DNV·GL

3 July 14

VALIDATION REPORT: "KULERA LANDSCAPE REDD+ PROJECT FOR CO-MANAGED PROTECTED AREAS, MALAWI" IN MALAWI

REPORT N°2014-9305

REVISION NO. 01

Project Title	Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi
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Summary:

Det Norske Veritas (U.S.A.) Inc. (DNV GL) has performed a validation of the project activity “Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi” in Malawi to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. The validation was performed on the basis of VCSA requirements for the VCS project, as well as criteria given to provide for consistent project operations, monitoring and reporting.

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

The project consists in the implementation project activities in the boundaries of three protected areas which seek to mitigate the deforestation and degradation caused by subsistence driven activities. Hence, the project generated GHG emission reductions. The project has applied the VCS methodology “Carbon Accounting for Mosaic and Landscape-scale REDD Projects", Version 2.0.

In summary, it is DNV GL’s opinion that the project activity “Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi” as described in the VCS PD, dated 03 July 2014, meets all relevant VCSA requirements for the VCS project and correctly applies the VCS methodology ““Carbon Accounting for Mosaic and Landscape-scale REDD Projects””, Version 2.0. Hence, DNV GL recommends the registration of the project as a VCS project activity.

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1 INTRODUCTION

Terra Global Capital, LLC has commissioned Det Norske Veritas (U.S.A), Inc (DNV GL) to perform a validation of the Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi in Malawi (the project). This report summarizes the findings of the validation of the project, performed on the basis of VCSA criteria for the VCS project, as well as criteria given to provide for consistent project operations, monitoring and reporting. VCSA criteria refer to VCS program documents and policy announcements.

1.1 Objective

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

1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the VCS project document (VCS PD). The VCS PD /1/ is reviewed against the criteria stated in the VCS Standard Version 3.4 /16/ and the relevant documents and policy announcements made by the VCSA, including the VCS methodology ""Carbon Accounting for Mosaic and Landscape-scale REDD Projects"", Version 2.0 /14/.

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

1.3 Level of Assurance

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

In addition, DNV GL applies materiality of 5% per cent in accordance with the requirements in VCS Standard Version 3.4 /16/.

1.4 Summary Description of the Project

Project Proponents (Parties):	- Department of Parks and Wildlife (DPW) - Nyika-Vwaza Association (NVA) - Nkhotakota Wildlife Reserve Association (NAWIRA) - Terra Global Capital, LLC (TGC)
Title of project activity:	Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi

Baseline and monitoring methodology	VM0006 Version 2.0
Location of the project activity	The Project Area is located in 5 km zones inside the boundaries of three key protected areas in central and northern Malawi, Nyika National Park, Vwaza Wildlife Reserve, and Nkhotakota Wildlife Reserve.
Project's crediting period:	1 October 2009 to 30 September 2039

2 VALIDATION PROCESS

2.1 Method and Criteria

2.1.1 *Method*

The validation was based on the recommendations in ISO 14064-3:2006 /20/, ISO 14065:2007 /21/ as required by VCS Standard Version 3.4. Were applicable the validation was also based on the recommendations in the Validation and Verification Manual Version 3.0 /23/.

The validation consisted of the following three phases:

I a desk review of the project design documents
II follow-up interviews with project stakeholders
III the resolution of outstanding issues
IV Internal quality control
V Issuance of the final validation report and opinion.

Validation team

The validation team is in accordance with the requirements of the ANSI Accreditation.

				Type of involvement					
Role	***Last Name***	***First Name***	***Country***	Desk review	Site visit / Interviews	Reporting	Supervision of work	Technical review	TA 14.1 competence
Project Manager	Bachamanda	Shruthi	USA				✓		
Team leader (Validator)	Espejo	Andrés Bernabé	Spain	✓	✓	✓			✓
Technical reviewer	Aalders	Edwin	Norway					✓	✓

2.1.2 *Criteria*

The VCS PD /1/ has been reviewed against the criteria stated in the VCS Standard Version 3.4 Requirements Document, and the approved baseline and monitoring methodology VM0006 (Version 2.0) /14/.

2.2 Document Review

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

2.2.1 *Documentation provided by the project proponents*

Ref	Name of Document
/1/	Terra Global Capital, LLC: *VCS-PD for project activity "Kulera Landscape REDD+* Project for Co-Managed Protected Areas, Malawi*" in Malawi, v*ersion 1.0 dated 1 September 2013 first version received from the project proponent and version 14 dated 03 July 2014
/2/	Terra Global Capital, LLC. Non-Permanence risk assessment report, version 10, 3 July 2014
/3/	Terra Global Capital, LLC. GIS data and information: - ESRI Shapefiles of general geographical information (i.e. roads, rivers, political limits, protected areas, etc.) - ESRI Shapefiles with limits of project boundary, leakage area and reference region. - LULC Maps for Nyika, Vwaza and Nkhotakota project areas for three historical periods (2000, 2002/2003 and 2009).
/4/	Various entities. Signed contracts and agreements: - Co-Management Agreement between Department of Parks and WildlifeDepartment of Parks and Wildlife and Nyika Vwaza Association - Agreement for the carbon development, carbon rights and benefits sharing with respect to emission reductions for the Kulera biodiversity landscape REDD+ project in co-managed national protected areas in Malawi by and between the Government Of Malawi; the Nkhotakota Wildlife Reserve Association; and Terra Global Capital, LLC, 20 September 2013 - Agreement for the carbon development, carbon rights and benefits sharing with respect to emission reductions for the Kulera biodiversity landscape REDD+ project in co-managed national protected areas in Malawi by and between the Government Of Malawi; the Nyika-Vwaza Association; and Terra Global Capital, Llc, 20 September 2013
/5/	Terra Global Capital, LLC. Various financial information and data: - Carbon Development Costs, v8-0 Kulera v0-4 - Financial Projections v8-0 Kulera v0-4 - Kulera REDD Project Implementation Budget - 60 years for PD v0-2
/6/	Total Land Care. Annual and quarterly reports on project implementation issued to USAID. - Year 1 Annual and 4th Quarter Report, October 2010 - Year 2 Annual Report, October 2011 - Year 3 Annual and 4th Quarter Report, October 2012 - Year 4 Quarter 3 Quarterly Report April -June 2013, July 2013
/7/	Total Land Care. Information on local stakeholder consultations, surveys and Participatory Rural Appraisal.

Ref	Name of Document
	- Summary of Consultations, September 2013 - HH Survey Report v2, 10 June 2011 - PRA Field Report, 22 July 2012
/8/	Terra Global Capital, LLC. Standard Operating Procedures (SOPs): - SOP Biomass Inventory v7-0, May 2012 - SOP Bunda College Walkley Black Procedure, Year 2012 - SOP for Boundary Demarcation - Kulera v11-1, May 2012 - SOP PRA Kulera v6-0, May 2012 - SOP Terralytics Classification Manual Kulera v1-1, September 2011
/9/	Terra Global Capital, LLC. Field Inventory data sheets: - Plots visited: NFOR_008, NFOR_009, NFOR_021, NFOR_008, NKHT_011, NKHT_106, NYKA_039, VWZA_016 - Additional data transfer check: NYKA – 220, NYKA – 221, NYKA – 223, NYKA - 239
/10/	Terra Global Capital, LLC. ER and Forest Inventory spreadsheet: - Gross Emission Reductions for Nyika, Vwaza and Nkhotakota, Year 2013 - Combine calcs overview tables, Year 2013 - Kulera Biomass Data, Year 2013
/11/	Dr Chimwemwe Mawaya (Team Leader), Dr Marlene Chikuni, Mr. James Chimphamba and Mr. Zuze Dulanya. Bio-Physical Inventory For The Kulera Biodiversity Project Final Copy: Volume I. Year 2011.
/12/	Aprovecho Research Center: Consultancy report on possible improvements in the cookstove component of the REDD Kulera project. Year 2012
/13/	Total Land Care: Monitoring and Evaluation (E&M) spreadsheets which evidences cookstove monitoring: - RU consolidated Kulera data base by EPA and district - Nkhotakota kulera consolidated cook stoves data 2010-13 - Kasungu Kulera consolidated cook stoves - RUMPHI ZONE KULERA REPORT (OCT 2010-JUNE 2011) - Kasungu REPORT JAN-MARCH 2013 - KK TLC KULERA BY SITE 2012 3rd quarter revised 2

The main changes between the VCS PD version 1.0 of 1 September 2013 assessed during the desk review and the VCS PD version 14 of 03 July 2014 submitted to registration are the following:

- Changes consequence of CARs and CLs.

2.2.2 *Methodologies, tools and other guidance by VCSA*

Ref	Name of Document
/14/	Terra Global Capital: *Methodology* VM0006 “Carbon Accounting for Mosaic and Landscape-scale REDD Projects", Version 2.0
/15/	VCSA: VT0001 – “Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities” (Version 3.0), 1 February 2012

/16/	VCSA: VCS standards: VCS Standard Version 3.4, 8 October 2013
/17/	VCSA: AFOLU Non-Permanence Risk tool: VCS Version 3.2, 4 October 2012
/18/	VCSA: 'Program Definitions: VCS Version 3.5', 8 October 2013
/19/	VCSA: AFOLU requirements: VCS Version 3.4, 8 October 2013
/20/	ISO 14064-3:2006: Greenhouse gases — Part 3: Specification with guidance for the validation and verification of greenhouse gas assertions, First edition, 1 March 2006
/21/	ISO 14065:2007: Greenhouse gases — Requirements for greenhouse gas validation and verification bodies for use in accreditation or other forms of recognitions, First edition, 15 April 2007
/22/	CDM Executive Board: 'Combined tool to identify the baseline scenario and demonstrate additionality in AR CDM project activities' (version 1), Annex 19, EB35
/23/	VCSA: *Validation and Verification Manual*. Version 3.0

2.2.3 *Documentation used by DNV GL to validate / cross-check the information provided by the project proponents*

Ref	Name of Document
/24/	Government of Malawi. Applicable legislation: - National parks and wildlife act (1992), 4 May 1992 and modifications made in 2004 - Customary Land Bill, 2012
/25/	Environmental Affairs Department - Ministry of Natural Resources, Energy and Environment. Malawi Fourth Country Report To the Convention on Biological Diversity (CBD), 30 June 2010
/26/	ESRI : Change matters – On-line visor showing NDVI change between 1975 and 2000, http://changematters.esri.com/compare
/27/	Henry, M., Picard, N., Trotta, C., Manlay, R.J., Valentini, R., Bernoux, M. & Saint-André, L. 2011. Estimating tree biomass of sub-Saharan African forests: a review of available allometric equations. Silva Fennica 45(3B): 477–569.
/28/	Timothy Pearson, Sarah Walker and Sandra Brown. 2005. Sourcebook for Land Use, Land-Use Change and Forestry Projects.
/29/	Ghislain Vieilledent, Romuald Vaudry, Samuelson F. D. Andriamanohisoa O. Sarobidy Rakotonarivo, H. Zafyson Randrianasolo, Hasina N. Razafindrabe, C´ecile Bidaud Rakotoarivony, Johannes Ebeling, and Maminiaina Rasamoelina. 2011. Allometric models, from scaling theory to improved biomass and carbon stock estimates in tropical forests
/30/	Zanne, A.E., Lopez-Gonzalez, G.*, Coomes, D.A., Ilic, J., Jansen, S., Lewis, S.L., Miller, R.B., Swenson, N.G., Wiemann, M.C., and Chave, J. 2009. Global wood density database. Dryad. Identifier: http://hdl.handle.net/10255/dryad.235.
/31/	IPCC, 2003: *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, prepared by the National Greenhouse Gas Inventories Programme, Jim Penman, Michael Gytarsky, Taka Hiraishi, Thelma Krug, Dina Kruger, Riitta Pipatti, Leandro Buendia, Kyoko Miwa, Todd Ngara (eds). Published: IGES, Japan. URL: http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html IPCC (2006): *2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme*. Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds).Published: IGES, Japan

Ref	Name of Document
/32/	Forest Carbon Partnership Facility: http://www.forestcarbonpartnership.org/fcp/
/33/	UN-REDD programme: http://www.un-redd.org/
/34/	Clark, D. 2002. Are Tropical Forests an Important Carbon Sink? Reanalysis of the Long-Term Plot Data. Ecological Applications, Vol. 12, No. 1 (Feb., 2002), pp. 3-7.
/35/	Clark, D.B., D.A. Clark. 2000. Landscape-scale variation in forest structure and biomass in a tropical rain forest. Forest Ecology and Management 137 (2000) 185±198.
/36/	Crook MJ, Ennos AR, Banks JR. 1997. The function of buttress roots: a comparative study of the anchorage systems of buttressed (Aglaia and Nephelium ramboutan species) and non-buttressed (Mallotus wrayi) tropical trees. Journal of Experimental Botany, 48(9): 1703−1716.
/37/	Mehdi AH, C. Kundu and. Q. Chowdhury2012. Patterns of tree buttressing at Lawachara National Park, Bangladesh. Journal of Forestry Research (2012) 23(3): 461−466.
/38/	Newbery DM, Schwan S, Chuyong GB, Van Der Burgt XM. 2008. Buttress form of the central African rain forest tree Microberlinia bisulcata, and its possible role in nutrient acquisition. Trees, 23(2): 219−234
/39/	Phillips, O. L., Y. Malhi, B. Vinceti, T. Barker, S. L. Lewis, N. Higuchi, W. F. Laurance, P. Nunez Vargas, R. Vásquez Martinez, S. Laurance, L. V. Ferreira, M. Stern, S. Brown and J. Grace. 2002. Changes in Growth of Tropical Forests. Evaluating Potential Biases. Ecological Applications, 12(2), 2002, pp. 576-587.
/40/	RECOFTC 2012. RECOFTC - WCS - FA - IGES Action Learning on Community Carbon Accounting Project - Cambodia FY2011 Summary Report.
/41/	Richter W. 1984. A structural approach to the function of buttresses of Quararibea asterolepis. Ecology, 65(5): 1429−1435.
/42/	Young TP, Perkocha V. 1994. Treefalls, crown asymmetry and buttresses. Journal of Ecology, 82(2): 319−324.
/43/	Walker, S.M. and Desanker, P.V. 2004. The impact of land use on soil carbon in Miombo Woodlands of Malawi. Forest Ecology and Management 203 (2004) 345–360
/44/	Malimbwi, R.E., Solberg, B. & Luoga, E. 1994. Estimation of biomass and volume in miombo woodland at Kitulangalo Forest Reserve, Tanzania.
/45/	Ryan, C. M., Williams, M. and Grace, J. (2011), Above- and Belowground Carbon Stocks in a Miombo Woodland Landscape of Mozambique. Biotropica, 43: 423–432. doi: 10.1111/j.1744-7429.2010.00713.x
/46/	Williams, M, Ryan, CM, Rees, RM, Sambane, E, Femando, J & Grace, J 2008, 'Carbon sequestration and biodiversity of re-growing miombo woodlands in Mozambique' Forest Ecology and Management, vol 254, no. 2, pp. 145-155., http://dx.doi.org/10.1016/j.foreco.2007.07.033
/47/	Guo, L. B. and Gifford, R. M. (2002), Soil carbon stocks and land use change: a meta analysis. Global Change Biology, 8: 345–360. doi: 10.1046/j.1354-1013.2002.00486.x
/48/	Kerr, A. 2005. Disappearing forests in Malawi - Causes and solutions. EEP 153 Research Project
/49/	Chavan, B. and Rasal, G. 2012. Total Sequestered Carbon Stock of Mangifera indica. Journal of Environment and Earth Science. Vol 2, No.1, 2012
/50/	GOFC-GOLD, 2012, *A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals caused by deforestation, gains and*

Ref	Name of Document
	losses of carbon stocks in forests remaining forests, and forestation. GOFC-GOLD Report COP18 version 1, (GOFC-GOLD project office, Natural Resources Canada, Alberta Canada).
/51/	Voluntary Carbon Standard Association: *REDD Methodology Modules (REDD-MF),* Approved VCS Methodology VM0007 Version 1.2
/52/	Jerome Chave, Richard Condit, Salomon Aguilar, Andres Hernandez, Suzanne Lao and Rolando Perez. 2004. Error propagation and scaling for tropical forest biomass estimates. Phil. Trans. R. Soc. Lond. B (2004) 359, 409–420
/53/	J. Chave, C. Andalo, S. Brown, M. A. Cairns, J. Q. Chambers, D. Eamus, H. Folster, F. Fromard, N. Higuchi, T. Kira, J.-P. Lescure, B. W. Nelson, H. Ogawa, H. Puig, B. Riéra, T. Yamakura. 2005. Tree allometry and improved estimation of carbon stocks and balance in tropical forests. Oecologia (2005) 145: 87–99
/54/	ECOFYS: Gold Standard PD: Integrated Biomass Energy Conservation Project - Malawi. Version: 6. Dated 2 November 2012
/55/	The Sigma Global Company Pty Ltd and Vimiti Limited. CDM PDD Improved Cook Stove Project 1, Nkhata Bay District, Malawi. Version 1.0. 14 May 2013.
/56/	Wilson Ancelm Mugasha, Tron Eid, Ole Martin Bollandsås, Rogers Ernest Malimbwi, Shabani Athumani Omari Chamshama, Eliakimu Zahabu, Josiah Zephania Katani. 2013. Allometric models for prediction of above- and belowground biomass of trees in the miombo woodlands of Tanzania. Forest Ecology and Management 310 (2013) 87–101

2.3 Interviews

In the period from 11 November 2013 to 16 November 2013 DNV GL conducted various interviews with the project proponent's staff, staff of other project entities involved in the project, and other stakeholders such as staff working for thenational REDD+ Secretariat.

Ref.	Date	Name	Organization	Topic
/57/	11 November 2013	James Sadrack (Chairman)	NAWIRA	- Organisation of association - FPIC - Agents and drivers of deforestation
	11-14 November 2013	Duncan Mkandawire (Chairman)	NVA	
/58/	11-16 November 2013	Blessings Mwale (Chief of Party – Kulera Biodiversity Project)	TLC	- Project description and project's history - Baseline scenario (Drivers of deforestation) - Implementation of project activities - Monitoring of project activities
	11 November 2013	Trent Bunderson (Executive Director)		
	11 November 2013	Zwide D. Jere (Managing Director)		
/59/	11-16 November	Erica Meta (Forester)	TGC	- Forest inventory - GHG accounting

Ref.	Date	Name	Organization	Topic
	2013			- Other carbon aspects
	11-16 November 2013	Leslie Bolick (Consultant)		
	11 November 2013	Cheri Sugar (Director)		- Project description and project's history - Institutional arrangements
/60/	11 November 2013	Brighton Kumchedwa (Director – Chair)	NDPW	- History of protected areas - Applicable Laws and regulations - Drivers of deforestation
		Ramosh Jiah (Deputy Director)		
/61/	11 November 2013	Alexander Phiri (Head of Department)	Faculty of Development Studies	- PRA - Drivers of deforestation
/62/	12-13 November 2013	Obedi G. Mkandawire (Zone Manager)	TLC	- Implementation and monitoring of project activities - Drivers of deforestation - Validity of reference region
		ThomasMilanue (Field coordinator)	TLC	- Implementation and monitoring of project activities
/63/	12-14 November 2013	Henry Kadauma (Extension Officer – Nyika and Vwaza)	DPW	- Past trends in deforestation - Drivers of deforestation - Validity of reference region
	14 November 2013	George Banda (Vwaza Wildlife Reserve Manager having worked previously in Nyika National Park)	DPW	- Past trends in deforestation - Drivers of deforestation - Validity of reference region - System of grievances
	15 November 2013	Mutheto Ndhlamini (Extension Officer Nkhotakota having worked previously in Nyika and Vwaza)	DPW	- Past trends in deforestation - Drivers of deforestation - Validity of reference region - System of grievances
/64/	13-15 November 2013	Twalibu Tandwe (Team Leader Forest Inventory)	Biological Sciences Department – Chancellor College	- Forest inventory
		Makina Mawaya (Team Leader Forest Inventory)		

Ref.	Date	Name	Organization	Topic
	15 November 2013	Cmwe Mawaya (Head of Department / Lecturer)		
/65/	11 November 2013	John Kerkering (REDD National Coordinator)	Forestry Department	- Drivers of deforestation - Validity of reference region - REDD institutional arrangements - Data availability (i.e. allometric equations, etc.)
/66/	12-16 November 2013	Members of 4 villages and members of PRA of villages within the same group of villages: 1. Nkchamayamaji (Nyika) 2. Chimlu (Nyika) 3. Kapatakafinye (Nyika) 4. Bongowongo (Vwaza) 5. Mphalamando (Nkhotakota)	Local communities	- Drivers of deforestation - Validity of reference region - Past trends in deforestation - Impacts of project activity - FPIC - Complaints and grievances

2.4 Site Inspections

On 12-15 November 2013, a field inspection and interviews on-site were carried out in the three different project areas and their surroundings. As part of this inspection the following activities were performed:

- ✓ An assessment of the implementation and operation of the proposed project activity through visual inspection and through interviews with the project proponent's staff.
- ✓ Confirmation of the applicability of the methodology.
- ✓ Assessment of the project boundaries and the stand information using a Pocket PC with the geographic information uploaded and connected to a GPS receiver.
- ✓ Assessment of the accuracy in the LULC maps and other cartography;
- ✓ Assessment of the implementation of the SOPs of forest inventory;
- ✓ Assessment of the monitoring provisions;

2.5 Resolution of Findings

The objective of this phase of the validation is to resolve any outstanding issues which need be clarified prior to DNV GL's positive conclusion on the project design. 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 validation protocol consists of four tables. The different columns in these tables are described in the figure below. The completed validation protocol for the project activity “Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi” in Malawi is enclosed in Appendix A to this report.

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

(a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions ;
(b) The 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.

During the validation a total of 18 CARs and 16 CLs were raised. No FARs were raised. All findings were closed during the validation.

Validation Protocol Table 1: Requirement Checklist				
Checklist question	***Reference***	***Means of verification (MoV)***	***Assessment by DNV***	***Draft and/or Final Conclusion***
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the VCS-PD	*Gives reference to documents where the answer to the checklist question or item is found.*	*Means of verification (MoV) are **document review (DR)**, **interview (I)** or any other follow-up actions (e.g., on site visit and telephone or email interviews) and **cross-checking (CC)** with available information relating to projects or technologies similar to the proposed VCS project activity under validation.*	*The discussion on how the conclusion is arrived at and the conclusion on the compliance with the checklist question so far.*	*OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements. A c**orrective action request (CAR)** is raised when project participants have made mistakes, the VCS requirements have not been met or there is a risk that emission reductions cannot be monitored or calculated. A **clarification request (CL)** is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met. A **forward action request (FAR)** during validation is raised to highlight issues related to project implementation that require review during the first verification of the project activity.*

Validation Protocol Table 2: Non-permanence risk assessment checklist			
Checklist question	***Value report***	***Assessment by DNV***	***Draft and/or Final Conclusion***
The various requirements in Table 2 are linked to checklist questions the project's risk should be assessed against.	*Gives the value provided in the non-permanence risk report*	*The discussion on how the conclusion is arrived at and the conclusion on the compliance with the checklist question so far.*	*OK is used if the information and evidence provided is adequate to demonstrate compliance with CDM requirements.* *A c**orrective action request (CAR)** is raised when project participants have made mistakes, the VCS requirements have not been met or there is a risk that emission reductions cannot be monitored or calculated. A **clarification request (CL)** is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met. A **forward action request (FAR)** during validation is raised to highlight issues related to project implementation that require review during the first verification of the project activity.*

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Corrective action and/ or clarification requests	***Ref. to checklist question in table 2***	***Response by project participants***	***Validation conclusion***
*The **CARs** and/ or **CLs** raised in Table 2 are repeated here.*	*Reference to the checklist question number in Table 2 where the CAR or CL is explained.*	*The responses given by the project participants to address the CARs and/or CLs.*	*The validation team's assessment and final conclusions of the CARs and/or CLs.*

Validation Protocol Table 4: Forward Action Requests		
Forward action request	***Ref. to checklist question in table 2***	***Response by project participants***
The FARs raised in Table 2 are repeated here.	*Reference to the checklist question number in Table 2 where the FAR is explained.*	*Response by project participants on how forward action request will be addressed prior to first verification.*

Figure 1: Validation protocol tables

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 the VCS requirements for registration.

No Forward Action Requests were identified.

3 VALIDATION FINDINGS

3.1 Project Details

3.1.1 *Project proponent*

According to the VCS PD /1/ the project proponents are:

- Department of Parks and WildlifeDepartment of Parks and Wildlife (DPW) who has the control over the project area.
- Nyika-Vwaza Association (NVA). Community Association that represents the villages adjacent in the Project Zone around the Nyika National Park, Vwaza Wildlife Reserve.
- Nkhotakota Wildlife Reserve Association (NAWIRA). Community Association that represent the villages adjacent in the Project Zone around the Nkhotakota Wildlife Reserve.
- Terra Global Capital, LLC (TGC) a project proponent as an investor in the project and supporting the registration, issuance and marketing of emission reductions, also acting as implementation partner.

Other entities involved in the project have been identified:

- Total Land Care (TLC): It is an implementation partner in charge of project Identification and Design, Implementation of REDD+ Activities and Livelihoods Programs.
- CARE, Malawi: It is an implementation partner who has focused on supporting the formation of Village Savings and Loan groups including training on economic activities, selection, planning and management.
- Sacranie, Gow & Company: Legal advisor.
- Dentons US LLP: Legal advisor.
- United State Agency for International Development (USAID): Funder of the initial project activities.

DNV GL confirmed that the VC-PD /1/ includes full contact details of these entities.

3.1.2 *Project Activity and Eligibility of the Project*

- ***Project activities***

The proposed project activity consists in the implementation of a REDD activity located in 5 km zones inside the boundaries of three key protected areas in central and northern Malawi, Nyika National Park, Vwaza Wildlife Reserve, and Nkhotakota Wildlife Reserve, covering aproximately 167 000 ha of forests /1/. These protected areas having limited resources for governance and are under increasing pressure from local populations, which have intensified and expanded their exploitation of forest resources to unsustainable levels /1/.

As part of the validation, DNV GL was able to confirm that the information and considerations reported in the VCS PD /1/ are complete and accurate.

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

The PD /1/ clearly states the Sectoral scope and project type. These are:

- Sectoral Scope: AFOLU, 14

- Category type: Reducing Emissions from Deforestation and Degradation (REDD)
- Project activity: Avoided Unplanned Mosaic Deforestation and Degradation (AUMDD)
- The project is a grouped project

Hence, the project is eligible and it has been classified in accordance with the VCS requirements.

- ***Project location***

The proposed REDD activity is located within three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. The proposed project targets all forested areas within 5 km inside those protected areas. The accuracy of these limits was confirmed during the interviews held with the different staff of the DPW /60//63/. These limits have been provided in a KLM file to be uploaded.

DNV GL checked the VCS PD and confirms that the VCS PD includes the following information:

- The proposed project activity is located within three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. DNV GL confirms that this is correct.
- Maps of the project area, of the areas eligible as VCS project, and of the polygons that are part of the project boundary are included in the VCS-PD.
- The project proponent has provided a map of each polygon that constitutes the project area.
- The project proponent includes information on the details of ownership. The project proponent is the DPW who has the control on any declared National Park or Widlife Reserve in accordance to the National parks and wildlife act (1992) /24/.

