of PDR.7	The PD indicates the temporal boundaries of the project, which coincide with the project's crediting period. CL6 is closed.
CL7: The PP is requested to clarify the inconsistency between the information in Appendix P and the "parameters" sheet ER calculation spreadsheet.	Inconsistencies between Appendix P and the PD have been updated and fixed	The parameters listed in Appendix P and in the NER calculation spreadsheet are now consistent. CL7 is closed.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
CL8: The project proponent indicated in earlier stages of the validation the intention to replace the default value for parameter λ_{SOC} – exponential soil carbon decay – with the values sourced from the analysis of actual soil samples from the project site. If this option is still the preferred one, the project proponent is requested to submit evidence for the new values, and update the ER calculations accordingly.	The default VCS value of 0.2 is being used.	The NER estimation is based on the selected 0.2 default value for λ_{SOC}. CL8 is closed.
CL9: According to section 8.1.1 of the methodology, baseline emissions from biomass are based on the average carbon stock in selected carbon pools from AGMT, AGOT, AGNT, BGMT, BGOT, and BGNT. Considering that the project considered 2 biomass carbon pools, AGOT and BGOT, the project proponent is requested to clarify why parameter B was given a value of 1 in Annex P of the PDD.	The number of carbon pools specified in Annex P was incorrect and has been changed to 3 to follow the information provided in the PD	Parameter B has been corrected to indicate the two biomass carbon pools selected. CL9 is closed.
CL10: Considering that the project considered 3 carbon pools, AGOT, BGOT, and SOC, the project proponent is requested to clarify why parameter C was given a value of 2 in Annex P of the PDD.	The project proponent has updated the value from 2 to 3 in appendix P	Parameter C has been corrected to indicate the three carbon pools selected. CL10 is closed.
	Evidence for the quantification of parameter q	The PP has submitted records of interviews

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
CL11: The project proponent is request to submit evidence for the value of 620 days attributed to parameter q.	has been added as Annex U.	held with residents specifically for the purpose of determining parameter q. The evidence submitted is considered acceptable. CL11 is closed.
CL12: From the project documents submitted, it is not clear how the value assigned to parameter T (1 461 days according to Appendix P) and T1 (8 956) were selected. The project proponent is requested to clarify how the values indicated in Annex P were reached.	The dated if function in Microsoft Excel was used to determine the values for parameter t (1461). This calculates the number of days from project start date to the end of the first monitoring period. The value <i>ti</i> refers to the length of the historic reference period which spans 1984-06-29 to 2009-05-01. The value of 8956 is incorrect and has now been updated to 9072 . Initially a later date first image was used for viability study purposes and the value was not updated when a later scene was used.	The explanation provided is considered acceptable. CL12 is closed.
CL13: From the project documents submitted, it is not clear how the value assigned to parameter Wi (0.0000641 according to Appendix P). The project proponent is requested to clarify how the value indicated in Annex P was reached.	Text added to section 3.2.5.3 indicating how the value <i>wi</i> was calculated using equation A.6 of VM0009. The parameters table has also been updated.	Information on how parameter Wi has been calculated is provided in Appendix P. CL3 is closed.
CL14: The calculation of the decay emission model for BGB presented in the calculation spreadsheet could not be matched with the calculations described by equation F.10 of the methodology. The project proponent is requested to clarify how the decay emission model for BGB was produced.	The monitoring report (MR.32) has been updated with an explanation and we have suggested a correction to equation F.10. .	The explanation provided is considered acceptable. CL14 is closed.
	The text has been updated to clarify that all	The explanation provided is considered

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
CL15: Since for this project the reference area (where drivers of deforestation have been identified and are being mitigated through community projects) largely overlaps with the proxy area (where residual biomass is monitored for the quantification of baseline emissions), the project runs the risk that deforestation mitigation activities, when fully operational, may interfere with the measurements of the residual baseline biomass in the baseline scenario, inflating recorded residual biomass, and resulting in a progressively significant underestimation of the difference in carbon sequestration between baseline and project scenarios. The PP is requested to clarify how it will prevent the increase in biomass due to deforestation mitigation activities implemented in the reference area interfering with measurements of residual biomass in the proxy area.	mitigation activities are and will be geo-referenced to avoid overlapping with proxy area carbon stock measurements.	acceptable. CL15 is closed.
CL16: The determination of parameters U_{EM}, U_B and U_P in the inventory and in the ER spreadsheet are not transparently shown. The project proponent is requested to present the calculation on uncertainty in a transparent manner, so that it can be linked to the final confidence deduction.	The PD, MR and Annex I & J have been updated to clearly show how U_{em}, U_b and U_p were calculated.	Relevant information has been inserted in the PD, MR, and relevant Appendices. CL16 is closed.
	Annex I has been updated to clearly show how	The carbon inventory now transparently shows

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
CL17: The calculation of the average carbon stock per ha is not transparently shown in the inventory spreadsheet. The project proponent is requested to present the calculations so that the equations used can be observed.	all averages have been calculated.	the calculations performed. CL17 is closed.
CL18: Although project emissions from burned biomass have been estimated to be 0 based on the records collected in the first 5 years of the project's lifetime, intense fires causing trees to burn may occur within the project's crediting period. The project proponent is requested to clarify why parameters relevant to burned wood (i.e. w, and B_b) are indicated as not applicable in Appendix Q.	The project proponent believe that while fire may have a negative impact on the carbon pools discussed in this document in the future, we believe that these impacts will be negligible. Based on field observations, satellite based assessment as well as cited literature, all indications are that fires will occur in the future however, they will not have a substantial negative impact on the carbon pools assessed. In the interest of preserving the conservative nature of the project, proponents will continue to monitor fires occurring in the project area and will assign any unlikely losses to the project leakage. In addition, the values for w and B_b in the monitoring variables table will be changed to 0 to reflect the impact fire has on the carbon pools assessed. This has also been elaborated on in the non-permanence risk assessment.	The explanation provided is considered acceptable based on the monitoring arrangements in place. CL18 is closed.
CL19: The project proponent is requested to justify why the risk of encroachment has been assessed to be 0 given the encroachment pressure threatening the project area.	50% of the project area carbon stocks are not under threat from ongoing encroachment. Less than 10% of the property has been encroached.	The explanation provided is considered acceptable. CL19 is closed.
CL20:	The Non-Permanence risk report has been updated.	The updated information in the non-permanence risk assessment is considered acceptable.

Corrective action and/ or clarification requests	Response by project proponent(s)	Validation conclusion
The documentation for right of use submitted by the project proponent indicates that land ownership and resource access/use rights are not held by same entity. The project proponent is requested to clarify why this indicator has been given a score of 0.		CL20 is closed.

Table 4 Forward action requests

Forward action request	Response by project proponent(s)
No FAR have been identified	