DNV GL confirmed that the VCS PD provides a complete project location description which is in compliance with paragraph 3.4.1 of AFOLU requirements: VCS Version 3.4.

- ***Project start date***

The project start date is 1 October 2009 which is the date in which the first project activities for reducing emissions took place by TLC, i.e. date in which TLC started to implement project activities as part of USAID's funded project /1/. The accuracy of this date was effectively confirmed by DNV GL through the Year 1 implementation report which indicates the commencement of activities in October 2009 /6/.

DNV GL confirmed that the project start date is in accordance with VCS requirements.

3.1.3 *Project Scale and Crediting Period*

- ***Project scale and estimated GHG emission reductions or removals***

The project is classified as per §3.9.1 of VCS Standard Version 3.4 as a 'project' as the estimated annual GHG emission removals amount to 210 421 tCO_2e per year in crediting period, which are less than 300 000 tCO_2e per year.

- ***Project crediting period***

The project crediting start date is equal to the start date of the project activity, i.e. the date on which activities that lead to the generation of GHG emission reductions or removals are implemented. The chosen crediting period is of 30 years /1/ which is in accordance with the VCS Standard Version 3.4 which sets a minimum of 20 years up to a maximum 100 years for AFOLU projects.

The project proponent has in place a robust operating plan in order to manage the project for the whole crediting period. This is confirmed by the agreements in place which establish clearly the roles and

responsibilities and the project operation for the whole crediting period /4/ and as confirmed by the business plans for the project activities /5/.

DNV GL confirmed during the site visit that these plans are in place.

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

The applicable local laws and regulations related to the project are listed in the VCS PD. DNV GL confirmed during the interview held with staff of the DPW /60//63/ and with the national REDD coordinator /65/ that local laws and regulations do not restrict or regulate the type of project activity, so this is in compliance with applicable laws and regulations.

DNV GL confirmed during the interview held with staff of the DPW /60//63/ and with the national REDD coordinator /65/ that local laws and regulations do not restrict or regulate the type of project activity, so this is in compliance with applicable laws and regulations.

3.1.5 *Ownership and other programs*

- ***Right of use***

The proposed project activity is located within three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. According to the National parks and wildlife act (1992) /24/ these lands are public lands being under control of the Government through the Department of Parks and WildlifeDepartment of Parks and Wildlife (DPW) who has the effective control on these areas. Since DPW is the project proponent it would be confirmed that the project proponent has a right of use arising under law. Furthermore, the other three project proponents /4/ and DPW have signed an agreement for the carbon development, carbon rights and benefits sharing with respect to emission reductions for the Kulera biodiversity landscape REDD+ project whereby the latter agrees to vest the right of use in a independent entity participated by all four project proponents which will manage the revenues coming from the commercialisation of carbon credits. Therefore, the other 3 project proponents would have 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 removals and the project proponent has not been divested of such right of use).VCS Standard Version 3.4 requirements.

- ***Emissions trading programs and other binding limits***

The proposed project activity is a REDD project activity, and it is located in a non-Annex I country of the UNFCCC

Therefore, the GHG removals generated would not be part of an emission trading Program, nor it is located in a jurisdiction or sector with binding limits.

- ***Participation under other GHG programs***

The proposed project activity does not participate in any other GHG program which involves issuance of carbon credits. As DNV GL was able to confirm, the project proponent has the intention to validate the proposed project activity against the Climate, Community and Biodiversity Standards; this GHG programme does not involve issuance of carbon credits.

- ***Other forms of environmental credit sought or received***

The proposed project activity does not generate another form of environmental credit.

The validity of all this information were confirmed during the meeting held with the REDD country coordinator /65/.

- ***Rejection by other GHG programs***

The proposed project activity has not been rejected in any other GHG program.

3.1.6 *Additional information relevant to the project*

- ***Eligibility criteria***

In line with paragraph 3.4.9 of the AFOLU requirements: VCS Version 3.4 "*grouped projects shall include one or more sets of eligibility criteria for the inclusion of new project activity instances*". As such the project proponent has defined a series of eligibility criteria for the inclusion of new project activity instances.

The eligibility criteria defined for the inclusion of instances have been validated by DNV:

Eligibility criteria of Grouped Project	Rationale
1) The project must meet the conditions set in section 9.3.6 of the Methodology VM0006, and procedures followed must be documented in the Monitoring Report.	This eligibility criterion will serve to assure that the instances comply with the applicability criteria of the methodology.
2) Measurements must follow Standard Operating Procedures (SOPs) developed under the Kulera Project. Using SOPs guarantee consistency across different field crews an in different Project Areas. This guarantees reliable, replicable data over the life of the project. SOPs may be updated to improve quality of the sampling, given that the same carbon pools are measured, unless it is more conservative to exclude a specific carbon pool. An SOP or a sampling method may change to adapt to new conditions given that the end result (data collected) is consistent with the original SOP. If SOPs are updated, all instances in the project must use the same measurement procedure in the updated SOP at the next required sampling event.	This eligibility criterion will serve to ensure that the project applies the technology or measure described in the VCS PD of the grouped project /1/.
3) The technologies and techniques applied in the PD must be followed through the life of the project and on new instances unless more accurate data becomes available. It is expected that data quality, accuracy, and availability will improve over time. As these new datasets become available and meet the	This eligibility criterion will serve to ensure that the project applies the technology or measure described in the VCS PD of the grouped project /1/.

Eligibility criteria of Grouped Project	Rationale
minimal requirements of the methodology they may be followed to measure any new instances.	
4) The new instances are subject to the baseline scenario as described in the PD. At a baseline update, all new instances must also follow the new baseline. The baseline update must be applicable to all instances and must be documented in the Monitoring Report.	This eligibility criterion will serve to ensure that the instance determines the baseline scenario following the same procedures as provided in the VCS PD /1/.
5) The new instances added to the project must be within the Country of Malawi, and have ecological, social and cultural similarities, as well as similar drivers and agents of deforestation to the initial project instances. New project parcels are not required to be within the jurisdiction of DPW. Within the Monitoring Report there must be documentation of how the new instances have similar characteristics to the original instances.	This eligibility criterion will serve to define the geographical boundary of the grouped project and the similarity from the design point of view /1/.

DNV GL was able to confirm that the first instance complied with the eligibility criteria as assessed in this validation report.

- ***Leakage management for AFOLU projects***

The VCS PD provides a clear description of the leakage management activities. Leakage mitigation is integrated within the Project activities. The project activities are targeting and area that goes beyond the leakage area (i.e. 10 km surrounding the project area) and will serve to mitigate deforestation and degradation within the project area and mitigate leakage. . DNV GL confirmed the accuracy of the description provided and confirmed that these measures are in place during the site visit.

3.2 Application of Methodology

3.2.1 *Title and Reference*

The proposed project activity applies the VCS methodology VM0006 Version 2.0 “Carbon Accounting for Mosaic and Landscape-scale REDD Projects". The project proponent applies version 2.0 which has been approved through double-approval process.

3.2.2 *Applicability*

The applied baseline methodology is justified as it has been demonstrated that the project activity ensures that:

Applicability conditions of VM0006 Version 2.0	Rationale
Land in the project area, consisting of either one	DNV GL checked the forest cover maps and the

Applicability conditions of VM0006 Version 2.0	Rationale
contiguous area or multiple discrete project parcels (see definition of project area), shall meet an internationally accepted definition of forest, such as those based on UNFCCC host-country thresholds or FAO definitions, and shall qualify as forest for a minimum of 10 years before the project start date.	project boundary delineation /3/ and confirmed that the project area only incudes areas which were forested at the time of the start date AND for 10 years before the project start date.
The project area would be deforested in absence of the REDD project activity, as evidenced by (1) the presence of deforestation agents and drivers near the project area (see the following criterion), and (2) an average deforestation rate or forest degradation rate during the historical reference period of at least 0.5%. In instances where the average deforestation rate or forest degradation is less than 0.5%, this methodology can still be applied if the project proponents can demonstrate that the likely course of deforestation or forest degradation will exceed 0.5% during the project crediting period in the absence of the project. In addition, the deforestation and/or forest degradation in the reference region must be mosaic in nature, as described in the VCS AFOLU requirements.	The proposed project consists in the implementation of a REDD activity located in 5 km zones inside the boundaries of three key protected areas in central and northern Malawi. These areas are the interface between the core of the protected areas and the adjacent local communities, and are under increasing pressure from local communities. This was effectively confirmed through the Household (HH) Surveys and the PRAs conducted in these areas /7/ which show that adjacent communities have access to the protected areas and they are sourcing some materials from these areas. The PRA /7/ shows that these communities access mainly to the initial 5 km. This was further confirmed during the interviews held with local communities /57//66/ and the DPW /60//63/. The impact of these drivers on these areas is further confirmed through the LULC maps and their transitions /3/ which show that within these protected areas deforestation is occuring and that the levels of deforestation within protected areas reach and exceed 0.5% in the historical reference period. Hence, DNV GL is able to confirm: a) the presence of drivers and agents of deforestation close to the project areas; b) and that these are already having an effect within protected areas, showing that project areas are expected to be subject to these rates.
Deforestation and forest degradation in the project area occurs due to one or more of the following categories of drivers i. Conversion of forest land to cropland for subsistence farming ii. Conversion of forest land to settlements iii. Conversion of forest land to infrastructure, including new roads iv. Logging of timber for commercial sale (i.e., wood planks or poles for commercial sale) v. Logging of timber for local enterprises and domestic uses (i.e., poles and posts as local	The PRA /7/ shows that the main drivers of deforestation are: i. Collection of wood for charcoal ii. Conversion of forest to small-scale agriculture iii. Forest fires by hunters (mice hunters) iv. Forest fires for other anthropogenic reasons v. Other vi. Wood and poles for construction and domestic use vii. Wood for cooking and heating locally viii. Wood for tobacco curing.

Applicability conditions of VM0006 Version 2.0	Rationale
construction materials, furniture, wood crafts, and canoes) vi. Wood collection for commercial sale of fuelwood and charcoal vii. Fuelwood collection for domestic and local industrial energy needs (i.e., cooking, home heating, tobacco curing, brick making) viii. Cattle grazing in forests ix. Extraction of understory vegetation (e.g., thatch grass collection for roof and livestock bedding materials, shrubs and small trees for straw fences) x. Forest fires to the extent that they are not part of natural ecosystem dynamics (e.g., forest fires related to hunting, honey collection, intentional land clearing on land with a high fuel-load) None of the drivers listed here may be planned in nature. If deforestation from a specific driver is occurring as a result of planned forest conversion activities, then such a driver must be excluded from analysis.	This was further confirmed during the interviews held with local communities /57//66/ and the DPW /60//63/.
Accurate data on past land use, land cover (LULC) and forest cover in the reference region are available for at least three points in time, with at least one remote sensing image (i.e., data) from 0-3 years before the project start date, at least one image from 4-9 years before the project start date, and at least one image from 10-15 years before the project start date. No images older than 15 years may be used for the historical reference period.	To establish the baseline, at least three historical remote sensing images are used with at least one remote sensing image from 0-3 years before the project start date and at least one image from 4-9 years before the project start date /3/. The third image is of 9.75 years before the start date so it is close enough to 10-15 years before the Project start date and it will not impact the conservativness of the estimates as confirmed by DNV GL as: a) the difference of almost 1 year would not have a major impact in the baseline; b) the main reason for not selecting an image of an earlier date is the quality and the cloud cover, so using this image would improve the accuracy of the baseline estimates. No images older than 15 years used for the historical reference period /3/.
The classification accuracy of LULC and forest cover maps is greater than 70%. Credits from avoided degradation may only be included if the accuracy of determining forest strata is at least 70%.	The accuracy assessment shows an accuracy well above the minimum of 70% required.
This methodology is not applicable to organic soils or peatland.	No organic soils or peatland is present in the project areas as confirmed through the Bio Physical Survey conducted by a third party in the project

Applicability conditions of VM0006 Version 2.0	Rationale
	area /11/.

The assessment of the project's compliance with additional applicability criteria of VM0006 (Version 2.0) /14/ are documented in detail in section 2.2 of Table 1 in the validation protocol in Appendix A to this report.

3.2.3 *Project Boundary*

The project boundary has been defined as those areas that are eligible under VCS Standard Version 3.4 /16/.

- ***Project area and land eligibility***

The Project Areas of the Kulera Biodiversity Project are found within a 5 km wide area inside of the Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. The 5 km inside buffer distance was selected to address observed deforestation and degradation occurring on the edges of Malawi's Protected Areas and in line with the 10 km distance accessed by drivers indicated by the PRA /7/. DNV GL deems that this is reasonable.

Areas adjacent to the Zambia border were removed from both Nyika and Vwaza Project Areas along with areas adjacent to Forest Reserves (Mndilandsadzu FR and Dwambadzi FR) to the north and south of the Nkhotakota Project Areas as these areas are not directly accessible by deforestation agents located within Malawi. DNV GL deems that this is reasonable.

In order to complete the project areas, watershed boundaries were used in order to complete the project limits within the protected areas. This has been done in order to ensure that project limits, which are coincident with the reference region limits, are not defined in a subjective manner. DNV GL confirms that this is required by VM0006 (Version 2.0) /14/.

As required by VM0006 (Version 2.0) /14/ and the AFOLU Requirements /17/, all areas which did not qualify as forest at both the start of the historic period and at the start of the project were removed from the projected area.

- ***Reference region***

Methodology VM0006 (Version 2.0) /14/ establishes criteria in order to define the reference region. DNV GL assessed the reference region against the criteria:

Criterion as per VM0006 (Version 2.0) /14/	Assessment
The minimum size of the reference region excluding the project area and leakage area is 250,000 ha or at least the size of the project area at the start of the crediting period, whichever is greater. If the entire country or autonomous territory is less than this size, then the reference region must be equal to the entire country or that territory. When a project area is located on an island which is smaller than the required reference region, then it is sufficient to have the entire island as the reference region.	The project area is entirely located within protected areas where laws or protection are not fully enforced. The partial enforcement of laws was confirmed by DNV GL through various interviews with staff of the DPW and the Forestry Department /60//63//65/ and through the fact that the historical analysis of deforestation shows deforestation occurring within these areas. However, as confirmed during the site visit, some enforcement is in place which is causing a reduced deforestation rate in comparison with historical rates observed out of the protected

Criterion as per VM0006 (Version 2.0) /14/	Assessment
	areas. As a result, the Reference Region had to be composed only of areas which are comparable to the project area, i.e. areas with a category of protection (i.e. forestry reserves, wildlife reserves, national partks, etc.). Furthermore, since the leakage area is part of the inclusive Reference Region, areas which are similar to the leakage area were also included, i.e. areas that are surrounding these protected areas and where agents of deforestation are located (i.e. similar to the leakage areas). Due to the lack of suitable areas, the reference region only summed up to 232 782 hectares.
The boundary of the reference region must be set without bias so that the deforestation rates are unbiased. The **boundaries** of the reference region must be unbiased and coincide with a combination of natural, geopolitical, satellite footprint, or watershed boundaries, or boundaries that were created by applying a distance buffer around the discrete project parcels. A natural boundary is a boundary of a naturally occurring phenomenon such as a river, mountain range, lake, ocean, or watershed. Preferentially, natural boundaries that coincide with administrative or jurisdictional boundaries in the region where land-use land cover related policies are likely to be consistent must be selected.	The boundary of the reference region has been set without bias. The reference region is a combination of protected areas and their corresponding areas of influence (i.e. "leakage areas"), which are located within the satellite footprint of the satellite imagery tiles which cover the project areas. The areas included within the protected areas and in their area of influence have been set following the same criteria used to define the project area and the leakage area.
Project proponents must demonstrate that the reference region does not contain areas where **agents of deforestation have restricted access**. Include maps where the reference region and the project area have been overlaid with maps of protected areas, including: o National parks that are effectively protected o Military bases or installations o Areas under conservation that are effectively protected o Areas under a logging or economic land concession where access is effectively being restricted o Large plantations that are effectively protected	The Reference Region does not include any areas where agents of deforestation have restricted access. Although part of the Reference Region is within a protected area, laws or protection are not fully enforced in these areas. The partial enforcement of laws was confirmed by DNV GL through various interviews with staff of the DPW and the Forestry Department /60//63//65/ and through the fact that the historical analysis of deforestation shows deforestation occurring within these areas /10/. Large plantations which are located within the Reference Region were clipped, which is reasonable as confirmed by the Forestry Department /65/.
The reference region must exclude areas where **planned deforestation** activities took place. The	No areas of planned deforestation have been included. DNV GL confirmed through satellite

Criterion as per VM0006 (Version 2.0) /14/	Assessment
validation and/or verification bodies may ask project proponent for evidence to show that all the planned deforestation areas have been excluded from the reference region or proof of non-existence of such areas within the reference region.	imagery that commercial croplands close to Nyika were excised from the reference region /3/.
The reference region must exclude deforested areas caused by natural (non-anthropogenic) large-scale, extraordinary events (e.g. geological and weather impacts which are infrequent but significant in their impact on the landscape). Such areas are excluded from the reference region since these are not likely to occur within the project area during the crediting period.	No areas of non-anthropogenic deforestation have been included. DNV GL confirmed this through satellite imagery /3/.
Project proponents must demonstrate that the reference region contains at least 15% forest cover at the beginning of the crediting period, unless the reference region encompasses a whole country or island. This condition shall be explicitly checked using the classification that is developed under the remote sensing section of this methodology.	The forest cover at the beginning of the crediting period is above 15% (i.e. 60.8%) as confirmed through the 2009 forest cover map /3/.
Project proponents must compare a number of key variables between the reference region and project area according to the procedures outlined Table 3. Areas in the potential reference region where one or more of these variables differ from the project area are not eligible and must be excluded from the reference region.	As assessed in the first criterion, the project area is fully within three protected areas. Although the law and protection is not fully enforced, there is certain degree of enforcement which has enabled a reduced deforestation rate with regard to an area outside of the protected area. On the other hand, the leakage area which is part of the Reference Region is located out of the protected areas, where no enforcement is in place. Hence, in order to ensure the comparability between the project area, leakage area and reference region, the reference region has considered only areas that are comparable to the continoum of project area and leakage area, i.e. protected areas and their area of influence as defined by the 10 km where the agents of deforestation which are acting in the protected area are located.

DNV GL deems that the reference region has been delineated following VM0006 (Version 2.0) /14/ and confirms that this has been delineated without bias.

- ***Leakage area***

The leakage area constitutes the area where the baseline activities would be probably displaced. The leakage area has been defined following the procedures prescribed in VM0006 (Version 2.0) /14/. The project proponent has produced a cost grid indicating the time that an agent would take to cross each pixel by foot in average. This grid has been produced from a grid indicating the maximum speed that an agent could reach in a certain pixel. DNV GL checked the average speeds assigned and deems that the values are reasonable considering the values provided by the Participatory Rural Appraisal (PRA) /7/. The leakage area would be defined as the isochrone from the project area equivalent to 1.5 the maximal time provided by the PRA /7/, being in this case 15 hours. Hence, the leakage area would be defined by the 15 hour isochrone from the project boundary.

DNV, based on its experience in conducting biomass procurement and logisitical models, is able to confirm that the above approach is correct and that it is in compliance with the applicable methodology.

- ***Temporal boundaries***

In line with VCS requirements the baseline will be re-assessed every 10 years.

Therefore, DNV GL concluded that the proposed project activity complies with the definition of the project boundary stated in VM0006 (Version 2.0) /14/.

- ***Carbon pools***

The carbon pools included in or excluded from accounting of the baseline and project scenario:

Project carbon pool	Accounted for	Rationale
Above-ground tree biomass	Yes	- Accounted as required by the methodology VM0006 (Version 2.0).
Above-ground non-tree biomass	Yes	- Optional according to methodology VM0006 (Version 2.0). Emissions from this carbon pool are expected to be significant as the baseline scenario is cropland. DNV GL deems that it is reasonable to account for this carbon pool.
Below-ground biomass	Yes	- Optional according to methodology VM0006 (Version 2.0). Emissions from this carbon pool are expected to be significant as the baseline scenario is cropland. DNV GL deems that it is reasonable to account for this carbon pool.
Dead wood	Yes	- Optional according to methodology VM0006 (Version 2.0). Emissions from this carbon pool are expected to be significant as the baseline scenario is cropland. DNV GL deems that it is reasonable to account for this carbon pool.
Litter	No	- Not accounted as required by the methodology VM0006 (Version 2.0).
Soil organic carbon (SOC)	Yes	- Optional according to methodology VM0006 (Version 2.0) if baseline scenario is annual cropland. DNV GL deems that it is appropriate to account for this carbon pool as the baseline

Project carbon pool	Accounted for	Rationale
		land use will be an annual cropland. This was confirmed during the site visit through visual inspection and through the results of the PRA /7/ or other third party publications /48/. DNV GL confirmed that in some cases the resulting baseline is non-forest land without cropping (i.e. unmanaged grassland or shrubland), but that in these cases the increased erosion levels and degradation, without inputs, will lead to a reduction of carbon stocks in the SOC pool, so it would still be appropriate to account for emissions from this carbon pool. This is consistent with the 2006 IPCC GL /31/ which indicates lower soil carbon stocks in degraded grasslands or croplands without inputs in comparison with soil organic carbon stocks in forests. This is consistent with the results from Walker & Desanker (2004) which indicates that conversion of Miombio forest to non-forest land-uses decrease the inputs from existing trees and has a declining effect in carbon stocks /43/. Hence, DNV GL deems that it is reasonable to account for this carbon pool.
Harvested Wood Products	No	- Required to be accounted by the methodology VM0006 (Version 2.0), however, since none of the wood products are long-lived wood products, this carbon pool is not considered. DNV GL identified that only one mid-term wood product is generated which is the wood for the tobacco barns. According to the PRA, the wood used for these barns is changed every 2-3 years /7/. Hence, DNV GL deems that it is reasonable to exclude this carbon pool.

DNV GL confirmed that the selection of carbon pools complies with the applicable methodology "Carbon Accounting for Mosaic and Landscape-scale REDD Projects" VM0006 (Version 2.0) /14/.

- ***Selection of Sources and Sinks***

The system boundaries are presented in the following table:

Source / Sink	GHGs involved	Description
Baseline emissions and removals	CO_2	The following GHG sources, sinks and reservoirs are identified as per the applicable methodology: - Baseline deforestation and degradation regarding

Source / Sink	GHGs involved	Description
		the use of firewood for cooking by households.
	CH_4	- Emissions from the use of firewood for cooking by households.
	N_2O	- Emissions from the use of firewood for cooking by households.
Project emissions and removals	CO_2	The following GHG sources, sinks and reservoirs are identified as per the applicable methodology: - Project deforestation and degradation - Cookstove and Fuel Efficiency (CFE) activities
	CH_4	- Cookstove and Fuel Efficiency (CFE) activities
	N_2O	- Cookstove and Fuel Efficiency (CFE) activities
Leakage emissions	CO_2	- Leakage due to activity displacement

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 or removals occurring within the proposed project activity boundary as a result of the implementation of the proposed project activity which are expected to contribute more than 5% of total decreases in carbon pools and increases in emissions, or more than 5% of net anthropogenic removals by sinks, which are not addressed by VM0006 Version 2.0 /14/.

3.2.4 *Baseline Scenario*

Following the provisions of VM0006, the most plausible baseline scenario according to the CDM modalities and procedures, paragraph 22, is option (a): *Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary.*

This baseline scenario is prescribed by the methodology and it will be based in the historical information of the reference region.

All the assumption and data used by the project proponents are listed in the VCS PD /1/ and/or supporting documents. All documentation relevant for establishing the baseline land-use are correctly quoted and interpreted in the VCS PD /1/. Assumptions and data used in the identification of the baseline land-use 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 VCS PD /1/.

3.2.5 Additionality

The additionality of the project is demonstrated following the “Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities” (Version 3.0) /15/.

3.2.5.1 Identification of alternatives to the project activity

Alternative land-use scenarios have been identified as per the methodology and the selection of the plausible baseline scenario has been demonstrated, as detailed in section 3.2.4 Baseline identification of the validation report, in line with the “Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities” (Version 3.0) /15/. The identified alternative baseline scenarios are:

1. Scenario 1 - Continuation of the pre-project land uses
2. Scenario 2 - Increased protection in the Protected Areas through expanded enforcement and/or activities implemented to reduce Project Zone community wood needs.

DNV GL considers the list of realistic and credible alternatives to be complete and accurate.

3.2.5.2 Barrier analysis

The project additionality has been demonstrated following the provisions of the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0) /15/.

DNV GL deems that the existence of barriers is real considering the investment barriers, technical and capacity barriers and institutional barriers linked to the implementation of an increased enforcement project in protected areas in a country with scarcity in resources. The barriers are presented hereunder:

Investment barriers

The investement barrier is related to the lack of funding sources in order to effectively protect the project areas through direct enforcement or the implementation of mitigation activities.

DNV GL deems that the investment barrier is real as the proposed project activity has only been implemented and established with development aid from USAID /6/ which has been conditional to seeking for carbon finance in order to keep the project in operation. USAID's funding /6/ will not be available for the operation of the project and the continuation of the project activities after the first 3-4 years. From that point, funding will be sourced from the carbon fund which will be established with the carbon revenues from the commercialisation of carbon credits /4/. DNV GL was able to confirm during the site visit that DPW does not have the necessary sources in order to ensure full enforcement of laws in the national parks /60//63/; this was further confirmed by the Department of Forests /65/ who confirmed that this is one of the causes of deforestation. Hence, there are no resources for the direct enforcement of laws and for the implementation of mitigation activities by authorities. Furthermore, DNV GL confirmed that no other funding sources are available for other stakeholders: the associations NVA and NAWIRA do not have enough resources in order to implement project activities /57/; members of the local communities confirmed the lack of resources for implementation of project activities for enabling alternative livelihoods /66/.

This barrier will be overcome by the carbon benefits as already shown by USAID's grant. As confirmed by DNV GL, USAID funding has been conditional to seeking carbon finance for funding the continuation of the conservation activities /6/. Hence, carbon finance has been critical for the first implementation of activities. After these first 3-4 years, the main revenue stream will be the commercialisation of VCUs generated by the project which will serve to feed a fund which will finance law enforcement activities and other mitigation activities. Hence, carbon benefits are crucial to help to overcome this investment barrier.

Technical and capacity barrier

This lack of technical and capacity has caused an increased demand in natural resources from the surroundings of the protected areas and a lack of resources in order to implement mitigation projects and enforce the law by the DPW. Regarding the implementation of mitigation projects, DNV GL deems that the technical and capacity barrier is real as evidenced by the baseline survey /7/ which indicate a lack of capacities in local communities to diversify their livelihoods and decouple the increase in production to the opening of new land. This issue was also pointed out by members of local communities /66/, who indicated the lack of technical resources and know-how for establishing alternative livelihoods as one cause of deforestation (before the project implementation). Regarding the technical capacities of DPW,

the lack of these was also confirmed during the interviews with DPW /60//63/, who confirmed the lack of capacity in order to ensure enforcement in the protected areas. In total DPW has 120 rangers to protect the three protected areas with sum more than 400 000 ha (i.e. 320 000 ha Nyika, 97 800 ha Vwaza and 108 200 ha Nkhotakota).

Carbon benefits will help to overcome this barrier as the project plans include necessary training to NVA and NAWIRA and the necessary resources in order to empower them to make the necessary law enforcement which the DPW is struggling to make.

Institutional barriers

The existence of instutitional barriers, such as the lack of a framework for collaborative management (in Nkhotakhota) is pointed out as a barrier for the effective protection of the project area. DNV GL deems that the institutional barrier is real as confirmed by DPW and the Department of Forests /60//63//65/ who indicated that the lack of enforcement of forest or land-use-related legislation was a real issue inside protected areas which is linked to the inexistence of the necessary framework for developing collaborative natural resource management as prescribed by the law. Before the implementation of the project, there was no collaborative management framework in Nkhotakhota as there was no association established in that area. The project enabled the establishment of the NAWIRA association in that area which will enable the effective implementation of collaborative plans and the legal access of the communities to the protected areas.

Carbon benefits will help to overcome this barrier by establishing the necessary framework for effective protection of the project area.

3.2.5.3 Investment analysis

Not applicable as the project additionality has not been demonstrated through an investment analysis.

3.2.5.4 Common practice analysis

The geographical scope is Malawi. The VCS PD concludes that no similar activities are present in the geographical region. This was confirmed by DNV GL through interviews with the DPW and the REDD coordinator who confirmed this extent /60//63//65/.

From above discussion, it is concluded that the proposed project activity has faced barriers to its implementation and is not common practice and thus is additional.

3.2.6 Quantification of GHG Emission Reductions and Removals

The algorithms and formulae used to determine emission reductions are provided in this section.

The assessment of values of each parameter applied for ex-ante estimations are described in §3.2.8.1.Data and parameters available at validation and §3.2.8.1.Data and parameters monitored.

Following EQ104 of VM0006 Version 2.0 /14/ and considering that: a) emissions from degradation are not accounted for; b) no harvesting or Assisted Natural Regeneration (ANR) is foreseen in the project scenario; c) emissions from long-lived wood products are not accounted for (c.f. §3.2.3. Project Boundary); and d) emissions from other secondary sources are not applicable (c.f. §3.2.3. Project Boundary), the GHG emission reductions woudl be quantified through the following equation:

Net Emission Reductions (NERs) = ❶ + ❷ + ❸ + ❹

ΔGHG from avoided deforestation which is equal to baseline emissions minus project emissions from avoided deforestation.	❶
+ ΔGHG from deforestation due to leakage	❷
+ΔGHG from leakage by unconstrained geographic drivers	❸
+ ΔGHG from improved cookstoves	❹

3.2.6.1 Quantification of baseline emissions

Following the provisions of VM0006 Version 2.0 /14/, baseline emissions would be the sum of baseline GHG emissions from avoided deforestation and baseline net GHG emissions from improved cookstoves.

Baseline GHG emissions from avoided deforestation

Considering only the baseline emissions from equation EQ106 of the applicable methodology, the baseline emissions would be estimated by the following formula:

$$BE_{DF}(t) = \sum_{i=1}^{nrFNFtransitions} \sum_{tt=1}^{t} u_{classification} \cdot u_{transition}(i) \cdot \left(-\Delta area_{projectArea,baselineScenario}(t,i)\right) \cdot \left(EF_{AGL}(i) + EF_{AGD}(i,t-tt) + EF_{BG}(i,t-tt) + EF_{SOM}(i,t-tt)\right)$$

Where:

Where: $u_{classification}$	Discounting factor for NERs from avoided deforestation, based on the accuracy of classification, i.e. dividing land into broad land use types.
$u_{transition}(i)$	Discounting factor for all emission reductions, based on the uncertainty of biomass inventory related to transition i.
$\Delta area_{projectArea,baselineScenario}(t,i)$ uncertainty of Hectares und	Hectares undergoing transition i related within the project area under the baseline scenario during year t. [ha yr-1].
$EF_{AGL}(i), EF_{AGD}(i,t-tt), EF_{BG}(i,t-tt)$, and $EF_{SOM}(i,t-tt)$ Abo emis	Aboveground live, aboveground year dead, belowground, and soil emission factor for transition i, and $t-tt$ time after transition

DNV GL reviewed all the assumptions and calculations made and confirmed that they are in accordance to the applicable methodology and that they are correct. The total baseline emissions from deforestation in the crediting period are equal to 14 724 795 tCO_2e.

Baseline net GHG emissions from cookstoves

Considering only the baseline emissions from equation EQ78 of the applicable methodology, the baseline net GHG emissions would be estimated by the following formula:

$$ER_{CFE}(t) = DF_{LeakageCFE} \sum_{i=1}^{nrCFE} HH_{non-CFE}(i,t) \cdot U_{CFE}(t) \cdot Fuel(t) \cdot \left(1 - \frac{\eta_{old}}{\eta_{new}}\right) \cdot NCVfuel \cdot (EF_{non-CO2,fuel} + proportion_{DG,fuel} \cdot EF_{CO2,fuel})$$

Where

$ER_{CFE}(t)$	Emission reduction from CFE activities during year t from cook stoves in the project area. [t CO2e]
$DF_{LeakageCFE}$	Leakage discount factor [Proportion]. A default factor from AMS.II.G of 0.95 has been used.
$U_{CFE}(t)$	Fraction based on cumulative usage rate for technologies in project scenario in year t based on cumulative adoption rate and drop off rate revealed by usage surveys [Proportion].
$Fuel(t)$	Average annual volume of biomass fuel consumed by households in the absence of the project activity at time t for cooking purpose. [t yr^{-1} HH^{-1}].
$HH_{non-CFE}(i,t)$	Total number of households activity in the project area that collect biomass fuel from the project area and use i number of efficient or alternative appliances under the project scenario and do not use CFE under the baseline at time t. [Count].
$nrCFE$	Total number of number of improved cookstoves and/or fuel efficient appliances [Count].
η_{old}	Efficiency of the baseline cook stoves or appliances being replaced. [Fraction].
η_{new}	Efficiency of the project CFE appliances deployed. [Fraction].
$proportion_{DG}(fuelwood)$	The default proportion of degradation related carbon loss from fuelwood collection activities [Proportion].
$NCVfuel$	Net calorific value of non-renewable biomass that is substituted. [TJ (Mg DM)$^{-1}$].
$EF_{non-CO2,fuel}$	Non---CO2 emission factor of the fuel that is reduced. [MgCO2 TJ^{-1}].
$EF_{CO2,fuel}$	Emission factor for the substitution of non-renewable woody biomass by similar consumers. [MgCO2 TJ^{-1}].

DNV GL reviewed all the assumptions and calculations made and confirmed that they are in accordance to the applicable methodology and that they are correct. The total project emission reductions from the cookstove component in the crediting period are equal to 3 061 886 tCO_2e.

The total baseline emissions in the crediting period are equal to 17 786 680 tCO_2e.

3.2.6.2 Quantification of project emissions

Project GHG emissions from avoided deforestation

Considering only the project emissions from equation EQ106 of the applicable methodology, the project emissions would be estimated by the following formula:

$$PE(t) = \sum_{i=1}^{nrFNFtransitions} \sum_{tt=1}^{t} u_{classification} \cdot u_{transition}(i) \cdot \left(-\Delta area_{projectArea,projectScenario}(t,i)\right) \cdot \left(EF_{AGL}(i) + EF_{AGD}(i,t-tt) + EF_{BG}(i,t-tt) + EF_{SOM}(i,t-tt)\right)$$

Where:

Where: $u_{classification}$	Discounting factor for NERs from avoided deforestation, based on the accuracy of classification, i.e. dividing land into broad land use types.
$u_{transition}(i)$	Discounting factor for all emission reductions, based on the uncertainty of biomass inventory related to transition i.
$\Delta^{transi}_{area_{projectArea,projectScenario}(t,i)}$ uncertainty Hectares ur t, i	Hectares undergoing transition i relat with in the project area under the project scenario during year t. [ha yr-1].
$EF_{AGL}(i), EF_{A}^{GD}(i,$ $t-tt), EF_{BG}$ $tt)$, and $EF^{SOM}(i$ $i,t-tt)$ Abo emis	Aboveground live, abovegro dead, belowground, emission factor for transition und i, an time after transition and soil $t-tt$.

DNV GL reviewed the calculations provided /10/ and confirmed that the emissions from logging operations were correctly calculated.
Hence, the total project emissions in the crediting period are equal to 3 161 764 tCO_2e.

3.2.6.3 Quantification of leakage

According to the applicable methodology VM0006 Version 2.0 /14/ there are three possible leakage sources: a) Geographically constraint drivers; b) Geographically unconstraint drivers; c) Market leakage. Market leakage is not applicable as no timber products sourced from the project area in the baseline or project scenario are supplied to a national or international market.

Leakage emissions from geographically constrained drivers

According to equation EQ107 of the applicable methodology this is estimated as follows:

$$Leakage(t) = \sum_{i=1}^{nrFNFtransitions} \sum_{tt=1}^{t} u_{classification} \cdot u_{transition}(i) \cdot \begin{pmatrix} +\Delta area_{leakageArea,projectScenario}(t,i) \\ -\Delta area_{leakageArea,baselineScenario}(t,i) \end{pmatrix} \cdot \left(EF_{AGL}(i) + EF_{AGD}(i,t-tt) + EF_{BG}(i,t-tt) + EF_{SOM}(i,t-tt)\right)$$

Where:

Where: $u_{classification}$	Discounting factor for NERs from avoided deforestation, based on the accuracy of classification, i.e. dividing land into broad land use types.
$u_{transition}(i)$	Discounting factor for all emission reductions, based on the uncertainty of biomass inventory related to transition i.
$-\Delta^{transiti}_{area_{leakageArea_{baselineScenario}}(t,i)}$ uncertainty Hectares ur t, i	Hectares undergoing transition i relatec within the leakage area under the baseline scenario during year t. [ha yr-1].

$\Delta area^{leakageArea,projectScenario(t,i)}$ Hectares un $_{t,i}$	Hectares undergoing transition $_{i}$ withi $_{t}$. [ha n the leakage area under the project scenario during year yr-1].
$EF_{AGL}(i), EF_{A}$ $^{GD}(i,$ $t-tt), EF_{BG}$ $tt)$, and $EF^{SOM}(i_{i,t-tt})$	Abo emis Aboveground live, abovegro dead, belowground, emission factor for transition und i, an d time after transition and soil $t-tt$.

DNV GL review all the assumptions and calculations made and confirmed that they are in accordance to the applicable methodology and that they are correct. The total leakage emissions from constrained drivers in the crediting period are equal to 7 155 981 tCO_2e.

Leakage emissions from geographically un-constrained drivers

The analysis of drivers of deforestation made as part of the PRA and household survey /7/ did not show the existence of un-constrained drivers. During the site visit DNV GL held a number of interviews with local stakeholders and confirmed that in the project areas there is not a large migration such as it happens in other countries (e.g. Trans-migrassi) /57//60//63//66/. New habitants arriving from other areas in Malawi integrate in existing populations upon being authorized by the village chief and other traditional authorities. Once this is authorized a piece of land is allocated to the new family and they become part of the existing community, becoming part of the constrained drivers emission source. Any increase in deforestation from these populations will be factored in the monitoring of the deforestation in the leakage area. Hence, no emissions from geographically un-constrained drivers are applicable in the context of the present project.

Hence, the total leakage emissions in the crediting period are equal to 7 155 981 tCO_2e.

3.2.6.4 Summary of GHG emission reductions or removals

DNV GL has confirmed that the calculations are in accordance to the methodology VM0006 Version 2.0 /14/, and that the GHG removals calculations are correct.

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 net GHG emission reductions (i.e. GHG benefits) of 7 468 935 tCO_2e in total for the crediting period. Considering the risk rating of the proposed project activity (i.e. 10%), the total buffer credits would be equal to 1 156 303 tCO_2e. This would give a total of 6 312 632 VCUs issued in the crediting period.

Baseline Emissions (including cookstove net baseline emissions)	17 786 680 tCO2e
Project Emissions	3 161 764 tCO2e
Leakage emissions	7 155 981 tCO2e
Net GHG benefits	7 468 935 tCO2e
GHG credits issued	7 468 935 tCO_2e
Buffer credits	1 156 303 tCO_2e

-Non-permanence risk rating: 10%	
VCUs in crediting period	**6 312 632 tCO_2e**

All assumptions and data used by the project proponents are listed in the VCS PD /1/ and/or supporting documents, including their references and sources. All documentation used by the project proponents as the basis for assumptions and source of data is correctly quoted and interpreted in the VCS PD /1/. All values used in the VCS PD are considered reasonable in the context of the proposed project activity. The baseline methodology has been applied correctly to calculate project emissions and removals, baseline removals, leakage emissions and GHG benefits. All estimates of the baseline removals, project removals and leakage emissions can be replicated using the data and parameter values provided in the VCS PD /1/.

3.2.6.5 Uncertainties associated with the calculation of emissions

All uncertainties in the ex-ante calculations /10/ have been considered following the requirements of VM0006 Version 2.0 /14/. DNV GL confirmed that the uncertainties of all factors involved have been correctly calculated or that conservative values have been used (lower or upper bound of the confidence interval), and that the propagation of errors has been done following IPCC LULUCF GPG /31/.

For ex-post purposes, the uncertainties are related to data that is collected ex-post, such as the transition matrix in the project area or the leakage area, or the emission factors if a new forest inventory is conducted.

3.2.7 *Methodology Deviations*

DNV GL has identified the following methodology deviations as part of the project validation which are acceptable deviations as they increase the accuracy of the GHG accounting in many cases or at least they do not impact the conservativeness of the net emission reductions estimations:

Nº	Methodology	Deviation and assessment
1	Section 8.1.1.4 “At least three images of forest cover are required during the historical reference period, (1) at least one image from 0-3 year before project start date, (2) at least one image from 4-9 years before project start date, and (3) at least one image from 10-15 years before project start date. No images older than 15 years may be used for the historical reference period.”	The project is applying a deviation in the timing of the used satellite imagery. Two out of the three Project Area regions (Nyika and Vwaza) classified satellite images used for the first historic time period do not meet the 10-15 years prior to project start requirement. At the time of data acquisition there was a gap in available Landsat 5 imagery for the 10 to 15 year historic period. The closest available data was Landsat 5 from 1991 and Landsat 7, launched in 1999 with <20% cloud cover scenes beginning in 2000. The Landsat 7 year 2000 scenes were selected as the closest temporal match to the 1999 minimum requirement and used as the first historic period for the Nyika and Vwaza regions. DNV GL deems that this deviation is acceptable as

Nº	Methodology	Deviation and assessment
		used satellite imagery do not comply with the requirement by less than 6 months, which is negligible considering that other REDD methodologies allow to a +-1 year buffer for image consideration. This will provide more accurate results than the 1991 scene which will provide estimates of very old conditions and socio-economic environment not comparable to the present one. Furthermore, as confirmed by DNV GL 1991 scenes were also employed but as ancilliary data in order to inhance the confidence of the 2000 land cover classifications. The reported deviation is acceptable as per §3.5.1 as it is a deviation from the criteria and procedures relating to monitoring set out in the methodology and they result in an increased accuracy of such quantification as they are still within acceptable distance fom the 10-15 year period and closer to the 10 year where socio-economic conditions and environment is closer to the current one.
2	Section 8.1.1.2 "The **minimum size** of the reference region excluding the project area and leakage area is 250,000 ha or at least the size of the project area at the start of the crediting period, whichever is greater. If the entire country or autonomous territory is less than this size, then the reference region must be equal to the entire country or that territory."	The project area is entirely located within protected areas where laws or protection are not fully enforced. The partial enforcement of laws was confirmed by DNV GL through various interviews with staff of the DPW and the Forestry Department /60//63//65/ and through the fact that the historical analysis of deforestation shows deforestation occurring within these areas. However, as confirmed during the site visit, some enforcement is in place which is causing a reduced deforestation rate in comparison with historical rates observed out of the protected areas. As a result, the Reference Region had to be composed only of areas which are comparable to the project area, i.e. areas with a category of protection where protection is not effective and where agents of deforestation have access (i.e. 5 km within forestry reserves, wildlife reserves, national parks, etc.). This would allow the definition of a historical rate based on deforestation rates observed within protected areas. As a result of this criterion, the 250 000 ha requirement could not be complied with as the number of such areas within the footpring of satellite imagery was reduced. Furthermore, since the applicable methodology

Nº	Methodology	Deviation and assessment
		requires to include the leakage area within the Reference Region which will be used to determine the historical deforestation rate and the leakage area is almost out of the protected areas, in order to avoid any bias, similar areas had to be added in the Reference region. Hence, in addition to the 5 km areas within the protected areas, 10 km out of these areas (i.e. similar as leakage belts) were included within the reference region. Since these "leakage areas" are located in areas without any protection figure, the historical rates in these areas could be higher in comparison with areas located within protected areas, which could lead to think that this would bias the results. However, as assessed in Deviation 4, this issue has been solved by including in the deforestation model two spatial factors related to the proximity to a protected area and the location within a protected area, so the deforestation model has been run in the continuum of project area and leakage area. This will accurately reflect the lower deforestation rate within or close to the protected area due to the partial enforcement, and it will show an increase in deforestation rates within the protected area as the resources within the leakage are progressively exhausted. As confirmed by DNV GL, this correction has lead to a decrease of 26% in the baseline emissions. DNV GL confirmed that this approach is accepted by other methodologies, such as VM00015 or VM0007, which require running a spatial deforestation model in the continuum of reference region and project area. The reported deviation is acceptable as per §3.5.1 as it is a deviation from the criteria and procedures relating to monitoring set out in the methodology and they result in an increased accuracy of such quantification.
3	8.1.4.4 "Calculate All Class or Stratum-Specific Transition Rates" provides procedures in order to determine the future land use and land cover and model spatially and in a quantitative manner deforestation future deforestation. Spatially	As explained in deviation 2, the fact that the project area is located in a protected area and that the drivers of deforestation are entirely located out of this protected area within the leakage area has required a deviation in the delineation of the

Nº	Methodology	Deviation and assessment
	this is done by defining the deforestation risk of each pixel within the project area based on different spatial factors which influence the likelihood of deforestation. Then pixels are "deforested" starting with the high risk pixels and finalizing with the low risk pixels. This is done in a yearly basis up to the yearly deforestation rate. In order to account for the forest scarcity principle, a correction factor is applied annually to the deforestation rate. This same procedure is repeated for the leakage area using the same historical rate observed in the reference region but converted to the rate in the leakage area.	Reference Region's boundary. Since the historical deforestation rate observed in the reference region is a blended rate of areas of influence of protected areas and areas which are located within protected areas, applying this rate directly to the project area would have caused an overestimation in the deforestation rates within the project area and an underestimation in the deforestation rates within the leakage area. In order to ensure accurate estimates: a) the spatial model of deforestation was applied to the continuum of project area and leakage area instead of both areas separatedly; b) two new spatial factors (distance to protected areas and location within protected areas) were included. This ensures a model closer to reality as it allows modelling of the behavior of the deforestation agents which are located within the leakage area and could displace towards the protected areas, and it would allow for a "smooth" transition which a priori seems to be closer to reality. The reported deviation is acceptable as per §3.5.1 as it is a deviation from the criteria and procedures relating to monitoring set out in the methodology and they result in an increased accuracy of such quantification.

DNV GL concludes that this deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals as they represent or more conservative options or improvement in the accuracy of the estimates.

3.2.8 *Monitoring Plan*

The project monitoring plan is in compliance with the monitoring methodology VM0006 (Version 2.0) /14/. The monitoring plan will give opportunity for real measurements of achieved net anthropogenic removals by sources. All data recorded and collected will be archived electronically till two years after the crediting period is over.It is DNV's opinion, that the project proponents are able to implement the monitoring plan.

3.2.8.1 Data and parameters available at validation

Parameters used for ex-ante estimates

These parameters are related to the ex-ante estimation of emissions in the project scenario in the project area or the leakage area. DNV GL checked the values applied and confirmed that the values are reasonable and are based on default values sourced from the 2006 IPCC GL or 2003 IPCC LULUCF -

GPG /31/ or on accurate data sourced from the PRA or household surveys /7/. The parameter estimation followed in any case the procedures provided in the applicable methodology.

Parameters used for ex-post estimates

DNV GL validated the following values which are used for ex-post estimates.

- CF Carbon fraction of dry matter in wood [Mg C (Mg DM)$^{-1}$]. Default value of 0.5 (IPCC GPG-LULUCF 2003) /31/
- sc_1 First shape factor for the forest scarcity equation; steepness of the decrease in deforestation rate (greater is steeper). The value assumed is 20 which is conservative.
- sc_2 Second shape factor for the forest scarcity equation; relative deforested area at which the deforestation rate will be 50% of the initial deforestation rate. The value assumed is 0.7 which is conservative.
- $NCV_{biomass}$ NCV_{fuel}Net calorific value of non-renewable biomass that is substituted. [TJ (Mg DM)$^{-1}$]. This is equal to 0.015 as sourced from the 2006 IPCC GL /31/.

3.2.8.2 Data and parameters monitored

- *Parameters updated at each baseline renewal*

Parameters that are updated at each baseline renewal can be divided in parameters required for ex-ante estimates which are not used for ex-post estimates and those which are used for ex-post estimates:

Parameters used for ex-ante estimates

These parameters are related to the ex-ante estimation of emissions in the project scenario in the project area or the leakage area. DNV GL checked the values applied and confirmed that the values are reasonable and are based on default values sourced from the 2006 IPCC GL or 2003 IPCC LULUCF - GPG /31/ or on accurate data sourced from the PRA or household surveys /7/. The parameter estimation followed in any case the procedures provided in the applicable methodology.

Parameters used for ex-post estimates

These parameters have been validated at the time of the present validation and will be used for ex-post estimates until a new baseline renewal or inclusion of instances occurs.

Parameter	Assessment
$size_{projectArea}$, $size_{leakageArea}$, $size_{referenceRegion}$, $size_{referenceForest}$ Size of Project Area, Leakage Area, Reference Region, and forest area in the Reference Region [ha]	These values are sourced from the baseline emission model of the project which was developed as follows: 1. LU maps for the historical period ($size_{referenceForest}$): Different scenes from LANDSAT TM and ETM+ imagery for 1991 and 2013 and Rapid Eye for 2009-2010 were initially used. Imagery which were not already ortorectified (e.g. GLS2000) were ortorectified using the same ortorectification algorithm in order to ensure consistency; the resulting RMS
$\Delta area_{historical}(CS^1, CS^2, t^1, t^2)$ Area of transition from LULC class or forest stratum 1 to 2 from time 1 to 2 during the historical reference period [ha yr^{-1}]	
$RFRGrate(CS^1, CS^2)$ Relative annual forest cover increase and regeneration factor for the transition from class or stratum 1 to 2. [yr^{-1}]	

Parameter	Assessment
Parameter $BetaReg_{DF}(t)$ and $BetaReg_{IDG}(t)$ Historic forest degradation and deforestation modelling $\Delta area_{degradation\ and\ deforestation,projectAreaEAH,baselineScenario,i,t}$ Historical modelling classification undergoing transition i within the Project Area, excluding the ANR area, and harvest areas, under the baseline scenario for year t [ha yr^{-1}] $\Delta area_{degradation\ and\ deforestation,leakageArea,baselineScenario,i,t}$ Historical modelling classification undergoing transition i within the Leakage Area under the baseline scenario during year t [ha yr^{-1}]	error was <1 pixel which is in accordance with the methodology and best practices , a post-classification change detection technique was used in order to determine the land use change in the different sub-periods, consisting in producing one independent LULC maps were produced through a machine learning algorithm (i.e. Random Forests) using overall spectral information, other ancilliary data and using as training data from more than 1000 points. These reference points were visually interpreted by six different intepretors and constituted only those points were 70% agreement between interpretors was reached. The machine learning randomly selected 66% of the points for calibration purposes, using the remaining 33% for internal validation (out of the bag error). The resulting product was post-processed through the application of different filters to ensure compliance with the forest definition and to avoid the mapping of temporal unstocked forests as deforested events. DNV GL confirmed that SOPs were in place in order to ensure the correct implementation of the procedure and the quality in the classification /8/ and ensure through interviews the correct implementation of these /59/. Resulting products were inspected visually in order to confirm the overall classification coherence /3/ and the coherence in the transitions. 2. Historical rate of deforestation ($\Delta area_{historical}(CS_1 \rightarrow CS_2, t_1 - t_2)$, $size_{referenceForest}$, $BetaReg_{DF}(t)$ and $BetaReg_{IDG}(t)$): Once the LULC maps for the three epochs and three sites were produced, these were used in order to determine the historical LULC transitions between epochs, giving values for 2 different sub-periods of the historical period. Following the applicable methodology, since only 3 points were available, the average of the two periods was used for the three sites. Hence, the average deforestation rate was determined for the three sites for the area within the reference region. Furthermore, the historical

Parameter	Assessment
	rate is determined for the reference region considering al non-forest to forest transition categories. The reference region was defined in order to ensure a representative area and eliminate the likelihood of bias as assessed in §3.2.3 Project Boundary of this report. DNV GL re-calculated the transitions and the estimation of the historical rates, and confirmed that the calculations provided by the project proponent are correct /10/. 3. Transition rate ($\Delta area_{projectAreaEAH,baselineScenarioScenario}$ / $\Delta area_{leakageArea,baselineScenario}(t,i)$): t, i): deforestation rate was determined, this was used in order to determine the future transition rates. This was done following the procedures defined in 8.1.4.4 "Calculate All Class or Stratum-Specific Transition Rates" considering the deviation 4 described in §3.2.7 Methodology Deviations of this report. The deforestation probability of each pixel is determined for the continuum project area + leakage area based on different spatial factors which influence the likelihood of deforestation. Based on this probability determination, pixels are "deforested" starting with the high risk pixels and finalizing with the low risk pixels until the annual deforestation rate is reached. This is done in a yearly basis for each of the three sites. In order to account for the forest scarcity principle as explained in the applicable methodology, a correction factor is applied annually to the deforestation rate. DNV GL confirmed through interviews and by visually checking the script /59/ that this procedures was applied correctly. The results for the project area are clipped for estimating the baseline transitions in the project area. DNV GL deems that the reported values of baseline transitions are free of any material misstatement and that they have been determined in compliance with the applicable methodology.
$leakage_{unconstrained}$ (d) Leakage cancellation rate for avoiding deforestation/degradation from	The analysis of drivers of deforestation made as part of the PRA and household survey /7/ did not

Parameter	Assessment
geographically unconstrained drivers.	show the existence of un-constrained drivers (c.f. Section 3.2.6.3 Quantification of Leakage emissions). DNV GL confirmed this extent through specific interviews.
$Fuelwood(t)$ $Fuel(t)$ Average annual volume of biomass fuel consumed by households in the absence of the project activity in year t for cooking purpose. [Mg DM yr^{-1} HH^{-1}].	This is sourced from the household surveys and PRAs /7/. This is equal to 2.72 [t yr^{-1} HH^{-1}]. DNV GL confirmed that this value is conservative through checking with other PDs of projects located within the same region /54//55/.
cooking purpose. [Mg DM yr^{-1} HH^{-1}]. $proportion^{DG}(fuelwood)$ The default proportion of degradation related carbon loss from fuelwood collection activities [-].	The project proponent has assumed a value of 0.95 which is deem reasonable according to DNV.
collection activity of the project cook-stoves or η^{old} Efficiency appliances.	The project proponent has assumed a default value of 0.1 as prescribed by the applicable methodology.
applicable discount factor $DF^{LeakageCFE}(t)$ Leakage applicable to GHG emissions reduction benefits from CFE activities [-]	A default factor from AMS.II.G of 0.95 has been used.
from CFE activities [-] $EF^{non-CO2,fuel}$, $EF^{CO2,fuel}$ Respectively, non--CO2 emission factor of the fuel that is reduced and CO2 emission factor for the substitution of non-renewable woody biomass by similar consumers.	This is equal to 30.3 as sourced from the 2006 IPCC GL /31/. This is equal to 122.22 as sourced from the 2006 IPCC GL /31/.
renewable woody EF^{forest} Emission factor related to leakage.	No value has been defined as this is not applicable for this baseline period.
$f^{allometric}(y)$ Allometric relationship to convert a tree metric such as DBH or tree height into biomass	Various allometric equations have been applied: • Miombo: In order to estimate the aboveground tree biomass, an ecosystem-specificallometric equation sourced from Mugasha et al. (2013) /56/. . In order to estimate the sapling aboveground biomass an allometric equation sourced from Malimbwi et al. (1994) /44/ has been used. DNV GL confirmed that these equations are specific for Miombo and that they provide more conservative values than other equations such as Chave et al. (2005) and Ryan et al. (2011) /45//53/ which may be also applicable. • Evergreen: An allometric equation sourced from Chave et al. (2005) and valid for dry forests was applied. Although the Evergreen forest may be considered as a moist forest, the use of an equation is

Parameter	Assessment
	conservative as confirmed by DNV GL through the referred publication /53/. In order to avoid biases due to buttresses, a correction factor was applied based on specific literature /35//34//36//37//38//39//40//41//42/. • *Mangifera indica*: In non-forest areas some Mango trees are present. In this case specific allometric equations have been applied /49/.
$f_{belowground}(x,y)$ Relationship between aboveground and belowground biomass, such as a root-to-shoot ratio	The belowground biomass estimates were based on the application of the following root-shoot ratios: • Miombo – trees and saplings: 0.235-0.71 depending on the DBH as sourced from Mugasha et al. (2013) which is ecosystem specific;for Miombo; • Evergreen forest: 0.235 sourced from the 2006 IPCC GL /31/. • Non-tree biomass: 2.8 for non-woody biomass as sourced from the 2006 IPCC GL /31/.

- ***Parameters updated at each monitoring event***

Regarding the parameters that will be updated at each monitoring event and that will be used for ex-post estimation of GHG benefits, DNV GL verified them:

$\Delta^{stima}_{area_{projectAreaEAH,proj_{projectScenario}(t,i)}}$ For ex-ante pr$_{t,i)}$ Area (ha) undergoing transition within the Project Area, excluding the ANR area, and harvest areas, under the project scenario for year t. [ha yr^{-1}]	For ex-ante pur[illegible]s, the same procedure followed for scenario (c.f. $\Delta_{area_{projectAreaEAH,baselineScenario}(t,i))}$ h$_{t,i))}$ followed except for steps 1 and 2. The deforestation rate in the project scenario has been determined by multiplying to the deforestation rate in the baseline scenario by the relative project impact rate. The latter is determined based on the information gathered on each deforestation agent through PRAs and household surveys and assuming an expected impact of the different project activities: $D_{projectArea,projectScenario,\ldots} = RelativeProjectImpact_{DF}(t) \ldots_{DF}(t) \cdot D_{projectArea,baselineScenario,DF}(t) \ldots_{DF}(t)$ DNV GL checked all the assumptions for estimating the relative project impact and confirmed that they are always supported by evidence and the values assumed are reasonable.

	The resulting deforestation in the project scenario is converted to land transitions following the same procedures as in the baseline scenario case (c.f. $\Delta area_{projectAreaEAH,baselineScenario}(t,i)$), which was validated by DNV GL in the referred section. This is only estimated following this procedure for ex-ante estimations. For ex-post estimations this will be estimated based on actual transitions observed through remote sensing methods.
Δ Hectares undergoing transition within the Leakage Area under the project scenario for year t [ha yr^{-1}]	For ex-ante purposes, a similar procedure as the one for determining the baseline scenaric is followed (c.f. $\Delta area_{leakageAreaEAH,baselineScenario}(t,i)$), The deforestation rate in the project scenario in the leakage area is determined by multiplying to the deforestation rate in the baseline scenario in the project area by the relative leakage impact impact rate. The latter is determined based on the information gathered on each deforestation agent through PRAs and household surveys and assuming an expected impact pact of project activities: $\Delta D_{LK,DF}(t) = RelativetiveLeakageImpact_{DF}(t)$ $D_{projectArea,baselineScenario,DF}(t)$ DNV GL checked all the assumptions for estimating the relative project impact and confirmed that they are always supported by evidence and the values assumed are reasonable. The resulting deforestation in the project scenario in the leakage area is converted to land transitions following the same procedures as in the baseline scenario case (c.f. $\Delta area_{leakageAreaEAH,baselineScenario}(t,i)$) which was validated by DNV GL in the referred section. This is only estimated following this procedure for ex-ante estimations. For ex-post estimations this will be estimated based on actual transitions observed through remote sensing methods.
$HH^{non-CFE}$ Total number of household in the Project Area that collect biomass fuel from the Project Area and do not use CFE in year t	The project proponent has assumed a total of 35 000 stoves implemented as part of their programme /6/. For ex-post estimations this will be monitored.
n^{CFE} Total number of improved cookstoves and/or fuel efficient appliances [Count].	This value is the same as the one above since one appliance is built per household. For ex-post estimations this will be monitored.
η^{new} Efficiency of the baseline cook stoves or appliances.	The value of 0.26 has been applied as sourced from the ad-hoc measurements reported in the report from Aprovecho Research Center /12/. For ex-post estimations this will be monitored.
f^{CFE} Fraction of cumulative	The project proponent has assumed a cumulative usage rate of 100% since the values provided by TLC is an adoption rate in a

usage rate for technologies in project scenario in year t.	net basis accounting for dropping /6/. For ex-post estimations this will be monitored.
[illegible] plant-derived organic matter of LU/LC class or forest stratum i in pool p. [Mg DM ha-1]	Estimates for the emission factors were based on an ad-hoc carbon inventory conducted between 2010 and 2013 by the project proponent covering all carbon pools, except the Soil Organic Carbon pool in non-forest lands. Data was collected from 67 sample plots for the Miombo category, 5 for the Evergreen category and 14 for the non-forest category. Measurements were made following specific SOPs /8/. DNV GL validated each carbon pool as follows: • Aboveground tree Biomass: The Aboveground estimates were based on measurements of DBH of all trees within a rectangular plot of 0.067 ha. The tree was defined as all plants above 5 cm of DBH, being classified as a sapling if the DBH was below this threshold. In order to estimate the aboveground biomass, different allometric equations were employed as assessed in §3.2.8.2 above. • Belowground tree biomass: The belowground biomass estimates were based on the application of different root-shoot ratios as assessed in §3.2.8.2 above. • Aboveground non-tree Biomass: The aboveground non-tree biomass is composed by sapling biomass and the non-woody biomass. The former has been determined based on measurements at DBH in three sub-plots and counting all saplings of the sample plots, and the application of an allometric equation sourced from Malimbwi et al. (1994) /44/. The latter has been determined based on destructive measurements of all remaining biomass in three sub-plots located within the sample plots. • Belowground non-tree Biomass: The belowground non-tree biomass has been estimated through the application of different root-shoot ratios as assessed in §3.2.8.2 above. • Standing dead wood: The standing dead wood was measured following the same procedures as the aboveground tree biomass and the same allometric equation. In order to account for the different density of dead wood, the estimate of aboveground biomass was multiplied by a density factor dependent on the decay class of the tree: 0.47 for class I, 0.3588 for class II, 0.17 for class III and 0.094 for class IV. • Lying dead wood: The lying dead wood was estimated following the intersection method using two transects of 25 m located within the sample plot. In order to account for the density, three decay classes were used: 0.47 for class I,
[illegible] carbon stock density at time t in stratum i.	

	0.3588 for class II and 0.17 for class III. • Soil Organic Carbon: Soil Organic Carbon for the forest areas was estimated by obtaining core samples at three depths (0-10 cm, 10-20 cm and 20-30 cm) in three sub-plots within each sample plot. Each core had a fixed volume of 100 cm^3. Samples for each of the depths and sub-plots were transferred to the lab in order to dry the samples at 105 ºC in order to obtain the bulk density of each core and a fraction of these were extracted in order to estimate the % of extracted Organic Carbon through the Walkley Black Procedure; converting this to total carbon assuming that 77% of the organic carbon is extracted through this method. The Soil Organic Carbon estimates for non-forest lands was derived from scientific publications as accepted by the applicable methodology. This estimate is sourced, Walker & Desanker (2004) /43/. The estimate used by the project proponent is a weigthed average of the estimates for croplands and fallow lands considering the proportion of each land as provided by Kerr (2005) /48/. DNV GL deems that this value is conservative considering that such values are from a soil with high content of clay and loam, while the soils in the project area are predominantly sandy soil /11/, so the former have inherently a higher carbon content due to the organic-mineral complexes which are much more resistant to degradation. DNV GL review all the assumptions and calculations made and confirmed that they are in accordance to the applicable methodology and that they are correct. For ex-post purposes it is expected that these values will be updated.
$_{uclassification}$ Discounting factor for NERs from avoided deforestation, based on the accuracy of classification, i.e. dividing land into broad land use types.	This discount factor is estimated through the multiplication of two different factors: a) Discount factor based on the number of points in the historical period used to determine the historical baseline deforestation. This is equal to 0.9 since only 3 points in time where used. b) Discount factor based on the accuracy assessment of the LU classification. The LU classification across sites and epochs was done through a non-deterministic model using the machine learning algorithm of Random Forest. This algorithm uses 66% of the training data for the model calibration and 33% for internal validation or accuracy measurement (out-of-the-bag error). According to this internal validation figures the overall accuracy across epochs and sites was above 90%. Therefore no discount factor was required.

	Hence, the overall discount factor is equal to 0.9. For ex-post estimations it has to be ensured that the accuracy of the new LULC maps is over this accuracy.
$u_{transition}$ ($C_{Discounting}$) the emission factor for the transition from LULC class or forest stratum 1 to class 2 according to the uncertainty of the biomass inventory	Discounting factors for the different transition were estimated based on the uncertainty in the estimate provided by an ad-hoc carbon inventory conducted between 2010 and 2013 by the project proponent covering all carbon pools, except the Soil Organic Carbon pool in non-forest lands. The uncertainty for this estimate was based on the standard deviation reported in the publication from which it is sourced, Walker & Desanker (2004) /43/. DNV GL checked the uncertainty calculation for all estimates and the propagation of errors in order to calculate the combined error of transition and confirmed that it was correct /10/. For ex-post estimations this will be updated.

3.2.8.3 Applicability and eligibility of monitoring equipment and procedures

DNV GL confirmed that there are specific procedures defined indicating clearly the frequency, responsibility and the scope of each action. Furthermore, there are 3 SOPs integrated in the management system of the project proponent which rule the monitoring of the PSPs /8/. The project proponent has defined the QA/QC procedures to be applied at:

- SOPs for field measurements: Persons involved in the measurements shall be trained and shall adhere to the SOPs.
- Data collection. A qualified person will be part of the inventory teams.
- Data entry and analysis. Data will be reviewed.
- Data maintenance and archiving. All data will be archived in durable media and stored in multiple locations.

Detailed information has been properly addressed in the VCS-PD /1/. During the site visit, DNV GL was able to verify that necessary procedures related to data handling, quality assurance, and training of operating and monitoring personnel have been appropriately implemented.

In conclusion, the application of the monitoring methodology is transparent and DNV GL considers that the project participants are able to implement the monitoring plan.

3.3 Non-Permanence Risk Analysis

Following the provisions of paragraph 3.19.2 of the VCS Standard Version 3.4 /16/, the project proponent has conducted a non-permanence risk assessment following the provisions of the AFOLU Non-Permanence Risk tool: VCS Version 3.2 /17/. According to this assessment the overall non-permanence risk rating of the proposed project activity is 10%.

Risk Category	Rating
a) Internal Risk	5

b) External Risk	0
c) Natural Risk	5
Overall Risk Rating (a + b + c)	**10 %**

DNV GL confirmed that the non-permanence assessment has been carried adequately and applying conservative assumptions where needed. A detailed assessment of the risk analysis carried out by the project proponent in the non-permanence report can be found in Table 2 of Appendix A of this report.

Therefore, the total buffer credits foreseen in the proposed project activity are: Buffer credits = - 11 563 031 x 10% = 1 156 303 tCO_2e in the crediting period.

3.4 Socio-Economic and Environmental Impacts

The proposed project activity does not require any EIA according to the applicable legislation as it is a "do-nothing" option. This was effectively confirmed during the interview held with the national REDD coordinator /65/ who confirmed this.

A very short summary is provided in the VCS PD /1/, however, this is not required as per the applicable legislation or regulation. DNV GL was able to confirm that the outcome of the impact assessment has been summarized in the VCS-PD and a description of the planned monitoring and remedial measures to address the negative impacts has been included in the VCS-PD.

DNV GL is able to confirm that the project documentation does not raise any issues that could result in any negative impacts.

3.5 Comments by Stakeholders

The proposed project consists in the implementation of various project activities which aim to reduce the increasing illegal encroachment and other illegal activities of three existing protected areas. These activities are illegal in nature and DPW has the right to enforce the law within the project areas as confirmed by DPW staff and other stakeholders /57//60//63/ and through legislation /24/. The proposed project seeks to address these deforestation drivers not through law enforcement but by addressing the underlying causes of deforestation, i.e. the increasing reliance of local livelihoods on the natural resources of the protected areas. The institutional framework for doing this is broadly decentralized where the decision making is mainly in the hands of the Community Associations who represent them /57/. These Community Associations have a democratically elected instrument of governance and from an organization point of view are composed by various Zone Natural Resource Committees (ZNRCs) which group various Natural Resource Committee (NRCs) which in turn group various villages /57/. These organizational arrangements are parallel to already existing traditional institutions which ensures a full integration of these associations /57/.

DNV GL confirmed during the site visit that relevant stakeholders has copies of the PDDs /57//60//63/ and that resumes in local language were provided to the Associations and other community leaders /57//66/. The proposed measures meet the requirements of the CCBS.

DNV GL is able to confirm that the local stakeholder consultation has been carried-out adequately.

4 VALIDATION CONCLUSION

DNV GL Climate Change Services AS (DNV GL) has performed a validation of the project activity "Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi" in Malawi. The validation was performed on the basis of VCSA criteria for the VCS project as well as criteria given to provide for consistent project operations, monitoring and reporting.

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

The project correctly applies the methodology "Carbon Accounting for Mosaic and Landscape-scale REDD Projects", Version 2.0.

The project consists in conversion of an un-logged forest which is legally sanctioned and approved for logging operations to a protected forest. Hence, the project generated GHG emission reductions. As a result, the project results in net anthropogenic GHG removals by sinks which are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total net GHG Emission Reductions generated in the crediting period are equal to 7 468 935 tCO_2e. Considering a buffer of 10% and applying it to the changes in carbon stocks it gives an equivalent buffer in the crediting period of 1 156 303 tCO_2e (No buffer release assumed). The total VCUs from the project in the crediting period are expected to be 6 312 632 tCO_2e. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

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

In summary, it is DNV's opinion that the project activity "Kulera Landscape REDD+ Project for Co-Managed Protected Areas, Malawi" in Malawi, as described in the VCS PD, *version* 14 *dated* 03 July 2014, meets all relevant VCSA requirements for the VCS project and correctly applies the VCS methodology "Carbon Accounting for Mosaic and Landscape-scale REDD Projects", Version 2.0. Hence, DNV GL recommends the registration of the project as a VCS project activity.

Venice and Oslo, 3 July 2014

Andres Espejo
VCS Validator
DNV GL GL US

Oakland, CA, USA July 17th 2014

Dave Knight
Approver

- o0o -

APPENDIX A

VCS VALIDATION PROTOCOL AND VCS RISK ASSESSMENT

Table 1 VCS Requirements checklist

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
1 Project details					
1.1 Summary Description of Project					
1.1.1 Is the summary description of the project clear?	/1/	DR	Yes, the summary description of the project is clear. The proposed project activity consists in the implementation of a REDD activity located in 5 km zones inside the boundaries of three key protected areas in central and northern Malawi, Nyika National Park, Vwaza Wildlife Reserve, and Nkhotakota Wildlife Reserve, covering aproximately 167 000 ha of forests. These protected areas having limited resources for governance and are under increasing pressure from local populations, which have intensified and expanded their exploitation of forest resources to unsustainable levels.		OK
1.1.2 Does the VCS PD include a clearly identifiable project title, version number of the VCS PD and date of the VCS PD?	/1/	DR	☒ Clearly identifiable title of the project activity ☒ Version number of the VCS PD is included ☒ Date of the VCS PD is included.		OK
1.2 Sectoral Scope and Project Type					
1.2.1 Is the project category clearly described? Is the project category part of a GHG program that has been approved by the VCS Board? Is it clearly stated that it is a Grouped project?	/1/	DR I	Yes, the PD clearly states the Sectoral scope and project type. This is: - Sectoral Scope: AFOLU, 14 - Category type: Reducing Emissions from Deforestation and Degradation (REDD) - Project activity: Avoided Unplanned Mosaic		OK

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

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			Deforestation and Degradation (AUMDD) - The project is a grouped project		
1.3 Project Proponent					
1.3.1 The contact information and roles/responsibilities for the project proponent(s) are clearly identified and described?	/1/	DR I	The project proponents are: - Department of Parks and WildlifeDepartment of Parks and Wildlife (DPW) who has the control over the project area. - Nyika-Vwaza Association (NVA). Community Association that represents the villages adjacent in the Project Zone around the Nyika National Park, Vwaza Wildlife Reserve. - Nkhotakota Wildlife Reserve Association (NAWIRA). Community Association that represent the villages adjacent in the Project Zone around the Nkhotakota Wildlife Reserve. - Terra Global Capital, LLC (TGC) a project proponent as an investor in the project and supporting the registration, issuance and marketing of emission reductions, also acting as implementation partner. The VCS-PD includes full contact details of the project proponents.		OK
1.4 Other Entities Involved in the Project					
1.4.1 The contact information and roles/responsibilities for any other the project participant(s) are clearly identified and described?	/1/	DR I	Other entities involved in the project have been identified:		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			- Total Land Care (TLC): It is an implementation partner in charge of project Identification and Design, Implementation of REDD+ Activities and Livelihoods Programs. - CARE, Malawi: It is an implementation partner who has focused on supporting the formation of Village Savings and Loan groups including training on economic activities, selection, planning and management. - Sacranie, Gow & Company: Legal advisor. - Dentons US LLP: Legal advisor. - United State Agency for International Development (USAID): Funder of the initial project activities. The VCS-PD includes full contact details of other entities involved in the project.		
1.5 Project start date					
1.5.1 What is the project start date? Is the date correctly defined with support evidence?	/1/	DR I	According to the VCS PD, the project start date is 1 October 2009 which is the date in which the first project activities for reducing emissions took place by TLC, i.e. date in which TLC started to implement project activities as part of USAID's funded project. The accuracy of this date was effectively confirmed by DNV GL through the Year 1 implementation report which indicates the commencement of activities in October 2009 /6/.		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
1.5.2 Is the starting date complying with the following conditions? (VCS Standard Version 3.4; §3.7.3-3.7.4) ✓ Non-AFOLU projects shall complete validation within two years of the project start date. ✓ AFOLU projects with a project start date on or after 8 March 2008 shall complete validation within five years of the project start date. ✓ AFOLU projects with a project start date on or after 1 January 2002 and before 8 March 2008 shall complete validation before 8 March 2013.	/1/	DR I	The starting date of the project activity would be in any case after 8 March 2013. In the case of a successful validation it is expected that this will occur within 5 years of the starting date.		OK
1.5.3 Is the starting date the date on which activities that lead to the generation of GHG emission reductions or removals are implemented? (AFOLU requirements: VCS Version 3.4; §3.2.1)	/1/	DR I	Yes, the starting date is the date in which activities that lead to the generation of GHG emission reductions or removals was implemented as explained in criterion 1.5.3 above.		OK
1.6 Project crediting period					
1.6.1 What is the crediting period start date? Is the date determined appropriately? What is the selected crediting period? Is it in compliance with the following? (VCS Standard Version 3.4; §3.8.1) ✓ For non-AFOLU projects and ALM projects focusing exclusively on reducing N2O, CH4 and/or fossil-derived CO2 emissions, the project crediting period shall be a maximum of ten years which may be renewed at most twice. ✓ For all other AFOLU projects other than such ALM projects, the project crediting period shall be a minimum of 20 years up to a maximum of 100 years, which may be renewed at most four times with a total project crediting period not to exceed 100 years.	/1/	DR I	The project crediting start date is equal to the start date of the project activity, i.e. the date on which activities that lead to the generation of GHG emission reductions or removals are implemented. The chosen crediting period is of 30 years /1/ which is in accordance with the VCS Standard Version 3.4 which sets a minimum of 20 years up to a maximum 100 years for AFOLU projects.		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
1.6.2 The project has a credible and robust operating plan covering the project crediting period? (AFOLU requirements: VCS Version 3.4; §3.3.1)	/1/ /5/	DR I	The project proponent has in place a robust operating plan in order to manage the project for the whole crediting period. This is confirmed by the agreements in place which establish clearly the roles and responsibilities and the project operation for the whole crediting period/4/ and as confirmed by the business plans for the project activities /5/.		OK
1.6.3 The length of the project crediting period is set to include at least one complete rotation cycle that includes harvesting? (AFOLU requirements: VCS Version 3.4; §3.3.2) Only for ARR/IFM with harvesting.	/1/	DR I	Not applicable since this is not an ARR or an IFM project.		OK
1.7 Project Scale and Estimated GHG Emission Reductions of Removals					
1.7.1 How many tonnes CO_2 equivalent emissions reductions per year will be generated? Is the project size correctly defined?	/1/ /16/	DR	The project is classified as a 'large project' as the estimated annual GHG emission removals is less than or equal to 300 000 tCO_2e.		OK
1.8 Description of Project Activity					
1.8.1 Is the description of the project clear? What activities and facility are included in the project?	/1/	DR I	Yes, the project description is clear and is correct. This was effectively confirmed during the site visit.		OK
1.9 Project Location					
1.9.1 For AFOLU projects: Is a delineation of the geographic boundary of each project specified using geodetic polygons to delineate the geographic area of each AFOLU project activity and provided in a KML file?	/1/	DR I CC	The proposed REDD activity is located within three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. The proposed project targets all forested areas within 5 km		OK

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

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			inside those protected areas. The accuracy of these limits was confirmed during the interviews held with the different staff of the DPW /60//63/. These limits have been provided in a KLM file to be uploaded.		
1.9.2 Is the project location specified in the PD in terms of its project area? The spatial extend of the project shall be clearly specified to facilitate accurate monitoring, reporting and verification, and to demonstrate that the project meets the eligibility criteria. (AFOLU requirements: VCS Version 3.4; paragraph 3.4.1)	/1/	DR I	The project description specified in the VCS-PD is in terms of its project area. The project proponent provides in the VCS PD maps with the exact location of all polygons.		OK
1.9.3 Does the project location description include the following information? (AFOLU requirements: VCS Version 3.4; paragraph 3.4.1) - Name of the project area (eg, compartment number, allotment number and local name). - Maps of the project area. - Geographic coordinates of the project area boundary, provided in the format specified in the VCS Standard. - Total size of the project area. - Details of ownership.	/1/	DR I	DNV GL checked the VCS PD and confirms that the VCS PD includes the following information: -The proposed project activity is located within three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve.. DNV GL confirms that this is correct. -Maps of the project area, of the areas eligible as VCS project, and of the polygons that are part of the project boundary are included in the VCS-PD. -The project proponent has provided a map of each polygon that constitutes the project area. -The project proponent includes information on the details of ownership. The project proponent is the DPW who has the control on any declared National Park or Widlife Reserve in accordance		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			to the National parks and wildlife act (1992) /24/.		
1.9.4 Where the project area is comprised of multiple polygons (parcels), has the project location details of each polygon/parcel been included in the project description? (AFOLU requirements: VCS Version 3.4; paragraph 3.4.1)	/1/	DR	Yes, the location of each polygon is provided.		OK
1.9.5 Is the entire project area under the control of the project proponent at time of validation? Is this demonstrated with right of use as specified in VCS Standard Version 3.4? (AFOLU requirements: VCS Version 3.4; paragraph 3.4.2)	/1/	DR I CC	The initial instance of the proposed project is implemented within the limits of three protected areas which are under the control of DPW in accordance to the National parks and wildlife act (1992) /24/. Since DPW is a project proponent it is confirmed the right of use on these initial instances.		OK
1.10 Conditions prior to project initiation					
1.10.1 Are the conditions prior to project initiation clearly described in the VCS PD with support evidence?	/1/	DR	The VCS PD provides clear information on the conditions prior to project initiation.		OK
1.10.2 What are the main events over the project initiation stage?	/1/	DR I	**CL1:** **Requirement:** VCS PD template **Evidence:** VCS PD Version 3.0 **Clarification:** a) Clarification is sought in Section 1.10 of the VCS PD on what is the list of the main events/milestones of the project activity from the feasibility stage passing through the starting date up to the current date.	~~CL1~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
1.10.3 Does the VCS PD contain a demonstration that the project area was not cleared of native ecosystems within the ten year period prior to the proposed project start date? (AFOLU requirements: VCS Version 3.4; paragraph 3.1.6)	/1/	DR I	Not applicable since the proposed project activity is a REDD project.		OK
1.11 Compliance with Laws, Statutes and Other Regulatory Frameworks					
1.11.1 What relevant local laws and regulations related to the project are identified? What appropriate approaches are taken to ensure complete identification?	/1/	DR I	The applicable local laws and regulations related to the project are listed in the VCS PD. DNV GL confirmed during the interview held with staff of the DPW /60//63/ and with the national REDD coordinator /65/ that local laws and regulations do not restrict or regulate the type of project activity, so this is in compliance with applicable laws and regulations.		OK
1.11.2 Is the project in compliance with all the relevant local laws and regulations? How is this demonstrated?	/1/	DR I	DNV GL confirmed during the interview held with staff of the DPW /60//63/ and with the national REDD coordinator /65/ that local laws and regulations do not restrict or regulate the type of project activity, so this is in compliance with applicable laws and regulations.		OK
1.12 Ownership and Other Programs					
1.12.1 Right of Use					
1.12.1.a The project description shall be accompanied by proof of title in respect of one or more of the following rights of use accorded to the project proponent: 1) A right of use arising or granted under statute, regulation or decree by a competent authority. 2) A right of use arising under law. 3) A right of use arising by virtue of a statutory, property	/1/	DR I	The proposed project activity is located within three different Protected Areas in the Northern and Central Regions in Malawi: Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. According to the National parks and wildlife act (1992) /24/ these	~~CL2~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals (where such right includes the right of use of such reductions or removals and the project proponent has not been divested of such right of use). 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 removals and the project proponent has not been divested of such right of use). 5) An enforceable and irrevocable agreement with the holder of the statutory, property or contractual right in the plant, equipment or process that generates GHG emission reductions and/or removals which vests the right of use in the project proponent. 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 generates GHG emission reductions or removals which vests the right of use in the project proponent. 7) A right of use arising from the implementation or enforcement of laws, statutes or regulatory frameworks that require activities be undertaken or incentivize activities that generate GHG emission reductions or removals.			lands are public lands being under control of the Government through the Department of Parks and WildlifeDepartment of Parks and Wildlife (DPW) who has the effective control on these areas. Since DPW is the project proponent it would be confirmed that the project proponent has a right of use arising under law. Furthermore, the other three project proponents /4/ and DPW have signed an agreement for the carbon development, carbon rights and benefits sharing with respect to emission reductions for the Kulera biodiversity landscape REDD+ project whereby the latter agrees to vest the right of use in a independent entity participated by all four project proponents which will manage the revenues coming from the commercialisation of carbon credits. Therefore, the other 3 project proponents would have 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 removals and the project proponent has not been divested of such right of use).VCS Standard Version 3.4 requirements. **CL2** **Requirement:** ¶3.11.1 of VCS Standard Version		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			3.4 requirements **Evidence:** VCS PD Version 3.0 **Clarification:** a) During the site visit DPW-Vwaza confirmed that there was an area of Vwaza wildlife reserve which has been subject to serious encroachment in the past. As a result, the limits of the protected area are going to be redefined while the encroached area will be given as customary land. The project proponent is requested to clarify if it would have the right of use over these areas.		
1.12.2 Emissions Trading Programs and Other Binding Limits					
1.12.2.a The project reduces GHG emissions from activities that: - Are included in an emissions trading Program; or - Take place in a jurisdiction or sector in which binding limits are established on GHG emissions;	/1/	DR	The proposed project activity is a REDD project activity, and it is located in a non-Annex I country. Therefore, the GHG removals generated would not be part of an emission trading Program, nor it is located in a jurisdiction or sector with binding limits.		OK
1.12.2.b Have the project proponents provide evidence that the reductions or removals generated by the project have or will not be used in the Program or jurisdiction for the purpose of demonstrating compliance?	/1/	DR	Not applicable as stated above.		OK
1.12.3 Participation Under Other GHG Programs					
1.12.3.a Has the project has been registered, or is seeking registration under any other GHG programs?	/1/	DR I	The proposed project activity does not participate in any other GHG program.		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
1.12.3.b Where the project has been registered under any other GHG program, provide the registration number and details.	/1/	DR	Not applicable.		OK
1.12.4 Other Forms of Environmental Credit					
1.12.4.a If the project has created another form of environmental credit, has the proponent provided a letter from the program operator that the credit has not been used and has been cancelled from the relevant program?	/1/	DR I	The proposed project activity does not generate another form of environmental credit. The validity of all this information were confirmed during the meeting held with the REDD country coordinator /65/.		OK
1.12.4.b If it is stated that the project has not created another form of environmental credit, how has this statement properly demonstrated?	/1/	DR I	The proposed project activity does not generate another form of environmental credit. The validity of all this information were confirmed during the meeting held with the REDD country coordinator /65/.		OK
1.12.5 Project Rejected by Other GHG Programs					
1.12.5.a Has the project been rejected by other GHG programs?	/1/	DR	The proposed project activity has not been rejected in any other GHG program.		OK
1.12.5.b If the project has been rejected by other GHG programs has the proponent clearly stated in the VCS PD the reason of rejection? And have the actual rejection documents including explanation been provided by the proponent?	/1/	DR	Not applicable.		OK
1.13 Additional Information Relevant to the Project					
1.13.1 Eligibility criteria (Grouped projects)					
1.13.1.a Are the eligibility criteria for the inclusion of new instances clearly identified? Do they ensure that the new instances comply with:	/1/	DR	**CAR1** **Requirement:** ¶3.4.9 VCS Standard Version 3.4 **Evidence:** VCS PD Version 3.0	~~CAR1~~	OK

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

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
- applicability conditions set out in the methodology applied to the project; - Use the technologies or measures defined in the project description; - Apply the technologies or measures in the same manner as defined in the project description; - Are consistent with the rationale applied to the demonstration and assessment of additionality set out in the project description?			**Non-Conformity:** No eligibility criteria for the inclusion of new instances has been provided. The project proponent shall note that it should not be just a copy-paste of the requirement but it should use the requirement as basis for developing ad-hoc EC.		
1.13.2 Leakage management					
1.13.2.a The potential for leakage shall be identified and projects shall consider including leakage management zones (leakage belts) as part of the overall project design (AFOLU requirements: VCS Version 3.4; paragraph 3.5.1)	/1/	DR I	The VCS PD provides enough information on this.		OK
1.13.3 Commercially Sensitive Information					
1.13.3.a Has any commercially sensitive information been excluded from the public version of the VCS PD that will be displayed on the VCS Project Database? If yes, can the excluded information be justified as being commercially sensitive?	/1/	DR	The VCS PD provides enough information on this.		OK
1.13.4 Further Information:					
1.13.4.a Is the information included complete?	/1/	DR	The project proponent has included information on ecology, soils and past land use. Information is complete and correct.		OK
1.13.4.b If it is a project with tree harvesting, does the VCS-PD include a demonstration that the permanence of their carbon stock is maintained and that management systems are in place to ensure the carbon against which VCUs are issued is not lost during a final cut with no subsequent replanting or regeneration? (AFOLU requirements: VCS Version 3.4; paragraph 3.7.1)	/1/	DR	Not applicable since no harvesting occurs in the project scenario.		OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
2 Application of Methodology					
2.1 Title and Reference of Methodology					
2.1.1 Does the project apply a VCS program approved methodology and the correct version thereof?	/1/ /14/	DR	The proposed project activity applies the CDM methodology VM0006 Version 2.0 "Carbon Accounting for Mosaic and Landscape-scale REDD Projects".		OK
2.1.2 Has any methodology revision been applied? If yes, has the revision been approved through double-approval process?	/1/	DR	The project proponent applies version 2.0 which has been approved through double-approval process.		OK
2.2 Applicability of Methodology *How was it validated that project complies with the following applicability criteria:*					
Criteria related to conditions on the land before project implementation:					
2.2.1 Land in the project area, consisting of either one contiguous area or multiple discrete project parcels (see definition of project area), shall meet an internationally accepted definition of forest, such as those based on UNFCCC host-country thresholds or FAO definitions, and shall qualify as forest for a minimum of 10 years before the project start date.	/1/ /14/	DR I	**CAR2** **Requirement:** Applicability criteria of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The project area has been defined in the PD as the areas that are within 5 km of 3 protected areas, including forest and non-forest areas at the time of the start date. However, according to applicability criteria 1 the project area shall constitute only those areas that meet the definition of forest: a) at the time of the start date AND b) for a minimum of 10 years before the	~~CAR2~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			project start date, not including any non-forest areas.		
2.2.2 The project area would be deforested in absence of the REDD project activity, as evidenced by (1) the presence of deforestation agents and drivers near the project area (see the following criterion), and (2) an average deforestation rate or forest degradation rate during the historical reference period of at least 0.5%. In instances where the average deforestation rate or forest degradation is less than 0.5%, this methodology can still be applied if the project proponents can demonstrate that the likely course of deforestation or forest degradation will exceed 0.5% during the project crediting period in the absence of the project. In addition, the deforestation and/or forest degradation in the reference region must be mosaic in nature, as described in the VCS AFOLU requirements.	/1/ /14/	DR I	The proposed project consists in the implementation of a REDD activity located in 5 km zones inside the boundaries of three key protected areas in central and northern Malawi. These areas are the interface between the core of the protected areas and the adjacent local communities, and are under increasing pressure from local communities. This was effectively confirmed through the Household (HH) Surveys and the PRAs conducted in these areas /7/ which show that adjacent communities have access to the protected areas and they are sourcing some materials from these areas. The PRA /7/ shows that these communities access mainly to the initial 5 km. This was further confirmed during the interviews held with local communities /66//57/ and the DPW /60//63/. The impact of these drivers on these areas is further confirmed through the LULC maps and their transitions /3/ which show that within these protected areas deforestation is occuring and that the levels of deforestation within protected areas reach and exceed 0.5% in the historical reference period. Hence, DNV GL is able to confirm: a) the presence of drivers and agents of deforestation close to the project areas; b) and that these are already having an effect within		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			protected areas, showing that project areas are expected to be subject to these rates.		
2.2.3 Deforestation and forest degradation in the project area occurs due to one or more of the following categories of drivers i. Conversion of forest land to cropland for subsistence farming ii. Conversion of forest land to settlements iii. Conversion of forest land to infrastructure, including new roads iv. Logging of timber for commercial sale (i.e., wood planks or poles for commercial sale) v. Logging of timber for local enterprises and domestic uses (i.e., poles and posts as local construction materials, furniture, wood crafts, and canoes) vi. Wood collection for commercial sale of fuelwood and charcoal vii. Fuelwood collection for domestic and local industrial energy needs (i.e., cooking, home heating, tobacco curing, brick making) viii. Cattle grazing in forests ix. Extraction of understory vegetation (e.g., thatch grass collection for roof and livestock bedding materials, shrubs and small trees for straw fences) x. Forest fires to the extent that they are not part of natural ecosystem dynamics (e.g., forest fires related to hunting, honey collection, intentional land clearing on land with a high fuel-load) None of the drivers listed here may be planned in nature. If deforestation from a specific driver is occurring as a result of planned forest conversion activities, then such a driver must be excluded from analysis.	/1/ /14/	DR I	The PRA /7/ shows that the main drivers of deforestation are: - Collection of wood for charcoal - Conversion of forest to small-scale agriculture - Forest fires by hunters (mice hunters) - Forest fires for other anthropogenic reasons - Other - Wood and poles for construction and domestic use - Wood for cooking and heating locally - Wood for tobacco curing. This was further confirmed during the interviews held with local communities /66//57/ and the DPW /60//63/.		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
2.2.4 Accurate data on past land use, land cover (LULC) and forest cover in the reference region are available for at least three points in time, with at least one remote sensing image (i.e., data) from 0-3 years before the project start date, at least one image from 4-9 years before the project start date, and at least one image from 10-15 years before the project start date. No images older than 15 years may be used for the historical reference period.	/1/ /14/	DR I	To establish the baseline, at least three historical remote sensing images are used with at least one remote sensing image from 0-3 years before the project start date and at least one image from 4-9 years before the project start date /3/. The third image is of 9.75 years before the start date so it is close enough to 10-15 years before the Project start date and it will not impact the conservativness of the estimates as confirmed by DNV GL as: a) the difference of almost 1 year would not have a major impact in the baseline; b) the main reason for not selecting an image of an earlier date is the quality and the cloud cover, so using this image would improve the accuracy of the baseline estimates. No images older than 15 years used for the historical reference period /3/.		OK
2.2.5 The classification accuracy of LULC and forest cover maps is greater than 70%. Credits from avoided degradation may only be included if the accuracy of determining forest strata is at least 70%.	/1/ /14/	DR I	The accuracy assessment shows an accuracy well above the minimum of 70% required.		OK
2.2.1 This methodology is not applicable to organic soils or peatland.	/1/ /14/	DR I	No organic soils or peatland is present in the project areas as confirmed through the Bio Physical Survey conducted by a third party in the project area /11/.		OK
Criteria related to conditions on the land after project implementation:					
2.2.2 This methodology is applicable to projects that implement one or more of the following activity categories:	/1/	DR	DNV GL was able to confirm that the proposed project includes project activities listed in the		OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
• Strengthening of land-tenure status and forest governance. • Support for the development and implementation of sustainable forest and land use management plans. • Demarcating forest, tenure and ownership boundaries; forest protection through patrolling of forests and forest boundaries; social inclusions and stewardships in communities; social fencing through capacity building; and creating mechanisms to alert law enforcement authorities of forest trespassing. • Fire prevention and suppression activities including the construction of fire breaks, reduction of fuel loads, prescribed burning, education to minimize intentionally started fires, support for fire brigades, water cisterns, fire lookouts, and communication systems. • Reducing fuelwood consumption and/or increasing energy efficiency by introducing fuel-efficient woodstoves or brick kilns and curing equipment. • Creation of alternative sources of fuelwood through agroforestry, farm woodlots management and introduction/intensification of other renewable and non-fossil fuel based energy sources (such as solar). • Sustainable intensification of agriculture on existing agricultural land. • Development of local enterprises based on sustainably harvested NTFPs such as honey, medicinal plants, etc.	/14/	I	applicability criteria of the methodology as confirmed through the annual implementation reports presented by TLC to USAID /6/ and confirmed through interviews /57//58//62//66/.		
Criteria related to optional Cook stove and Fuel Efficiency activities (CFE) activities					
2.2.3 GHG emissions reductions credits from CFE activities must come from the project area. The CFE activities are implemented by project proponents managing the REDD projects in which households and/or local institutions are the actual users.	/1/ /14/	DR I	The applicability criterion was validated as follows: - CFE project activities are implemented in the 10 km buffer from the limits of the	~~CL3~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
• Fuelwood use such as collection of fuelwood, and charcoal production has been identified as one of the driver of deforestation and degradation in the REDD project according to the procedure under this methodology. The REDD project forests and leakage belts must be the source for non-renewable wood in the baseline. • Activities that require less fuelwood for cooking either by switching to high efficiency cook stoves or alternative to biomass stoves or appliances are eligible. It is allowed to use multiple CFE activities. • It must be shown that under the baseline scenario, at least 50% of the households in the reference region continue using traditional cook stoves. The low adoption of CFE activities in the baseline can be demonstrated from local or regional statistics on wood fuel use."			protected areas /6/ so it targets HH that source partly their energy requirements from the project area. This is confirmed by the PRA report /7/ which shows this extent. - CFE project activities are implemented by TLC as part of the proposed project /6/. - The PRA /7/ shows that woodfuel for firewood and charcoal production has been identified as one of the driver of deforestation. These are sourced from the project area and leakage belts as shown in the PRA /7/. - CFE activities consist in training to HH for the implementation of stoves which have a higher efficiency than those observed in the baseline (i.e. 3 stone stoves). The use of these stoves was confirmed through visual inspections of few households and interviews /66//57/. **CL3** **Requirement:** Applicability criteria of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.2 of VCS PD on whether at least 50% of the households in the reference region continue using traditional cook stoves in the baseline		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			scenario as required by §4.1.4 of the MED..		
Criteria related to optional intensification of annual crop production systems as a leakage prevention activity					
2.2.1 Intensification of annual crop production systems as a leakage prevention activity (see Section 8.3.4.1) is optional, but shall only be introduced if all of the following conditions are demonstrated: • The agricultural intensification measures are implemented only on land that is located within the leakage belt. • The agricultural intensification measures are implemented only on land on which annual crop production systems are implemented. • The agricultural intensification measures are implemented on land that is already under annual crop production systems at the time of validation. • The agricultural intensification measures shall not be implemented on organic soils.	/1/ /14/	DR I	The intensification of annual crop production systems in the case of the proposed project are mainly focused in the - establishment of conservation agriculture practices (3346 ha) - crops diversification (87 ha groundnuts, 19.2 ha Soya) - Irrigation (106 ha) - tree planting (5 880 378 seedlings) - Fertilizer procurement (15.5 t), - Coffee seedling production (128 712 seedlings) - Tree planting of macadamia trees (18 195 seedlings) - The agricultural intensification measures are all implemented in areas of annual cropland. No new areas are open as part of the project. - No organic soils have been identified in the leakage areas. **CL3** **Requirement:** Applicability criteria of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**:	~~CL3~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			b) Further information is required in section 2.2 of VCS PD on: a) the exact agriculture intensification practices in place; b) the rationale of part of the intensification practices not being within the leakage area.		
Criteria related to an optional increase in livestock stocking rates as a leakage prevention activity					
2.2.2 Increasing livestock stocking rates as a leakage prevention activity is optional, but shall only be introduced if all of the following conditions are demonstrated: • Increased stocking only occurs within the leakage belts of the project area, not within the project boundary, see AR-AM0006 (Version 02) applicability criterion (i). • If the proposed activity produces forage to feed livestock, all forage shall have a similar nutritional value and digestibility, and will support only a single livestock group with a single manure management system, see AR-AM0006 (Version 02) applicability criterion (k). • If the stocking rate is increased for animals that are already in a zero-grazing system or are moved to a zero-grazing system then the grazing activity that is monitored is the production of fodder, see Point 5 in the CDM tool "Estimation of GHG emissions related to displacement of grazing activities in A/R CDM project activity" (Version 02) • Increased stocking rates shall only occur on Identified Forest land, Identified Cropland, Identified Grassland, and Unidentified land, see Point 6 in the CDM tool "Estimation of GHG emissions related to displacement of grazing activities in A/R CDM project activity"	/1/ /14/	DR I	The project has established the following: - Pigs (32 pigs) - Poultry (2224 Chickens) - Goats (No goats) **CL3** **Requirement:** Applicability criteria of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**: c) Further information is required in section 2.2 of VCS PD on whether the project activity consisting in the introduction of livestock is in compliance with the applicability conditions of §4.1.8 of the MED.	~~CL3~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
(Version 02) • Increased stocking rates shall not occur on Settlements, Wetlands, or Other lands – as defined by the GPG LULUCF (i.e. bare soil, rock, ice, and all unmanaged land areas that do not fall into category of forest land, cropland, grassland, settlements or wetlands), see Point 7 in the CDM tool "Estimation of GHG emissions related to displacement of grazing activities in A/R CDM project activity" (Version 02)					
2.2.3 Other applicability conditions (i.e. tools, etc.)	/1/	DR I	The only applied tool is "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0). This tool has the following applicability criteria which are complied with: a) The Project is proposing similar AFOLU baselines to the proposed project activity and the credible baselines do not lead to a violation of any applicable laws even if the law is not enforced; and b) The Project has used the baseline methodology to provide for a stepwise approach in justifying the determination of the most plausible baseline scenario. **CL3** **Requirement:** Applicability criteria of "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0). **Evidence:** VCS PD Version 3.0	~~CL3~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			Clarification: d) Further information is required in section 2.2 of VCS PD on whether the proposed project is in compliance with the applicability criteria of the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0).		
2.3 Project Boundary					
2.3.1 What are the project's system boundaries (components and facilities used to mitigate GHGs)? Are they clearly defined and in accordance with the methodology?	/1/ /14/	DR I	Project boundary The project boundary has been defined as those areas that are eligible under VCS Standard Version 3.4. Please refer to CAR2. Temporal boundaries: In line with VCS requirements the baseline will be re-assessed every 10 years.	~~CAR2~~	OK
2.3.2 Are all relevant GHG sources and carbon pools identified and assessed for the project (including leakage) and baseline scenario? Is this in line with VCS AFOLU provisions? (AFOLU requirements: VCS Version 3.4; paragraph 3.5.1; paragraph 4.3.1)	/1/ /14/	DR I	Following the provisions of VM0006 the project proponent has considered the following carbon pools : - Aboveground Tree Biomass - Abovegrond Non-Tree - Belowground Biomass - Deadwood (DW) - Soil Organic Carbon (SOC) - Wood Products (WP) **CAR3**	~~CAR3~~	OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			Requirement: §5.2 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The PD justifies the inclusion of the SOC pool by stating that "the conversion of forest to small-scale agriculture, as well as fires which lead to conversion to agriculture, are major drivers of deforestation". However, according to the information on the importance of drivers and agents of deforestation /10/ and according to the information gathered during the site visit (i.e. stakeholders confirmed that the the main drivers are wood harvesting for tobacco barns, woodfuel collection for firewood or charcoal, forest fires) conversion to small-scale agriculture is not a major driver of deforestation. According to the applicable methodology, the SOC pool may be only included on the condition that the land cover under the baseline scenario is comprised of annual cropping systems. b) The PD has excluded the Wood Products carbon pool without providing a justification. Considering that some of the wood products extracted from forests may be of the mid-term wood products pool (wood for tobacco barns) the justification of its exclusion or its inclusion is required..		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
2.3.3 Which GHG sources, sinks and reservoirs are identified for the baseline scenario? Is the identification complete?	/1/ /14/	DR I	The following GHG sources, sinks and reservoirs are identified as per the applicable methodology: ✓ Forest Deforestation and Degradation: CO2 linked to degradation which is addressed by the CFE component; CH4 and N2O emissions from CFE activities.		OK
2.3.4 Which GHG sources, sinks and reservoirs are identified for the project scenario? Is the identification complete?	/1/ /14/	DR I	The following GHG sources, sinks and reservoirs are identified as per the applicable methodology: ✓ Cookstove and Fuel Efficiency (CFE) activities: CO2 linked to degradation which is addressed by the CFE component; CH4 and N2O emissions from CFE activities. ✓ Removal of woody biomass for fire prevention and suppression activities, and for ANR activities. **CL4** **Requirement:** §5.2 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.3.2 of the VCS PD on the rationale of excluding emissions from the removal of woody biomass for fire prevention and suppression activities.	~~CL4~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			During the site visit staff of the DPW confirmed that fire prevention activities such as prescribed burning are planned in the future. If this emission source is not excluded or demonstrared to be negligible, provisions of the methodology should be followed in order to monitoring and account for these emissions.		
2.3.5 Which GHG sources, sinks and reservoirs are identified for leakage? Is the identification complete?	/1/ /14/	DR I	The following GHG sources, sinks and reservoirs are identified as per the applicable methodology: ✓ Increased area of rice production systems. This is not applicable as this project activity will not be implemented. ✓ Increased livestock stocking rates **CL4** **Requirement:** §5.2 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**: b) Further information is required in section 2.3.2 of the VCS PD on the rationale of excluding emissions from increased livestock stocking rates. During the site visit it was confirmed that some project activities consist in providing livestock to local communities. If this emission source is not excluded or demonstrared to be negligible, provisions of the methodology should be followed in order to monitoring and account	~~CL4~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			for these emissions.		
2.4 Baseline					
2.4.1 Is the extent of analysis at least the defined geographic boundary of the project? Is this clearly specified in the VCS PD? (Grouped)	/1/	DR	**CL5** **Requirement:** §3.4 of VCS Standard Version 3.4. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.3.2 of the VCS PD on which is the geographic region within which project instances may be developed as required by 3.4.2 of the VCS Standard. b) Clarification is sought on whether different baseline scenarios will be defined for different designated geographic region as required by 3.4.5 and 3.4.7 of the VCS Standard.	~~CL5~~	OK
2.4.2 Is the selected baseline one of the baseline(s) described in the methodology and this hence confirms the applicability of the methodology? What is the baseline scenario?	/1/ /22/	DR I	Following the provisions of VM0006, the most plausible baseline scenario according to the CDM modalities and procedures, paragraph 22, is option (a): *Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary.* This baseline scenario is prescribed by the methodology and it will be based in the historical information of the reference region.		OK
2.4.3 Which baseline scenarios have been identified? Is the	/1/	DR	Not applicable.		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
list of baseline scenarios complete?	/22/				
2.4.4 How have the other baseline scenarios been eliminated in order to determine the baseline? Is the determination of the baseline scenario in accordance with the guidance in the methodology?	/1/ /22/	DR I CC	Not applicable.		OK
2.4.5 Has the baseline scenario been determined using conservative assumptions where possible?	/1/ /22/	DR	Not applicable.		OK
2.4.6 Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/ /22/	DR	Not applicable.		OK
2.4.7 Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	/1/	DR I	Not applicable.		OK
2.4.8 Is the baseline determination adequately documented in the VCS PD? - All assumptions and data used by the project proponents are listed in the VCS PD. The data are properly referenced. - All documentation is relevant as well as correctly quoted and interpreted. - Assumptions and data can be deemed reasonable - Relevant national and/or sectoral policies and circumstances are considered and listed in the VCS PD. - The methodology has been correctly applied to identify what would occurred in the absence of the proposed VCS project activity	/1/ /22/	DR	Not applicable.		OK
2.5 Demonstration and Assessment of Additionality					
2.5.1 What approach does the project use to assess additionality? Is this in line with the methodology?	/1/	DR	Following the provisions of VM0006, the project	~~CAR4~~	OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
	/14/		proponent has applied the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0) in order to demonstrate the project's additionality. **CAR4** **Requirement:** §7 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The VCS PD does not provide a discussion of project's Additionality following the provisions of the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0) as required by the applicable methdology.		
2.5.2 Have the regulatory requirements correctly been taken into account to evaluate the project activity and the alternatives?	/1/ /14/ /65/	DR I	The project proponent has considered the main national, local and Sectoral land-use policies and regulations that would be applicable to the project area.		OK
2.5.3 Is sufficient evidence provided to support the relevance of the arguments made?	/1/	DR I	Yes, the project proponent has supported any statement or argument with supporting evidence which is clearly verifiable.		OK
Investment analysis					
2.5.4 Does the project activity or any of the remaining alternatives generate revenues apart from VCUs? Is this reflected in the VCS PD?	/1/	DR	Not applicable.		OK
2.5.5 Do any of the alternatives to the project activity involve	/1/	DR	Not applicable.		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
investment? Is this reflected in the VCS PD?					
2.5.6 Is the choice of benchmark analysis, investment comparison or simple cost analysis correct?	/1/	DR	Not applicable.		OK
2.5.7 Is the benchmark/discount rate the latest available at the time of decision?	/1/	DR	Not applicable.		OK
2.5.8 What is the financial indicator? Is it on equity/project basis? Before/after tax? Is the financial indicator in correspondence with the benchmark?	/1/	DR	Not applicable.		OK
2.5.9 Are the underlying assumptions appropriate, e.g. what is considered as waste in the baseline is considered to have zero value?	/1/	DR	Not applicable.		OK
2.5.10 Does the income tax calculation take depreciation into account? Is the depreciation year in accordance with normal accounting practice in the host country?	/1/	DR	Not applicable.		OK
2.5.11 Is the time period of the investment analysis and operating time of the project realistic? Has salvage value been taken into account? Is working capital returned in the last year of operation?	/1/	DR	Not applicable.		OK
2.5.12 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 VCS PD are fully consistent with the FSR and is the period of time between finalization of the FSR and the investment decision adequate?	/1/	DR	Not applicable.		OK
2.5.13 How was the amount of output (e.g. sales of electricity) assessed?	/1/	DR	Not applicable.		OK
2.5.14 How was the output price (e.g. electricity price) assessed? Were the data available and valid at the time of decision?	/1/	DR	Not applicable.		OK
2.5.15 How were the investment costs assessed? Were the data available and valid at the time of decision?	/1/	DR	Not applicable.		OK
2.5.16 How were the O&M costs assessed? Were the data available and valid at the time of decision?	/1/	DR	Not applicable.		OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
2.5.17 Describe the assessment of the other input parameters. Were the data available and valid at the time of decision?	/1/	DR	Not applicable.		OK
2.5.18 Was the financial calculation spreadsheet verified and found to be correct?	/1/	DR	Not applicable.		OK
2.5.19 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?	/1/	DR	Not applicable.		OK
2.5.20 Sensitivity analysis: Is the range of variations is reasonable in the project context?	/1/	DR	Not applicable.		OK
2.5.21 Have the key parameters been varied to reach the benchmark and the likelihood of this to happen been justified to be small?	/1/	DR	Not applicable.		OK
Barrier analysis					
2.5.22 Are the barriers identified complimentary to a potential investment analysis? Does the barrier have a clear impact on the financial returns so that it can be assessed in an investment analysis? Each barrier is discussed separately.	/1/	DR	No, the identified barriers are investment barriers, technical and capacity barriers and institutional barriers.		OK
2.5.23 How were the investment barriers assessed to be real? Are the investment barriers substantiated by a source independent of the project proponents?	/1/	DR	DNV GL deems that the investment barrier is real as the proposed project activity has only been implemented and established with development aid from USAID /6/, but no funding will be available for the operation of the project and the continuation of the project activities. DNV GL was able to confirm during the site visit that neither the associations NVA and NAWIRA have the enough resources in order to implement project activities /57/, nor DPW has the necessary sources in order to ensure full enforcement of laws in the national parks		OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			/60//63/. This was further confirmed during the interviews with the local communities who confirmed the lack of resources for implementation of project activities /66/.		
2.5.24 How the commercialisation of VCUs does alleviate investment barriers? 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?	/1/	DR	The main revenue stream will be the commercialisation of VCUs generated by the project.		OK
2.5.25 How were the technical and capacity barriers assessed to be real? Are the technological barriers substantiated by a source independent of the project participants?	/1/	DR	DNV GL deems that the technical and capacity barrier is real as evidenced by the baseline survey /7/ which indicate a lack of capacities in local communities to diversify their livelihoods and decouple the increase in production to the open of new land. The lack of technical capacities was also confirmed during the interviews with DPW /60//63/, who confirmed the lack of capacity in order to ensure enforcement in the protected areas. In total DPW has 120 rangers to protect the three protected areas with sum more than 400 000 ha (i.e. 320 000 ha Nyika, 97 800 ha Vwaza and 108 200 ha Nkhotakota). This issue was also pointed out by members of local communities /66/.		OK
2.5.26 How the commercialisation of VCUs does alleviate investment barriers? 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?	/1/	DR	The main revenue stream will be directly invested in providing the necessary training to NVA and NAWIRA and the necessary resources in order to empower them to make the necessary law enforcement which the DPW is struggling to make.		OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
2.5.27 How were Institutional Barriers assessed to be real? Are the other barriers substantiated by a source independent of the project participants?	/1/	DR	DNV GL deems that the institutional barrier is real as evidenced as confirmed by DPW and the Department of Forests /65//60//63/ who indicated that the lack of enforcement of forest or land-use-related legislation was a real issue inside protected areas. This is linked to the lack of financial resources and technical capacity as indicated above.		OK
2.5.28 How the commercialisation of VCUs does alleviate investment barriers? Is the project activity prevented by the investment barriers and at least one of the possible alternatives to the project	/1/	DR	The main revenue stream will be directly invested in providing the necessary training to NVA and NAWIRA and the necessary resources in order to empower them to make the necessary law enforcement which the DPW is struggling to make.		OK
Common practice analysis					
2.5.29 What is the geographical scope of the common practice analysis? Is this justified?	/1/	DR	The geographical scope is Malawi.		OK
2.5.30 What is the scope of technology and size (e.g. capacity of power plant) for the common practice analysis and how has this been justified?	/1/	DR	The VCS PD concludes that no similar activities are present in the geographical region. This was confirmed by DNV GL through interviews with the DPW and the REDD coordinator who confirmed this extent /60//63//65/.		OK
2.5.31 What is the data source(s) used for the common practice analysis?	/1/	DR	See above		OK
2.5.32 How many similar projects without carbon income exist in the region within the scope?	/1/	DR	See above		OK

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2.5.33 How were possible essential distinctions between the project activity and similar activities assessed?	/1/	DR	See above		OK
2.5.34 What is the conclusion of the common practice analysis?	/1/	DR	See above		OK
Conclusion					
2.5.35 What is the conclusion with regard to the additionality of the project activity?	/1/	DR	The project is additional and it is not a common practice.		OK
2.6 Methodology Deviations					
2.6.1 If any deviations from the methodology are these clearly described in the VCS-PD?	/1/	DR I	**CL6** **Requirement:** §3.5 of VCS Standard Version 3.4. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.6 of the VCS PD regarding the methodology deviation: a) Explanation on the reasons why satellite imagery of previous dates has not been used considering that in Glovis earlier images with similar quality (i.e. cloud cover, quality, level of correction) are available today; b) Justification on how this deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.	~~CL6~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
3 Quantification of GHG emissions reductions and removals					
3.1 Baseline Emissions and removals					
3.1.1 Have equations and parameters been clearly and properly identified?	/1/ /14/	DR	Select spatial and temporal boundaries **CAR5** **Requirement:** §8.1.1 of VM0006 Version 2.0 **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The proposed reference region includes: a) the forested and non-forested areas 5 km inside three protected areas; b) areas within other protected areas (national forest reserves) and c) other areas out of these. Two main different types of areas are clearly identified in the reference region: protected areas and public land (customary land) which are subject to different laws and regulations and have different land-tenure. DNV GL checked during the site visit whether these lands were similar from the point of view of deforestation drivers despite these differences (i.e. confirm that the laws are systematically not enforced), and confirmed that certain level of law enforcement exist in the protected areas, meaning that de-facto these areas are theoretically not comparable to other public lands and that a historical deforestation rate in other public lands are expected to be	~~CAR5~~ ~~CAR6~~ ~~CAR7~~ ~~CAR8~~ ~~CAR9~~ ~~CL7~~ ~~CL8~~ ~~CL9~~ ~~CL10~~ ~~CL11~~	OK

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Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			higher than inside the protected areas (causing bias in the estimates of deforestation). The project proponent is requested to: a) exclude from the reference region those areas that are not similar to the project area (i.e. non-protected areas); OR b) justify that the other public lands are similar to the project area from the point of view of deforestation (i.e. historical deforestation rates within protected land and rates in other public lands do not differ). **CAR6** **Requirement:** §8.1.1.6 of VM0006 Version 2.0 **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) DNV GL processed the final LULC maps provided for each epoch in the historical period and analyzed the transition information per pixel. The results indicate that the deforestation/reforestation rates of the two periods include areas that are temporarily unstocked (e.g. pixels that transition from forest to non-forest and transition again to forest) and the reforestation rates include areas that cannot be classified really as reforestation due to the short time period (e.g. in less than 2 years land transits from non-forest to forest and it is assumed that forest reach the equilibrium in carbon stocks (carbon stocks equivalent to		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			those measured within protected areas) which for these dry ecosystems it seems to be inaccurate). The project proponent is requested to: a) clearly define temporal rules for transitions; b) if necessary correct the final output. b) DNV GL checked the final LULC maps and confirmed that some group of pixels that cover less than 0.5 ha, i.e. forest definition, are present in these maps. These areas should be extracted from the LULC maps. Analysis of agents of deforestation **CAR7** **Requirement:** §8.1.2 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet; tab "0.Drivers and parameters": **Non-Conformity**: a) Parameter "P (Proportion of biomass burnt)" it is not defined as a proportion. b) The emissions from collection of wood for charcoal are not multiplied by the efficiency in charcoal production. c) BEFs have not been applied to wood products obtained from the forest. **CL7** **Requirement:** §8.1.2 of VM0006 Version 2.0		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			Evidence: ER calculation spreadsheet; tab "0.Drivers and parameters": **Clarification**: a) The assumed value of parameter "Number of households" is 45000 while the HH survey indicates 66000 HH. b) In order to estimate "DT_Baseline [MG DM Yr-1]" it has been assumed that: a) 483.85 kg of tobacco are produced per household; b) and that 2 kg of wood for poles are used for the tobacco barns per kg of tobacco produced. However in parameter "Annual Fuelwood Consumption (kg DM HH-1 yr-1)" it has been assumed that: a) 483.85 kg/hh/**acre** are produced; b) and that 2 kg of wood are used to cure 1 kg of tobacco. There seems to be an inconsistency in units. c) The efficiency in charcoal production applied is 0.8. However, according to DNV GL's experience the charcoal production efficiency in rural areas of sub-Saharan Africa (traditional kilns) is 0.16-0.2. Determination of emission factors **CAR8** **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:** Kulera Biomass Data Spreadsheet		

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			Non-Conformity: a) Tab "1.a. Summary of Soil". The carbon content in organic matter is 0.58 not 0.5 as this is the constant used by the laboratory of Bunda College. b) Tab "1.a. Summary of Soil". The SOC value for non-forest is sourced from the 2003 IPCC LULUCF GPG. However, DNV GL was not able to find this value in this document. Moreover the value seems to be a general default value not applicable to the project area's circumstances and to related to specific soils in the project area. c) Tab "0.z.Emission Factor & Discount". The emission factor of BAR to MIO for AGD and SOM at t>10/20 is 2 and not zero. d) Tab "1.a. Strata Summary". No uncertainty has been defined for the SOC pool in the non-forest class. e) Tab "2.c. Sapling Datasheet" and "2.d. Livetree data-saplings". The average sapling aboveground biomass has been estimated as average of all sample plots, being this estimated as the number of saplings per plot multiplied by the average biomass per tree which has been estimated using all trees in across all subplots. The standard deviation has been estimated from these estimates per plot. Although the approach to estimate the average could be correct, the		

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			relative margin error is incorrect as it is not considering propagating the uncertainty in the estimate of the average biomass per tree which has been also estimated through sampling. f) Tab "4. Standing deadwood datasheet". The allometric equation employed it is the Chave equation for moist forests not for dry forests. g) Tab "5. Downed deadwood datasheet". The equation for the estimation of the biomass/ha seems to be incorrect as it should be BD*pi()*pi()/(8L)*d^2*10000 being L=2*25 m, BD expressed in t/m3 and d expressed in m. **CL8** **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:** **Clarification**: a) Tab "10. Soil Samples". Clarification is sought on whether values provided refer to % of organic carbon or % of organic matter. b) The project proponent is requested to clarify why only SOC was sampled in plot 224 and not other carbon pools. c) Tab "2.a. Live Tree Datasheet". Clarification is sought on how the Chave allometric equation has been validated for the project conditions following the procedures of Section 10.4 of the		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			methodology. d) Tab "2.c. Sapling Datasheet". Clarification is sought on the suitability of the Chave allometric model applied to saplings (i.e. range of validity of the equation and applicability of equation to project area's circumstances). e) Tab "2.a. Live Tree Datasheet". Clarification is sought on how it has been determined the basic density applied in the Chave allometric model (i.e. 0.6 t/m3). f) Tab "7. Abovground non-tree datasheet". Clarification is sought on how the weight of the empty gunnysack has been accounted for as it seems that "Weight of full gunnysack in field using the spring scale (g)" includes the weight of the gunnysack (c.f. please refer to Nyka 220 field data sheet). **CL9** **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:** Site visit **Clarification**: a) During the site visit it was confirmed that in the case of soils with presence of stones (fragments >2 mm), the volume of these in the soil profile were not estimated in order to substract it from the accountable soil organic carbon. Clarification is sought on what is the impact of not considering this in the calculations		

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			considering the whole project area and whether this affects the conservativness of the estimates. b) Clarification is also sought on hos these fragments have been considered in the lab analysis. Land transitions **CAR9** **Requirement:** §8.1.4 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet; tab "2c. RR - DF, RF, DG, RG": **Non-Conformity**: a) Parameter "Time in Transition Period" has been estimated considering the month and year, not the date.		
			CL10 **Requirement:** §8.1.4 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet, tab "2c. RR - DF, RF, DG, RG" **Clarification**: a) It is not clear why pixels that show classes that are similar as the class cloud cover from the point of view of data availability (i.e. presence of BRN, SHD, BKR) haven't been treated as cloud pixels. b) It is not clear why in "Section 4. Transition Rates (ha/yr), cloud corrected, annualized" the		

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			annual rates are increased by the % of cloud cover. **CL11** **Requirement:** §8.1.4 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet, tab "3b. LUC Model Output" **Clarification**: a) Clarification is sought on why deforestation in the project area in the baseline scenario in year 1 is higher than the average deforestation rate (i.e. total deforestation in year 1 for all three sites is 59061 pixels, while the average deforestation is 58897 pixels). It is expect that the first year deforestation years are equal as the exhaustion factor is has not had any effect yet. b) Clarification is sought on why there are very step changes in the deforestation and reforestation rates (e.g. in Vwaza, deforestation in the leakage area decreases from 8702 pixels to 529 pixels in one year; intuitively this seems not to be in accordance to reality). c) A blended rate sourced from the reference region is applied to the three sites together. The data shows that the past deforestation rates in the three areas differ significantly, especially between Nkhotakota and the two other areas in the north. This may be due to the specific		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			circumstances of each of the protected areas as confirmed during the site visit (e.g. the three areas differ from the point of view of main drivers of deforestation and also differ in other natural conditions). Hence, the application of a blended rate across the three sites without considering the specific circumstances of each site might cause bias (e.g. Higher deforestation rates seen in the northern sites might cause an overestimation of baseline deforestation if these are applied to Nkhotakota). Clarification is sought on how these differences are accounted for. d) In order to estimate areas reforested in the baseline scenario, the reforestation rate is applied to the total non-forest land. This causes a continuous increase in the annual reforested area per year, which contrasts with the continuous decrease in the annual deforested area. This would cause in the mid-term a net-increase in forest area which seems not to be accurate in view of the past trends observed in Malawi or in the same region (SADC countries). Furthermore, some new deforestation might happen in already reforested land could mean an overestimation in the reforestation rates. Clarification is sought on how this issue is accounted for in the model.		

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
3.1.2 Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	Yes, the calculations are presented in a transparent manner.		OK
3.1.3 Have conservative assumptions been used when calculating the baseline emissions?	/1/	DR	Yes, conservative assumptions have been assumed everywhere it is possible.		OK
3.1.4 Are uncertainties in the baseline emission estimates properly addressed?	/1/	DR	Yes, uncertainties were taken into account considering the provisions of the methodology.		OK
3.2 Project Emissions and removals					
3.2.1 Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	The project emissions have been estimated following the proposed methodology. **CL12** **Requirement:** §8.2.5 of VM0006 Version 2.0 **Evidence:** Document not provided **Clarification**: a) The project proponent is requested to provide the calculation spreadsheet for the cookstove project activity.	~~CL12~~	OK
3.2.2 Have conservative assumptions been used when calculating the project emissions?	/1/	DR I	Not applicable since no ex-ante estimations are available for this.		OK
3.2.3 Are uncertainties in the project emission estimates properly addressed?	/1/	DR I	Not applicable since no ex-ante estimations are available for this.		OK
3.3 Leakage Emissions					
3.3.1 Are the leakage calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR I	**CL13Requirement:** §8.3.2.2 of VM0006 Version 2.0 **Evidence:** VCS PD Version 3.0 **Non-Conformity**:	~~CL13~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			a) In order to estimate the isocrones raster the project proponent has created a raster assigning to each pixel a weight based on the maximum speed. In order to define the maximum isocrone of transport which defines the leakage boundary, the project proponent has identified 9 points in primary roads which cross the 10 km buffer (euclidean buffer) and has estimated the average time to the project boundary. However, the methodology requires to define this maximum isocrone based on the information on the mobility (time) of relevant agents and modes of transport provided by the PRA and to use this information in order to define the isocrone from the project boundary which defines leakage boundary.		
3.3.2 Have conservative assumptions been used when calculating the leakage emissions?	/1/	DR	Not applicable since no ex-ante estimations are available for this.		OK
3.3.3 Are uncertainties in the leakage emission estimates properly addressed?	/1/	DR	Not applicable since no ex-ante estimations are available for this.		OK
3.4 Summary of GHG Emission Reductions and Removals					
3.4.1 Algorithms and/or formulae used to determine emission reductions: - All assumptions and data used by the project participants are listed in the VCS PD. The data are properly referenced	/1/	DR	Please refer to CARs and CLs above.	~~CAR5~~ ~~CAR6~~ ~~CAR7~~ ~~CAR8~~	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
- All documentation is correctly quoted and interpreted. - All values used can be deemed reasonable in the context of the project activity - The methodology has been correctly applied to calculate the emission reductions and this can be replicated by the data provided in the VCS PD.				~~CAR9~~ ~~CL13~~CL 7 ~~CL8~~ ~~CL9~~ ~~CL10~~ ~~CL11~~ ~~CL12~~	
3.4.2 If the project has harvesting activities, is the number of GHG credits below the long-term average carbon stock maintained by the project? The maximum number of GHG credits available to projects shall not exceed the long-term average of the carbon stock stored in the selected carbon pools, adjusted for any project emissions of CO_2, N_2O and CH_4 and leakage. (AFOLU requirements: VCS Version 3.4; paragraph 4.5.3)	/1/	DR	Not applicable since no harvesting occurs as part of the project activity.		OK
4 Monitoring					
4.1 Data and Parameters Available at Validation					
4.1.1 Is the list of parameters complete and the values have been verified.	/1/ /14/	DR I	**CAR11CAR13** **Requirement:** VCS project description template **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) Tables with parameters provided in section 5.1 and 5.2 are not in line with the VCS PD template (you may ask to the VCSA Secretariat for a deviation). b) Parameters which are not applicable to the project are provided in the VCS PD while they	~~CAR11~~ **~~CAR13~~**	OK

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			should be deleted.		
4.2 Data and parameters monitored					
4.2.1 For all parameters, are the monitoring, including estimation, modelling, measurement or calculation approaches are properly selected? What are they? Do they comply with the requirements of the methodology, including measurement accuracy?	/1/ /14/	DR	Yes, the appendix provides enough information regarding the monitoring of all parameters.		OK
4.2.2 What QA/QC procedures will be applied to ensure the measurement quality, including installation, calibration and maintenance?	/1/ /14/	DR			OK
4.3 Description of the monitoring plan					
4.3.1 How has it been assessed that the monitoring arrangements described in the monitoring plan are feasible within the project design?	/1/	DR I	Yes, all monitoring agreements are feasible within the project design. It is not costly and the annual frequency of most of the aspects does not suppose an issue to the project proponent.		OK
4.3.2 Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?	/1/	DR I	Yes, there are specific procedures defined indicating clearly the frequency, responsibility and the scope of each action. Furthermore, there are various SOPs integrated in the management system of the project proponent which rule the monitoring of the project.		OK
4.3.3 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?	/1/	DR I	The project proponent has defined the QA/QC procedures to be applied at: - SOPs for field measurements: Persons involved in the measurements shall be trained and shall adhere to the SOPs. - Data entry and analysis. Data will be reviewed.		OK

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			- Data maintenance and archiving. All data will be archived in durable media and stored in multiple locations.		
4.3.4 Will all documents and records are kept in a secure and retrievable manner for at least two years after the end of the crediting period?	/1/	DR I	**CL13Requirement** §3.17.1 of the VCS Standard Version 3.4 Evidence and clarification Clarification is sought on what are the provisions in order to ensure that The project documents and records are kept in a secure and retrievable manner for at least 2 years after the end of the crediting period.	~~CL13~~	OK
4.3.5 Is a description of the central GHG information system and controls described in the monitoring plan? (Grouped)	/1/	DR	Not applicable.		OK
4.3.6 What types of data and information to be reported in order to estimate the emission reductions and provide other relevant information required by VCS program? Is the identified data type and information complete, including units of measurement?	/1/	DR	Yes, all the required information is reported.		OK
4.3.7 Are sources of the data and information to be reported identified properly? What are they? Do they comply with the requirements of the methodology?	/1/	DR	Yes, all the source of data and information are clearly identified. This is in line with the methodology.		OK
4.3.8 Are the monitoring, including estimation, modelling, measurement or calculation approaches are properly selected?	/1/	DR	Yes, monitoring procedures are adequate considering the project circumstances.		OK
4.3.9 Are monitoring times and periods, considering the needs of intended users properly defined?	/1/	DR	Yes, all the monitoring times and periods are adequate and in line with the applicable methodology.		OK
4.3.10 Are monitoring roles and responsibilities clearly and properly defined?	/1/	DR	Yes, all responsibilities are clearly defined.		OK

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4.3.11 Have processes and procedures been defined to ensure data quality?	/1/	DR	Yes, they will ensure data quality.		OK
5 Environmental Impact					
5.1.1 Are there any requirements for an Environmental Impact Assessment (EIA) by applicable legislation or regulation? And if yes, is an EIA approved? Does the approval contain any conditions that need monitoring?	/1/	DR I	The proposed project activity does not require any EIA according to the applicable legislation as it is a "do-nothing" option. This was effectively confirmed during the interview held with the national REDD coordinator /65/ who confirmed this.		OK
5.1.2 Is a summary of environmental impact assessment described in the VCS PD when such an assessment is required by applicable legislation or regulation	/1/	DR I	A very short summary is provided in the VCS PD, however, this is not required as per the applicable legislation or regulation.		OK
5.1.3 Does the project comply with applicable environmental legislation?	/1/	DR I	Yes, it complies with all environmental legislation as confirmed by the REDD coordinator.		OK
5.1.4 Have identified environmental impacts been addressed in the project design?	/1/	DR I	No negative impacts have been identified.		OK
6 Stakeholders Comments					
6.1.1 Have relevant stakeholders been consulted?	/1/	DR I	Yes, relevant stakeholders have been consulted.		OK
6.1.2 Is a summary of the stakeholder comments received provided?	/1/	DR I	**CL14** **Requirement:** VCS Project description template **Evidence and clarification** a) The project proponent is requested to include in the VCS PD a summary of stakeholder	~~CL14~~	OK

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

Checklist Question	Ref	MoV	Assessment by DNV GL	Draft Concl.	Final Concl.
			comments received during the LSC meetings held, including any specific request from stakeholders.		
6.1.3 Has due account been taken of any stakeholder comments received?	/1/	DR I	**CL11** **Evidence and clarification** b) The project proponent is requested to include in the VCS PD a short description on how it has taken into account of the comments received from local stakeholders.	~~CL1~~4	OK
6.1.4 Have mechanisms been identified in the VCS PD for on-going communication with stakeholders?	/1/	DR I	Yes, regular meetings are foreseen.		OK

Table 2 Non-Permanence risk assessment checklist

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
1 Internal Risks				
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	The project is an REDD project implemented in natural forest. Hence this risk is not applicable to the project activity. OK.		0
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).	2	The project is an REDD project implemented in natural forest. Enforcement is required to protect the carbon stocks. OK.		2
c) Management team does not include individuals with significant experience in all skills necessary to successfully undertake all project activities (ie, 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 project proponents have significant experience and skills to successfully undertake the project activity.. Hence, it is demonstrated that experience in management and these type of project activities. OK.		0
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 polygons in the project area (Score 2).	0	As DNV GL was able to confirm during the site visit that DPW and the associations have presence in the country and are close to the project area.. OK.		0
e) **Mitigation:** Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and	-2	The management team includes staff from Carbon Conservation with significant experience in AFOLU project design and implementation as evidenced by the numerous		-2

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

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
reporting (eg, 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).		projects registered by TGC. OK.		
f) **Mitigation:** Adaptive management plan in place (Score -2).	0	Not argued by the project proponent.		0
Total Project Management (PM)	0	The total risk is 0-		0
1.2 Financial viability				
a) Project cash flow breakeven point is greater than 10 years from the current risk assessment b) Project cash flow breakeven point is between 7 and up to 10 years from the current risk assessment c) Project cash flow breakeven point between 4 and up to 7 years from the current risk assessment d) Project cash flow breakeven point is less than 4 years from the current risk assessment	d) 0	As justified in the validated IRR analysis, the breakeven point would be within four years of the project implementation /5/.		0
e) Project has secured less than 15% of funding needed to cover the total cash out before the project reaches breakeven f) Project has secured 15% to less than 40% of funding needed to cover the total cash out required before the project reaches breakeven g) Project has secured 40% to less than 80% of funding 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	e) 3	As justified in the validated IRR analysis, less than 15% of funding needed to cover the cash out has been secured /5/.		3

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

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
breakeven				
i) **Mitigation:** Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven	0	Not argued by the project proponent.		0
Total Financial Viability (FV)	3	The total risk is 3		3
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 b) NPV from the most profitable alternative land use activity is expected to be between 50% and up to100% more than from project activities 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 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 e) NPV from project activities is expected to be between 20% and up to 50% more profitable than 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	e) 0	Baseline activities are subsistence-driven and net positive community impacts are demonstrated.		0

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
alternative land use activity				
g) **Mitigation:** Project proponent is a non-profit organization	0	Not argued by the project proponent.		0
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	0	Not argued by the project proponent.		0
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	-8	The proposed project activity is located within national parks so there is a legally bidning commitment to continue management practices. Furthermore Associations are also commited legally to respect the Wildlide act. **CAR12** **Requirement:** ¶2.2.3 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) The project proponent has argued that the Project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over at least 100 years as the areas are located in a protected area so these are protected by the existing laws. However, the project proponent has to consider that the proposed project consists in further protection of these areas in comparison with historical levels of protection against external agents of deforestation, so this additional conservation shall be analysed here. Hence the project proponent is requested to further elaborate how the local	~~CAR12~~	-8

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
		communities which are responsible of past deforestation are commited to continue management practices for 100 years.		
Total Opportunity Cost (OC)	0		~~CAR12~~	OK
1.4 Project Longevity				
a) Without legal agreement or requirement to continue the management practice (Score is 24 - (project longevity/5) b) With legal agreement or requirement to continue the management practice (Score is 30 - (project longevity/2)	0	**CAR13** **Requirement:** ¶2.2.4 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) According to ¶2.2.4 2) the right of use has to be secured for the whole project longevity. However, the REDD+agreements have a validity of 30 years renewable 20 years, and a 60 year longevity is been argued. b) According to ¶2.2.4 3) the project longevity has to be covered by financial plans or management plans, however, in the REDD+agreements activities are only planned for 30 years.	~~CAR13~~	0
Total Project Longevity (PL)	0		~~CAR13~~	0
1.5 Total Internal Risk				
Total Internal Risks (PM+FV+OC+PL)	3		~~CAR12~~ ~~CAR13~~	3

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)	a) 0	The project is located inside three protected areas. OK.		0
b) Ownership and resource access/use rights are held by different entity(s) (eg, land is government owned and the project proponent holds a lease or concession)				
c) In more than 5% of the project area, there exist disputes over land tenure or ownership	0	CL15 **Requirement:** ¶2.3.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) During the site visit (interview in Vwaza wildlife reserve) DNV GL confirmed that in an area of Vwaza encroachment inside the protected area will probably cause a redefinition of the protected area, yet seems to be not formalised. This seems to be a dispute between the DPW and local communities. The project proponent is requested to clarify whether this represents more than 5% and to discuss whether this is a dispute.	~~CL15~~	0
d) There exist disputes over access/use rights (or overlapping rights)	0	DNV GL confirmed during the meeting held with the REDD national coordinator /65/ that the land tenure ownership is clear and that no disputes exist in the project area, including overlapping rights.		0

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
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	Not applicable to this project.		0
f) Mitigation: Project area is protected by legally binding commitment (eg, a conservation easement or protected area) to continue management practices that protect carbon stocks over the length of the project crediting period	-2	The project proponent has a legally binding commitment with the DPW and Associations to continue management practices that protect the credited carbon stocks over 30 years of crediting period.		-2
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	0	Not argued by the project proponent.		0
Total Land Tenure (LT)	0	The total land tenure risk is zero.		0
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	No households live within the project area.		0
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	Households living within 20 km of the project boundary have been consulted.		0
c) **Mitigation:** The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the	-5	The project is seeking the CCBS validation.		-5

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
project area				
Total Community Engagement (CE)	-5			-5
2.3 Political Risk				
a) Governance score of less than -0.79 (Score 6) b) Governance score of -0.79 to less than -0.32 (Score 4) c) Governance score of -0.32 to less than 0.19 (Score 2) d) Governance score of 0.19 to less than 0.82 (Score 1) e) Governance score of 0.82 or higher (Score 0)	c) 2	CAR13 **Requirement:** ¶2.3.3 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) Governance indicators for 2012 are available.	~~CAR13~~	2
f) Mitigation: Country is implementing REDD+ Readiness or other activities, as set out in this Section 2.3.3.	-2	CAR13 **Requirement:** ¶2.3.3 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: b) Malawi has not entered in any bilateral or multilateral agreement for developing its REDD initiative.	~~CAR13~~	-2
Total Political Risk (PC)	0	The total political risk is 4.		0
2.4 Total External Risk				
Total External Risk (LT+CE+PC)	0		~~CAR14~~	0
3 Natural Risks				
3.1 Fire (F)				
3.1.1 Significance and Likelihood (LS)	5	The project proponent has selected a Likelihood of once		5

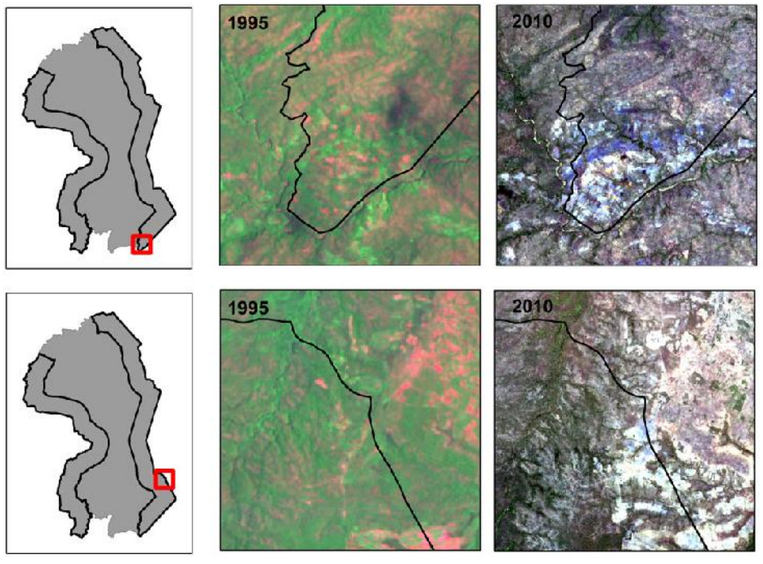
Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
		every 10 years and minor significance. DNV GL deems that this is reasonable considering the documentation provided and the information gathered during the site visit. OK.		
3.1.2 Mitigation (M)	0.5	This has been set to 0.5. CAR13 **Requirement:** ¶2.4.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) As stated in various parts of the VCS PD, no fire management plans are in place in the project areas. Furthermore, as confirmed during the interviews held with members of DPNW, fires are an issue and DPW does not have enough resources in order to combat these fires or prevent them.	~~CAR13~~	0
3.1.3 Score (LSxM)	0	OK. The total fire risk is 0	~~CAR13~~	5
3.2 Pest and Disease Outbreaks (PD)				
3.2.1 Significance and Likelihood (LS)	0	The project proponent has selected a Likelihood of Once every 10 years and insignificant. CAR13 **Requirement:** ¶2.4.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**:	~~CAR13~~	0

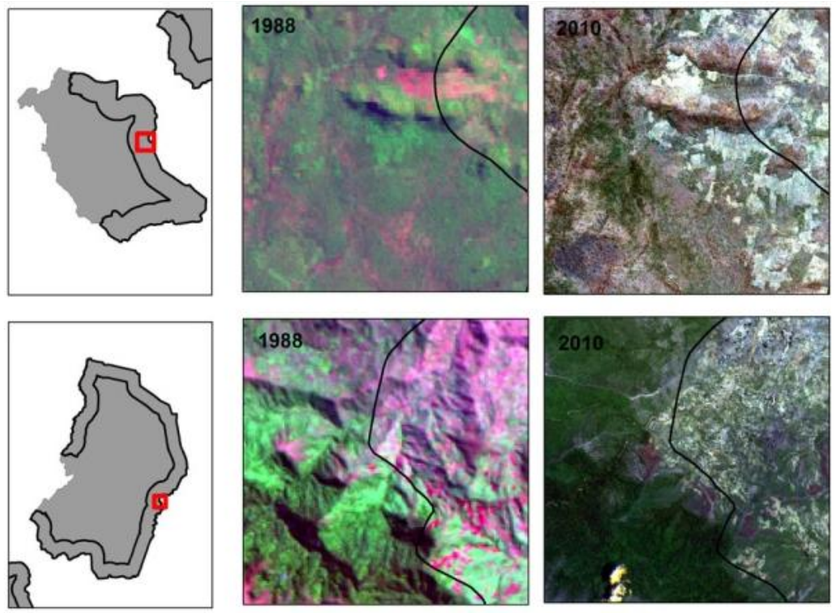
Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
		b) The project proponent has selected for pest and disease outbreaks a Likelihood of Once every 10 years and insignificant. This is equivalent to a risk of 1; however, the project proponent has written 2.		
3.2.2 Mitigation (M)	1	CAR13 **Requirement:** ¶2.4.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: c) The project proponent has selected a mitigiation of 0.25 for pest and disease outbreaks. However, in the same document it is written that this is not relevant and that no mitigation is being applied.	~~CAR13~~	0
3.2.3 Score (LSxM)	0		~~CAR13~~	0
3.3 Extreme Weather (W)				
3.3.1 Likelihood (LS)	0	CAR13 **Requirement:** ¶2.4.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: d) The project proponent has not discussed extreme droughts as part of the extreme wheather risk category.	~~CAR13~~	0
3.3.2 Mitigation (M)	1	This is not relevant as the LS is zero.		0

Checklist Question	Value report	Assessment by DNV	Draft Conc.	Final Concl.
		OK.		
3.3.3 Score (LSxM)	0		~~CAR13~~	0
3.4 Geological Risk (G)				
3.4.1 Likelihood (LS)	0	The project proponent has selected no loss significancy. DNV GL deems that this is reasonable as no significant geological risks have been identified.		0
3.4.2 Mitigation (M)	1	This is not relevant as the LS is zero. OK.		0
3.4.3 Score (LSxM)	0	The total geological risk is 0.		0
3.5 Other Natural Risk (ON)				
3.5.1 Likelihood (LS)	0	There would not be other risks applicable to the project area.		0
3.5.2 Mitigation (M)	0	Not applicable.		0
3.5.3 Score (LSxM)	0	The total natural risk is 0.		0
3.6 Total Natural Risks				
Total Natural Risks (F + PD + W + G + ON)	0		~~CAR13~~	5
4 Total Risk				
Overall Risk Rating	17			10

Table 3 Resolution of corrective action requests and clarification requests

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
CAR1 **Requirement:** ¶3.4.9 VCS Standard Version 3.4 **Evidence:** VCS PD Version 3.0 **Non-Conformity:** No eligibility criteria for the inclusion of new instances has been provided. The project proponent shall note that it should not be just a copy-paste of the requirement but it should use the requirement as basis for developing ad-hoc EC.	1.13.1	Text has been added to Section 1.9.4 of the VCS PD v5-0.	In line with paragraph 3.4.9 of the AFOLU requirements: VCS Version 3.4 "*grouped projects shall include one or more sets of eligibility criteria for the inclusion of new project activity instances*". As such the project proponent has defined a series of eligibility criteria for the inclusion of new project activity instances. The eligibility criteria defined for the inclusion of instances have been validated by DNV GL: **CAR1 is closed.**
CAR2 **Requirement:** Applicability criteria of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The project area has been defined in the PD as the areas that are within 5 km of 3 protected areas, including forest and non-forest areas at the time of the start date. However, according to applicability criteria 1 the project area shall constitute only those areas that meet the definition of forest: a) at the time of the start date AND b) for a minimum of 10 years before the project start date, not including any non-forest areas.	2.2.1	The Project Area has been updated to include only areas which are forested at t=-10 and t=0. Please refer to the final GER workbooks. In addition, the VCS PD final version will be updated to reflect the final Project size that meets this criteria.	The Project Areas of the Kulera Biodiversity Project are found within a 5 km wide area inside of the Nyika National Park, Vwaza Marsh Wildlife Reserve, and Nkhotakota Wildlife Reserve. The 5 km inside buffer distance was selected to address observed deforestation and degradation occurring on the edges of Malawi's Protected Areas and in line with the 10 km distance accessed by drivers indicated by the PRA /7/. DNV GL deems that this is reasonable. Areas adjacent to the Zambia border were removed from both Nyika and Vwaza Project Areas along with areas adjacent to Forest Reserves (Mndilandsadzu FR and Dwambadzi FR) to the north and south of the Nkhotakota Project Areas as these areas are not directly accessible by deforestation agents located within Malawi. DNV GL deems that this is reasonable. In order to complete the project areas, watershed boundaries were used in order to complete the project limits within the protected areas. This has been done in order to ensure that project limits, which are coincident with the reference region limits, are not defined in a subjective manner. DNV GL confirms that this is required by VM0006 (Version 2.0) /14/. As required by VM0006 (Version 2.0) /14/ and the AFOLU Requirements /17/, all areas which did not qualify as forest at both the start of the historic period and at the start of the project were removed from the projected area. **CAR2 is closed.**
CAR3 **Requirement:** §5.2 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The PD justifies the inclusion of the SOC pool by stating that "the conversion of forest to	2.3.2	a) Under the baseline scenario the final conversion of land that is deforested is to be used for annual cropping systems. While the initial removal of wood might be caused by another driver such as fire or collection for tobacco curing or barns which is an intermediate step, the land-use that follows for the final conversion is to annual cropping. This is due to the increase in population and needs to produce food. The rural population in Malawi has been increasing, the amount of land available to them has been declining, and thus there is increased demand for land of high agricultural potential	The SOC carbon pool is Optional according to methodology VM0006 (Version 2.0) if baseline scenario is annual cropland. DNV GL deems that it is appropriate to account for this carbon pool as the baseline land use will be an annual cropland. This was confirmed during the site visit through visual inspection and through the results of the PRA /7/ or other third party publications

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
small-scale agriculture, as well as fires which lead to conversion to agriculture, are major drivers of deforestation". However, according to the information on the importance of drivers and agents of deforestation /3/ and according to the information gathered during the site visit (i.e. stakeholders confirmed that the the main drivers are wood harvesting for tobacco barns, woodfuel collection for firewood or charcoal, forest fires) conversion to small-scale agriculture is not a major driver of deforestation. According to the applicable methodology, the SOC pool may be only included on the condition that the land cover under the baseline scenario is comprised of annual cropping systems. b) The PD has excluded the Wood Products carbon pool without providing a justification. Considering that some of the wood products extracted from forests may be of the mid-term wood products pool (wood for tobacco barns) the justification of its exclusion or its inclusion is required..		such of those recently cleared of forests. (c.f. Inter-Agency Working Group on Protected Areas, August 1997, PROTECTED AREAS: THEIR ROLE AND FUTURE IN MALAWI'S LAND BUDGET, http://ag.arizona.edu/oals/malawi/Papers/COMMEMWG2.pdf) And increasingly there is competition between both the smallholder and estate sectors and the protected areas, particularly where the latter adjoin areas of high rural population density such as around many portions of the Project Area. This demand for agricultural land is not likely to change in the future scenario and thus the baseline conditions of deforested areas will be converted to annual cropping system. It can be demonstrated that historically the protected areas have been in the pressure of deforestation where the final land-use is the annual cropping by following pictures.  Figure 1.Two examples in Nyhotakota Project Area of conversion to agriculture (historical image on left, current image on right, and the black line represents the protected area boundary (Project Area boundary)	/48/. DNV GL confirmed that in some cases the resulting baseline is non-forest land without cropping (i.e. unmanaged grassland or shrubland), but that in these cases the increased erosion levels and degradation, without inputs, will lead to a reduction of carbon stocks in the SOC pool, so it would still be appropriate to account for emissions from this carbon pool. This is consistent with the 2006 IPCC GL /31/ which indicates lower soil carbon stocks in degraded grasslands or croplands without inputs in comparison with soil organic carbon stocks in forests. This is consistent with the results from Walker & Desanker (2004) which indicates that conversion of Miombio forest to non-forest land-uses decrease the inputs from existing trees and has a declining effect in carbon stocks /43/. Hence, DNV GL deems that it is reasonable to account for this carbon pool. **CAR3 is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
		 Figure 2. Examples of Vwaza Project Area (top) and Nyika (bottom) of conversion to agriculture (historical image on left, current image on right, and the black line represents the protected area boundary (Project Area boundary) b) The deforestation drivers for the Project have shown that the wood extracted from the forest is mostly used for short term uses. The only use that could be considered longer term would be poles for tobacco barns. However, these are small poles that are used for very poorly constructed barns that require replacement 2 years. This pictures below provide images for the type of barns constructed with poles from the Project Area. Under the methodology, short term wood products are considered equivalent to wood that would emit carbon immediately. The PD carbon pools table has been updated in PD and drivers section of the section of PD will be updated 	

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
			
CAR4 **Requirement:** §7 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The VCS PD does not provide a discussion of project's Additionality following the provisions of the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0) as required by the applicable methdology.	2.5	The PD was updated to reflect the use of the most current version of the VCS Additionality Tool ("VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities, Version 3") Text has been added to Section 2.5 of the VCS PD v4-0. This will be updated added to the PD in version 5.	The additionality of the project is demonstrated following the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0) /15/ Alternative land-use scenarios have been identified as per the methodology and the selection of the plausible baseline scenario has been demonstrated, as detailed in section 3.2.4 Baseline identification of the validation report, in line with the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0) /15/. The identified alternative baseline scenarios are: 1. Scenario 1 - Continuation of the pre-project land uses 2. Scenario 2 - Increased protection in the Protected Areas through expanded enforcement and/or activities implemented to reduce Project Zone community wood needs. DNV GL considers the list of realistic and credible alternatives to be complete and accurate. **CAR4 is closed.**
CAR5 **Requirement:** §8.1.1 of VM0006 Version 2.0 **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) The proposed reference region includes: a) the forested and non-forested areas 5 km inside three protected areas; b) areas within other protected areas (national forest reserves) and c) other areas out of these. Two main different types of areas are clearly identified in the reference region: protected areas and public land (customary land) which are subject to different laws and regulations and have different land-tenure. DNV GL checked during the site visit whether these lands were similar	3.1	Please refer to the revised PD.	The project area is entirely located within protected areas where laws or protection are not fully enforced. The partial enforcement of laws was confirmed by DNV GL through various interviews with staff of the DPW and the Forestry Department /60//63//65/ and through the fact that the historical analysis of deforestation shows deforestation occurring within this areas. However, as confirmed during the site visit, some enforcement is in place which is causing a reduced deforestation rate in comparison with historical rates observed out of the protected areas. Furthermore, the leakage area which is part of the Reference Region is located out of the protected areas, where no enforcement is in place. In view of this the project proponent has proposed to methodology deviations: • Deviation 1: The Reference Region had to be composed only

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
from the point of view of deforestation drivers despite these differences (i.e. confirm that the laws are systematically not enforced), and confirmed that certain level of law enforcement exist in the protected areas, meaning that de-facto these areas are theoretically not comparable to other public lands and that a historical deforestation rate in other public lands are expected to be higher than inside the protected areas (causing bias in the estimates of deforestation). The project proponent is requested to: a) exclude from the reference region those areas that are not similar to the project area (i.e. non-protected areas); OR b) justify that the other public lands are similar to the project area from the point of view of deforestation (i.e. historical deforestation rates within protected land and rates in other public lands do not differ).			of areas which are comparable to the project area, i.e. areas with a category of protection where protection is not effective and where agents of deforestation have access (i.e. 5 km within forestry reserves, wildlife reserves, national parks, etc.). This would allow the definition of a historical rate based on deforestation rates observed within protected areas. As a result of this criterion, the 250 000 ha requirement could not be complied with as the number of such areas within the footpring of satellite imagery was reduced. • Deviation 2: Furthermore, since the applicable methodology requires to include the leakage area within the Reference Region which will be used to determine the historical deforestation rate and the leakage area is almost out of the protected areas, in order to avoid any bias, similar areas had to be added in the Reference region. Hence, a part of the 5 km areas within the protected areas out of the project areas, 10 km out of these areas (i.e. similar as leakage belts) were included in the reference region. Since these “leakage areas” are located in areas without any protection figure, the historical rates in these areas could be higher in comparison with areas located within protected areas, which could lead to think that this would bias the results. , this issue has been solved by including in the deforestation model two spatial factors related to the proximity to a protected area or the location within a protected area, and two run the deforestation model in the continuum of project area and leakage area. This will accurately reflect the lower deforestation rate within or close to the protected area due to the partial enforcement, and in will show an increase in deforestation rates within the protected area as the resources within the leakage are reduced. DNV GL confirmed that this approach is accepted by other methodologies which require a spatial explicit baseline such as such as VM00015 or VM0007. The reported deviation is acceptable as per §3.5.1 as it is a deviation from the criteria and procedures relating to monitoring set out in the methodology and they result in an increased accuracy of such quantification. **CAR5 is closed.**
CAR6 a) DNV GL processed the final LULC maps provided for each epoch in the historical period and analyzed the transition information per pixel. The results indicate that the deforestation/reforestation rates of the two	3.1	The transition problem has been fixed by adjusting the sequencing Temporal Filter. There is no change in the PD.	Answer accepted. DNV GL checked the maps and confirmed that they have been corrected. **CAR6 is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
periods include areas that are temporarily unstocked (e.g. pixels that transition from forest to non-forest and transition again to forest) and the reforestation rates include areas that cannot be classified really as reforestation due to the short time period (e.g. in less than 2 years land transits from non-forest to forest and it is assumed that forest reach the equilibrium in carbon stocks (carbon stocks equivalent to those measured within protected areas) which for these dry ecosystems it seems to be inaccurate). The project proponent is requested to: a) clearly define temporal rules for transitions; b) if necessary correct the final output. b) DNV GL checked the final LULC maps and confirmed that some group of pixels that cover less than 0.5 ha, i.e. forest definition, are present in these maps. These areas should be extracted from the LULC maps.			
CAR7 **Requirement:** §8.1.2 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet; tab "0.Drivers and parameters": **Non-Conformity**: a) Parameter "P (Proportion of biomass burnt)" it is not defined as a proportion. b) The emissions from collection of wood for charcoal are not multiplied by the efficiency in charcoal production. c) BEFs have not been applied to wood products obtained from the forest..	3.1	The following was corrected on the worksheet "0 Drivers and Parameters" a. Defined parameter P, proportion of biomass burnt. b. Missing efficiency factor in the estimate of wood for charcoal. BEFs have been applied to wood products (BEF2 of 3.4 applicable to tropical broadleaved from IPCC GPG was used).	DNV GL checked the GHG calculation spreadsheet and confirmed that the issues pointed out have been corrected. **CAR7 is closed.**
CAR8 **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:** Kulera Biomass Data Spreadsheet **Non-Conformity**: a) Tab "1.a. Summary of Soil". The carbon content in organic matter is 0.58 not 0.5 as this is the constant used by the laboratory of Bunda College. b) Tab "1.a. Summary of Soil". The SOC value for non-forest is sourced from the 2003 IPCC LULUCF GPG. However, DNV GL was not able to find this value in this document.	3.1	a) Please see Sample Soil Data v2-2 FROM CLIENT. d) Uncertainty for non-forest land has now been correctly calculated in cell V13 of worksheet Analysis from Walker-Desankar04. Soil carbon stocks in non-forest areas as reported by Walker and Desanker 2004 are conservative. Other scientific literature reports soil carbon stocks significantly less making values in Walker and Desanker a conservative default literature value. The report by Walker and Desanker 2004 was used as it contained enough extractable data for uncertainty analysis. Many studies relevant to the project area do not report the actual data of SOC plots at specific depths. Kaonga and Bayliss-Smith (2008) reported soil carbon stocks of 6.4–7.6 t ha^{-1} at depths in the topsoil (0–25 cm). Takimots et al. (2008) assessed carbon stocks on five non-forest, non-cropping land-use systems, two of which are applicable to fallow systems in Malawi. Abandon land and fodder banks were estimated to have a carbon content of 22.7 t ha^{-1}, and 11.0 t ha^{-1} respectively to a depth of 40 cm (if estimated to a depth of 30 cm this would be significantly less).	a) DNV GL checked the GHG accounting and confirmed that this mistake has been corrected – OK. b) The Soil Organic Carbon estimates for non-forest lands was derived from scientific publications as accepted by the applicable methodology. This estimate is sourced, Walker & Desanker (2004) /43/. The estimate used by the project proponent is a weigthed average of the estimates for croplands and fallow lands considering the proportion of each land as provided by Kerr (2005) /48/. DNV GL deems that this value is conservative considering that such values are from a soil with high content of clay and loam, while the soils in the project area are predominantly sandy soil /11/, so the former have inherently a higher carbon content due to

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
Moreover the value seems to be a general default value not applicable to the project area's circumstances and to related to specific soils in the project area. c) Tab "0.z.Emission Factor & Discount". The emission factor of BAR to MIO for AGD and SOM at t>10/20 is 2 and not zero. d) Tab "1.a. Strata Summary". No uncertainty has been defined for the SOC pool in the non-forest class. e) Tab "2.c. Sapling Datasheet" and "2.d. Livetree data-saplings". The average sapling aboveground biomass has been estimated as average of all sample plots, being this estimated as the number of saplings per plot multiplied by the average biomass per tree which has been estimated using all trees in across all subplots. The standard deviation has been estimated from these estimates per plot. Although the approach to estimate the average could be correct, the relative margin error is incorrect as it is not considering propagating the uncertainty in the estimate of the average biomass per tree which has been also estimated through sampling. f) Tab "4. Standing deadwood datasheet". The allometric equation employed it is the Chave equation for moist forests not for dry forests. g) Tab "5. Downed deadwood datasheet". The equation for the estimation of the biomass/ha seems to be incorrect as it should be BD*pi()*pi()/(8L)*d^2*10000 being L=2*25 m, BD expressed in t/m3 and d expressed in m.			the organic-mineral complexes which are much more resistant to degradation – OK c) DNV GL checked the GHG accounting and confirmed that this mistake has been corrected – OK. d) DNV GL checked the GHG accounting and confirmed that the uncertainty provided in Walker & Desanker (2004) /43/ has been used – OK. e) DNV GL checked the GHG accounting and confirmed that the project proponent has used a conservative estimation. First, the application of the allometric equation from Malimbwi et al. (1994) /44/ which only provides estimates of stem biomass will provide conservative esitmates. Secondly, the project proponent has estimated the average sapling biomass based on the data subplot and has used as estimate the lower bound of the confidence interval as average biomass per tree. The resulting conservative value has been multiplied by the number of trees in order to estimate the sapling biomass per plot – OK. f) The allometric equation has been corrected. Now an allometric equation sourced from Mugasha et al. (2013) has been used. This allometric equation is specific for the Miombo ecosystem and it provides conservative estimates in comparison with other applicable equations such as Chave et al. (2005) or Ryan et al. (2011) /53//45/ – OK. g) DNV GL checked the GHG accounting and confirmed that this mistake has been corrected – OK. **CAR8 is closed.**
CAR9 **Requirement:** §8.1.4 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet; tab "2c. RR - DF, RF, DG, RG": **Non-Conformity**: a) Parameter "Time in Transition Period" has been estimated considering the month and year, not the date.	3.1	The function fractionalyear(), is a Terra custom function, which takes years, months and days into account. To demonstrate this, just increase the number of decimals in excel to see that 20030418 equals 2003.29589041, which equals 2003 for year plus the fraction of a year that April 18th represents as such 31 days (Jan)+28 days (Feb)+31 days (Mar)+18 days (Apr)/365 = 0.29589 Both versions Vwawa 42.2 and 42.3 of the files provided on Terralytics have values of 1.79. Please double check the files provided, it is possible that you do not have the function fractionalyear(), in your Excel library. **Vwaza 42.2** **Section 3.1 Transitions in pixels**, not cloud corrected, not annualized	DNV GL checked the calculation spreadsheet and found that there was an issue in the data configuration of our excel spreadsheet. This CAR is therefore closed. **CAR9 is closed.**

<table>
<tr><th>Corrective action and/ or clarification requests</th><th>Reference to Table 1/2</th><th>Response by project participants</th><th>Validation conclusion</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td></td><td>20000721_20020508</td></tr>
<tr><td>Time in Transition Period</td><td>1.79</td></tr>
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Vwaza 42.3
<table>
<tr><td>Section 3.1 Transitions in pixels, not cloud corrected, not annualized</td><td></td></tr>
<tr><td></td><td>20000721_20020508</td></tr>
<tr><td>Time in Transition Period</td><td>1.79</td></tr>
</table>
</td><td></td></tr>
<tr><td>CAR10
<u>Requirement:</u> §8.3.2.2 of VM0006 Version 2.0
<u>Evidence:</u> VCS PD Version 3.0
<u>Non-Conformity</u>:
a) In order to estimate the isocrones raster the project proponent has created a raster assigning to each pixel a weight based on the maximum speed. In order to define the maximum isocrone of transport which defines the leakage boundary, the project proponent has identified 9 points in primary roads which cross the 10 km buffer (euclidean buffer) and has estimated the average time to the project boundary. However, the methodology requires to define this maximum isocrone based on the information on the mobility (time) of relevant agents and modes of transport provided by the PRA and to use this information in order to define the isocrone from the project boundary which defines leakage boundary.</td><td>3.3</td><td>Using a cost distance surface, a single threshold value needed to be identified to produce the isochrone envelope to delineate the leakage area. Travel time and distance traveled are interchangeable for assigning isochrones thresholds, with distance providing the only means of establishing a threshold since cost distance values are of relative cost and not in units of time. Using mobility distance values collected in the PRA, 10km was the greatest distance across each of the relevant agents and modes of transports (see table below). This 10km value was then applied to the cost distance surface by sampling a number of locations where roads reached a 10km distance. Using a buffer is a conservative measure of distance; road distances within the buffer will be greater than 10km since they are not perpendicular and will contain deviations from a straight line. The 9 points were collected to provide the sample of isochrone values for setting the threshold.
<table>
<tr><th></th><th colspan="3">Mobility Distance (km)</th></tr>
<tr><th>Row Labels</th><th>Min</th><th>Ave.</th><th>Max</th></tr>
<tr><td>Transporting Agriculture laborers and crops by Bicycle</td><td>0</td><td>0.69</td><td>10</td></tr>
<tr><td>Transporting Agriculture laborers and crops by Car/Truck</td><td>0</td><td>0.22</td><td>3</td></tr>
<tr><td>Transporting Agriculture laborers and crops by Motorbike</td><td>0</td><td>0.00</td><td>0.1</td></tr>
<tr><td>Transporting Agriculture laborers and crops by Ox-cart</td><td>0</td><td>0.16</td><td>3</td></tr>
<tr><td>Transporting Agriculture laborers and crops by Walking</td><td>0</td><td>1.02</td><td>10</td></tr>
<tr><td>Transporting Fuelwood by Bicycle</td><td>0</td><td>0.64</td><td>10</td></tr>
<tr><td>Transporting Fuelwood by Car/Truck</td><td>0</td><td>0.00</td><td>0</td></tr>
<tr><td>Transporting Fuelwood by Motorbike</td><td>0</td><td>0.00</td><td>0</td></tr>
<tr><td>Transporting Fuelwood by Ox-cart</td><td>0</td><td>0.24</td><td>3</td></tr>
<tr><td>Transporting Fuelwood by Walking</td><td>0</td><td>2.31</td><td>10</td></tr>
<tr><td>Transporting NTFP by Bicycle</td><td>0</td><td>0.62</td><td>10</td></tr>
<tr><td>Transporting NTFP by Car/Truck</td><td>0</td><td>0.00</td><td>0</td></tr>
<tr><td>Transporting NTFP by Motorbike</td><td>0</td><td>0.08</td><td>3</td></tr>
<tr><td>Transporting NTFP by Ox-cart</td><td>0</td><td>0.23</td><td>5</td></tr>
<tr><td>Transporting NTFP by Walking</td><td>0.05</td><td>2.32</td><td>10</td></tr>
<tr><td>Transporting Timber by Bicycle</td><td>0</td><td>1.03</td><td>6</td></tr>
<tr><td>Transporting Timber by Car/Truck</td><td>0</td><td>0.46</td><td>6</td></tr>
<tr><td>Transporting Timber by Motorbike</td><td>0</td><td>0.00</td><td>0</td></tr>
<tr><td>Transporting Timber by Ox-cart</td><td>0</td><td>0.28</td><td>4</td></tr>
<tr><td>Transporting Timber by Walking</td><td>0</td><td>2.36</td><td>10</td></tr>
</table>
Table above provided for clarification, please let us know if you feel it should be included in the PD.</td><td>The leakage area constitutes the area where the baseline activities would be probably displaced. The leakage area has been defined following the procedures prescribed in VM0006 (Version 2.0) /14/. The project proponent has produced a cost grid indicating the time that an agent would take to cross each pixel by foot in average. This grid has been produced from a grid indicating the maximum speed that an agent could reach in a certain pixel. DNV GL checked the average speeds assigned and deems that the values are reasonable considering the values provided by the PRA /7/. The leakage area would be defined as the isochrone from the project area equivalent to 1.5 the maximal time provided by the PRA /7/, being in this case 15 hours. Hence, the leakage area would be defined by the 15 hour isochrone from the project boundary.
DNV GL, based on its experience in conducting biomass procurement and logisitical models, is able to confirm that the above approach is correct and that it is in compliance with the applicable methodology.

CAR10 is closed.</td></tr>
<tr><td>CAR11</td><td>4.1.1</td><td>After the call on December 6, 2013 we believe this CAR is closed.</td><td>a) DNV GL closes this CAR as template 3.2 is still applicable –</td></tr>
</table>

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
Requirement: VCS project description template **Evidence:** VCS PD Version 3.0 **Non-Conformity**: a) Tables with parameters provided in section 5.1 and 5.2 are not in line with the VCS PD template (you may ask to the VCSA Secretariat for a deviation). b) Parameters which are not applicable to the project are provided in the VCS PD while they should be deleted.			OK. b) DNV GL accepts the customer response. The customer is planning to expand the Grouped project so the different parameters might be required in the future – OK. **CAR11 is closed.**
CAR12 **Requirement:** ¶2.2.3 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) The project proponent has argued that the Project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over at least 100 years as the areas are located in a protected area so these are protected by the existing laws. However, the project proponent has to consider that the proposed project consists in further protection of these areas in comparison with historical levels of protection against external agents of deforestation, so this additional conservation shall be analysed here. Hence the project proponent is requested to further elaborate how the local communities which are responsible of past deforestation are commited to continue management practices for 100 years.	1.3 Opportunity Cost	Local communities, via their Community Associations, who have traditionally been responsible for past deforestation have signed Cooperative Management ("co-management") agreements with the Government of Malawi, through the Department of Parks and WildlifeDepartment of Parks and Wildlife (DPW). These agreements obligate the Association and its member communities to comply with provisions of the protected areas' approved management plans; as well as to ensure compliance with such laws on the part of the public in general. The co-management agreements are automatically renewed every 3 years unless otherwise terminated by either party. Further the Associations have signed a REDD+ Agreement, with DPW and Terra, that specifically states that the Associations and their member communities "For a period of 30 years beyond the Crediting Period, a period sufficient to minimize the risk of the Project according to the VCS non-permanence risk tool, agrees to implement those management practices necessary to maintain carbon stocks on which GHG credits have previously been issued during the Crediting Period." The Risk Assessment v3-0 has been updated to clarify this point. We removed the mitigation credit from the risk buffer, though this did not impact on the overall risk score.	DNV GL confirmed that the REDD+ agreement signed between the associations, DPW and TGC specifically states that the Associations and their member communities "For a period of 30 years beyond the Crediting Period, a period sufficient to minimize the risk of the Project according to the VCS non-permanence risk tool, agrees to implement those management practices necessary to maintain carbon stocks on which GHG credits have previously been issued during the Crediting Period." **CAR12 is closed.**
CAR13 **Requirement:** ¶2.2.4 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) According to ¶2.2.4 2) the right of use has to be secured for the whole project longevity. However, the REDD+agreements have a validity of 30 years renewable 20 years, and a 60 year longevity is been argued. b) According to ¶2.2.4 3) the project longevity has to be covered by financial plans or management plans, however, in the	1.4 Project Longevity	a) The REDD+ Agreement specifically states: "For a period of 30 years beyond the Crediting Period, a period sufficient to minimize the risk of the Project according to the VCS non-permanence risk tool, agrees to implement those management practices necessary to maintain carbon stocks on which GHG credits have previously been issued during the Crediting Period." Also, see Section 8.12 of the REDD+ Agreement, which defines the "Term: The term of this Agreement shall be the longer of the Crediting Period or the Project Longevity period from the Project Start Date ("Term")." Since the DPW and the Community Associations are Project Proponents and through the VCS Deed of Registration agree that the information submitted is correct and the longevity is stated as 60 years, this provides evidence that the right of use is secure for the full 60 year longevity period. b) Within the REDD+ Agreement the parties agree to develop and implement budgets Section 4.03 "The Parties will mutually agree to negotiate and finalize a budget to implement activities that each Party will contribute as described in SCHEDULE B: Project Implementation Workplan and within three	a) According to the REDD+ agreement, parties agree "to implement those management practices necessary to maintain carbon stocks on which GHG credits have previously been issued during the Crediting Period". Furthermore, the validity of the contract is for 30 years or the project longevity whichever is later, covering the right of use of Associations and TGC– OK. b) The REDD+ Agreement Schedule B and C cover 60 years which are the documents "*submitted to local government or financial institutions*". Other evidences have been provided but it cannot be confirmed that these have been approved by the local government – OK.

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
REDD+agreements activities are only planned for 30 years.		months of execution of this agreement. These costs will be updated annually and will be mutually agreed by the Parties." The Project budget has been developed for the full Longevity Period, based on the activities included in the two schedules noted above, this shows a) which activities will be carried out after the Crediting Period up to the end of the 60 years longevity period (SCHEDULE B) and b) the Project budget (which has been provided to the VVB for the audit) shows the costs of implementing these activities through the longevity period. Specifically, the co-management agreements, which are automatically renewed every 3 years, obligate the Associations to comply with the provisions of the protected areas' management plans, which exist in perpetuity. The Schedule B from the original REDD+ Agreement was updated by the Parties, which is allowed for under the agreement, to reflect which if the activities would continue during the longevity period. This updated version of the Project Implementation Plan v2-1 was provided by the VVB, but the column header was inadvertently left of that version, a new version was uploaded v2-2. Additional text was added to the risk assessment and an updated version of the Project Implementation Plan v2-2 has been provided on Terralytics.	**CAR13 is closed.**
CAR14 **Requirement:** ¶2.3.3 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) Governance indicators for 2012 are available. b) Malawi has not entered in any bilateral or multilateral agreement for developing its REDD initiative.	2.3 Political Risk	a) In Kulera REDD Risk Assessment Validation v2-0, the labels on the data table were incorrect, however the data used for the calculation were correct as they included 2008-2012. The labels have been updated in v3-0 of the Risk Buffer. b) Section 2.3.3 2) a) of the VCS risk buffer allows for a mitigation credit if "The country is receiving REDD+ Readiness funding from the World Bank Forest Carbon Partnership Facility, UN-REDD or other bilateral or multilateral donors, and is implementing a REDD+ policy framework covering key components such as GHG credit ownership, clear government authority over REDD+ projects, and/or national measurement, reporting and verification systems". This Project meets the requirement a), as it has received bilateral funding from the US government for REDD+ readiness, in Malawi's program called MRRP. The Malawi REDD+ Readiness Program (MRRP) is a joint effort of the United States Forest Service (USFS) and United States Agency for International Development (USAID). Launched in August 2012, the MRRP is based out of the Malawi Department of Forestry (DoF) and is presently slated to run through August 2014. This does not require that a bi-lateral agreement is signed only that funding is being provided and that it supports the activities that constitute REDD+ readiness. Through bilateral funding the USG has provided support to Malawi for REDD+ readiness which meets this mitigation requirement, the detailed MRRP workplan can be provided to the VVB, as required.	a) The report has been updated. The used indicator is correct. – OK. b) The requirement states "The country is receiving REDD+ Readiness funding from the World Bank Forest Carbon Partnership Facility, UN-REDD or other bilateral or multilateral donors, **and** is implementing a REDD+ policy framework covering key components such as GHG credit ownership, clear government authority over REDD+ projects, and/or national measurement, reporting and verification systems.". Regarding the first part of the requirement, during the meeting with the REDD focal point from the USDA FS DNV GL was informed that the US support is linked to the development of the programme but that the next stage would be the contact with different potential donors for the REDD programme implementation. Regarding the second part, DNV GL was given a copy of the Malawi REDD+ Draft Workpplan: 2013-2014 which provide an overview of the actions to be implemented from September 2013 to 2014 and an overview of the status of the Malawian REDD initiative confirming that the Malawian government is commited to develop their REDD initiative, thus mitigating the governance risk. **CAR14 is closed.**
CAR15 **Requirement:** ¶2.4.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) As stated in various parts of the VCS PD, no fire management plans are in place in the project areas. Furthermore, as confirmed during the interviews held with members of	3 Natural Risks	a. Resource scarcity is common phenomenon across the REDD+ participating countries. This does not necessarily mean DPNW is entirely incapable to combat fires. In areas like the Nyika Plateau, where fires burn regularly, DPNW practices early burning in strategic locations to reduce the fuel load early in the burning season. A lot of the parameters of the protected areas are bound by roads and fuelbreaks, which are maintained from time to time to prevent the spread of fire. We have indicated that fire is still a risk, but given that miombo woodland is a fire adapted ecosystem, the fire risk is not that severe. The project proponents plan to have a fire plan, but little documentation nor fire planning has taken place. In addition, the human resources in terms of	a) As stated, during the site visit staff of the DPW confirmed the lack of resources to combat or prevent fires. Hence, today, the DPW does not have the capability to contain this natural risks above historical levels as no additional efforts have been made. Therefore, a mitigation factor in order to mitigate the LS observed in the past, cannot be justified. The NPR report has been revised accordingly – OK. b) The report has been updated – OK.

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
DPNW, fires are an issue and DPW does not have enough resources in order to combat these fires or prevent them. b) The project proponent has selected for pest and disease outbreaks a Likelihood of Once every 10 years and insignificant. This is equivalent to a risk of 1; however, the project proponent has written 2. c) The project proponent has selected a mitigiation of 0.25 for pest and disease outbreaks. However, in the same document it is written that this is not relevant and that no mitigation is being applied. d) The project proponent has not discussed extreme droughts as part of the extreme wheather risk category.		developing fire management plans are available within DPNW. b. The understory in the Project Area contains a minimal amount of fuel load, thus minimizing the damage from fire. TLC is determined to reduce high rate of human induced fires. In fact TLC has sponsored a "jingle on the radio", to increase awareness about fire and reduced unnecessary burning. In areas were TLC is actively promoting conservation agriculture, communities will stop fire as it burns their corn stover mulch. The Project Proponents DPW, TLC and the Associations) have experience in implementing effective fire prevention measures and have substantial experience in dealing with bush fires. Given the fire management capacity and history of qualified fire management experience of the Project Proponents, fire mitigation points were applied in the risk buffer determination. However, we acknowledge that there is no fire management plan at this time, though the project proponents have experience working with ecosystems where fire is a primary agent of disturbance. It is the lack of resources that is currently preventing the project proponents from fully carrying out fire prevention activities. The VCS allows for a mitigation score for either or both of the following two activities: a. Prevention measures applicable to the risk factor are implemented b. Project proponent has proven history of effectively containing natural risk Our assessment concludes that the Project Proponents have proven history of effectively containing fire. Our assessment also concludes that there have been only limited prevention measures (such as campaigns for fire awareness) and little on-ground fire prevention activities. Therefore, we only applied mitigation point of 0.50 for project proponent experience in fire management. c. We have corrected the risk score to 1. For pest and disease outbreaks, yes there has been no mitigation activity planned as it was deemed unnecessary. However, in the event of future increase in diseases, the Project Proponents have so far contained the natural risk caused by diseases and insects. In addition, the Project Proponents have access to FRIM and experts with experience in containing the diseases and risk. For example, under Disease and Insects, we stated, "Also, the Project Proponents have access to technical expertise of FRIM on issues of pest and diseases." Therefore, a 0.5 mitigation factor related to "Project Proponent has proven history of effectively containing natural risk" was applied. d. We have described the following in describing forest fire: *"In the Lake Chilwa area of Malawi, in addition to declining potable water supply and drought-associated disease risks, there has also been poor productivity on tree farms; loss of indigenous trees in communal areas, riverbanks and surrounding forest reserves; a decline in agricultural productivity; and declining fish catch from the lake. Malawi has had two major droughts over the past 50 years (1948-49 and 1991-92). Severe drought in Malawi has a return interval of 25 years, i.e. one severe drought event every 25 years."* We also discussed in the same section that the drought event may cause forest fire.	c) The risk due to pests and diseases has been set to no loss, which is reasonable as natural forests with no past disturbance of this kind is not expected to see losses in the future. DNV GL deems that this is reasonable. – OK. c) This risk is integrated in other risks factors – OK. **CAR15 is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
		"Our assessment concluded that fire may occur due to drought in the Project Area." Our analysis also showed that drought may increase the risk factor for disease and pests even though we have not seen any insect and disease in the project area. Under Disease and Pest risk we stated: *"Nevertheless, the occurrence of severe droughts has been linked with insects and diseases that may impact the Project Area."* Under section 'Extreme Weather', we stated: *"No devastating weather event has occurred in recent history in the Project Area, with the exception of two droughts during the past 50 years. Even in the absence of pronounced droughts, intermittent long dry spells during the rainfall season are a common occurrence in many parts of the country. The frequent occurrence of drought has been a concern, as this may result in increased incidences of fire should forests be full of fuel."* Essentially, we have discussed the fact that the drought in Malawi may occur about once during a 25 year period. We also discussed that we did not find evidence of direct loss of trees from drought events. The project area has not suffered direct loss of trees from drought events. However, the risk of loss from fire and risk of loss from diseases may increase and therefore, we have incorporated risk from drought into the risk of loss from fire as well into the risk of loss from diseases and pests, and considered no-loss from drought. We have added the following to explicitly state this very fact in the revision: "Incidence of droughts has not been linked to direct loss of forests such as death of trees. Droughts are reported to induce forest fire. Since forest fire and risk of loss from forest fire has already been covered already, risk of loss from droughts was considered zero." Please see the updated Risk Assessment.	
CAR16 **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:**VCS PD Version 5.0 and emission factor spreadsheet **Non-Conformity**: a) Root-to-Shoot ratio: The root-to-shoot ratios provided in Table 31 and Section 5.2 of the VCS PD are not consistent with the emission factor calculation spreadsheet "Kulera Biomass Data v0-52". Please also provide evidence on the conservativeness of the used value in comparison with other "relationships obtained from the local/national studies that closely reflect the conditions of the project activity" which can be sourced in the literature, e.g. Mugasha et al. (2013) or Ryan et al. (2011).	Open after issuance of draft report	a) Root to shoot ratios were updated with values obtained from local/national studies that closely reflect the conditions of the project. The paper by Mugasha et al. (2013) provides R:S ratios for miombo woodlands with a range of growing conditions in Tanzania - similar to that of the project site. Root to shoot ratios are based on DBH with an average of 0.4. Other studies such as Ryan et al. report R:S of 0.42 for miombo woodland, and IPCC GPG report values of 0.48 for woodland/savanna and 2.83 for shrubland, showing that the Mugasha paper is inherently conservative for miombo woodlands. Root to shoot ratio for trees in evergreen plots were based on Mokany et al. 2006, which assessed the overestimation of R:S ratios in terrestrial biomes. Root: shoot ratios presented in the study improved the accuracy of root biomass estimates for purposes of carbon accounting and ecosystem dynamics. The median R:S ratio with Tropical/subtropical moist forest/plantation with a shoot biomass >125 mg ha-1 was found to be 0.235. The study is conservative when compared to IPCC GPG R:S ratios of .42 for Secondary tropical/sub-tropical forest, 0.24 for Primary tropical/sub-tropical moist forest, and 0.27 for Tropical/sub-tropical dry forest. The conservatively assessed Mokany et al. 2006 paper on root to shoot ratios in terrestrial biomes was also used to assess non-tree belowground biomass. Tropical/subtropical/temperate dry woodland,	a) The project proponent has sourced the root-to-shoot ratios from Mugasha et al. (2013) and from Mokany et al. (2006). The R:S of the former were estimated from trees growing in Miombo woodlands in Tanzania while the R:S from the latter are are based on a dataset of 25 publications. Values from these sources were applied conservatively – OK. b) DNV GL checked the revised spreadsheet and confirmed that the pooled variance has been correctly calculated and that the resulting uncertainty is correct - OK. **CAR is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
b) In the Tab "Analysis from Walker-Desankar04" the uncertainty of the non-forest SOC estimate has been estimated out from the average variance estimated from the variance of each of the depths. Please clarify if this way to combine variances would be correct.		savanna and Tropical/subtropical grassland were averaged to get a value of 1.45. IPCC GPG reports a value of 2.8 for semi-arid grasslands, 1.58 for Temperate/sub-tropical/ tropical grassland and 2.83 for shrubland, showing that our assessment is more conservative. b) The objective of the estimating the average variance was to get an estimate of pooled standard deviation from different subgroups (i.e. depths) of soil carbon measured at each plot locations from which the mean soil carbon content was derived. These subgroups may have different soil carbon content and are assumed to have same variance. In order to derive an estimate of pooled standard deviation, we had to square the standard deviation and get a weighted average of variance of the each of the subgroup. The procedure we have used is correct as we have simply used a method related to the estimating the pooled variance of soil carbon at different depth that are assumed to have same variance. Because, the number of plots for each sub groups are same, the simple average was sufficient. A simple formulae of pooled variance is: $$S_p^2 = \frac{\sum_{i=1}^{k}(n_i - 1)s_i{}^2}{\sum_{i=1}^{k} n_i - 1}$$ Where, sp^2 is the pooled variance for the population i. ni is number of plot for each depth which is same for all three depths.	
CL1 **Requirement:** VCS PD template **Evidence:** VCS PD Version 3.0 **Clarification:** a) Clarification is sought in Section 1.10 of the VCS PD on what is the list of the main events/milestones of the project activity from the feasibility stage passing through the starting date up to the current date.	1.10.2	The following was added to the PD section 1.10 This Project was initiated when Total LandCare, Terra and other partners were successful in winning a USAID competitive grant in Malawi to promote biodiversity within the context of mounting population pressure was is leading to unsustainable land-use. Total LandCare designed the program to meet these goals and named it the "Kulera Biodiversity Project" after the Chichewa term Kulera - to nurture, look after, enrich – a description that aptly reflects the project's goal from a Malawi perspective which is fully aligned with current policies and strategies of government, USAID and other key donors. Assessments reveal that mounting population pressures have led to severe degradation of the country's natural resources from unsustainable land-use practices and encroachment into key protected areas. This was one of the first large USAID programs that included financial support to assess the feasible of developing emission reductions, and to undertake the activities to produce verified emission reductions. The program was award in October 2009, but took approximately6-9 months to get fully functional. The emission related work started with a feasibility assessment to determine which of the Kulera land-use activities would be eligible for developing verified emission reductions and that with the successful sale of the carbon could generate long-term incomes streams to continue to support the program after USAID funding ended.	DNV GL checked the VCS PD and confirmed that it now provides a short list of events and milestones which will enable to stakeholders to understand the main events from inception to starting date. **CL1 is closed.**
CL2	1.12.1.a	The Parks and their borders are established by the DPW per National Park and Wildlife Act, CAP	The answer is accepted. Although there is an intention to revise

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
Requirement: ¶3.11.1 of VCS Standard Version 3.4 requirements **Evidence:** VCS PD Version 3.0 **Clarification:** a) During the site visit DPW-Vwaza confirmed that there was an area of Vwaza wildlife reserve which has been subject to serious encroachment in the past. As a result, the limits of the protected area are going to be redefined while the encroached area will be given as customary land. The project proponent is requested to clarify if it would have the right of use over these areas.		66.07, 1992 and the Game Act, CAP 66.03. This authorizes the DPNW to manage parks and game reserves and their associated boundaries. During interviews on November 11 with the Director of the DPW Brighton Kumchedw, he confirmed that there have not been, and that there are no plans to change the boundaries of the protected areas. Agricultural encroachment in Vwaza shows the tremendous pressure on the project areas. Based on information provided by the Director, Brighton Kumchedwa, of the DPW directly on this question the following detail was provided: Sometimes there is confusion because of the boundary fence in some cases does not exactly follow the actual park boundary. For the area referred to as being "encroached" it a result of the boundary fence shifting but not shifting the park boundary. As a point of correction, if there should be a case where there was interest in moving the park boundary inside as a result of encroachment, the park boundary cannot easily be moved. And based on what Blessings Mwale provided from the Park Manager, if there would be a new boundary, it only becomes official after it is approved by Parliament and Gazetted. There is no needed change to the PD.	the boundaries, this has not yet become effective as confirmed by DPW-Vwaza, so the project proponents still can demonstrate the right of use on the encroached areas. **CL2 is closed.**
CL3 **Requirement:** Applicability criteria of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.2 of VCS PD on whether at least 50% of the households in the reference region continue using traditional cook stoves in the baseline scenario as required by §4.1.4 of the MED.. b) Further information is required in section 2.2 of VCS PD on: a) the exact agriculture intensification practices in place; b) the rationale of part of the intensification practices not being within the leakage area. c) Further information is required in section 2.2 of VCS PD on whether the project activity consisting in the introduction of livestock is in compliance with the applicability conditions of §4.1.8 of the MED. d) Further information is required in section 2.2 of VCS PD on whether the proposed project is in compliance with the applicability criteria of the "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0).	2.2	a) Based on the HH surveys that were completed for the project (see Socioeconomic Baseline inventory for the Kulera Biodiversity Project), it was estimated that only 6.3% of the HH used fuel efficient stoves. b) Additional details of the agricultural intensification practices that are supported by the Project have been added to section 1.8.7. Since the Project Area itself does not allow agricultural since it is a protected area, these activities are supported by the Project in the Project Zone (as defined in the PD) to reduce pressure in the Project Area. The Project Zone is 10 km area outside the boundary of the Protected Areas (aka Project Areas) and the Leakage Area is roughly the same, although its exact boundaries are more precisely drawn, based on cost/distance methods detailed in the PD. So the Ag intensifications are being done in the Leakage Areas. c) Additional details of the livestock program have been added to the PD Section 1.8.8. This livestock activities supported by the Project are to support programs that facilitate entry into low cost & fast returns (rapid growth & reproduction) livestock with poultry, guinea fowl, rabbits, pigs and goats. These types of livestock are not part of the scope of livestock that must be accounted for under the methodology see: 8.3.4.3 Estimate GHG Emissions from Increased Livestock Stocking Rates, 8.3.4.3.1 Scope and Applicability See Section 4.2.6 for a list of applicability conditions when increasing livestock stocking rates. Livestock stocking rates must be increased through either or both of the following measures: • Increasing the stocking density of livestock on existing grazing land. • Moving of cattle to a zero-grazing system, defined as a system of feeding cattle or other livestock in which forage is brought to animals that are permanently housed instead of being allowed to graze.; d) please see CAR 4, for response	a) DNV GL confirmed that only 6.3% of HH in the project zone (similar to leakage area) use currently fuel efficient stoves. This has been discussed in the VCS PD – OK. b) DNV GL checked the VCS PD and confirmed that it has been revised. It now includes sufficient and accurate information on the agriculture intensification practices in place – OK. c) DNV GL checked the VCS PD and confirmed that it has been revised. It now includes sufficient and accurate information on the livestock component and how this does not represent a significant emission source – OK. d) The VCS PD has been revised. Now it provides an explanation on how the project complies with the applicability conditions of the additionality tool– OK. **CL3 is closed.**
CL4	2.3	a. While it is true that the fire prevention activities such as prescribed burning are being planned, the	a) DNV GL accepts the customer response. It is correct that as

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
Requirement: §5.2 of VM0006 Version 2.0. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.3.2 of the VCS PD on the rationale of excluding emissions from the removal of woody biomass for fire prevention and suppression activities. During the site visit staff of the DPW confirmed that fire prevention activities such as prescribed burning are planned in the future. If this emission source is not excluded or demonstrared to be negligible, provisions of the methodology should be followed in order to monitoring and account for these emissions. b) Further information is required in section 2.3.2 of the VCS PD on the rationale of excluding emissions from increased livestock stocking rates. During the site visit it was confirmed that some project activities consist in providing livestock to local communities. If this emission source is not excluded or demonstrared to be negligible, provisions of the methodology should be followed in order to monitoring and account for these emissions.		exact nature of the activities are not clear at this time. Any prescribed burning is planned on the Nyika Plateau in grassland void of trees, causing no loss in woody biomass. We have indicated in the PD that these activities are not currently implemented and plans are not documented. We will provide any update in the subsequent Monitoring Reports as any significant activities are occur. b. Project Activities do not contribute to the increasing livestock rate. Additional details of the livestock program have been added to the PD Section 1.8.8. TLC promotes non-cattle small-scale livestock production and community collectives. Theses livestock activities supported by the Project are to facilitate entry into low cost & fast returns (rapid growth & reproduction) livestock with poultry, guinea fowl, rabbits, pigs and goats. These types of domestic animals are not part of the scope of livestock that must be accounted for under the methodology see: 8.3.4.3 Estimate GHG Emissions from Increased Livestock Stocking Rates, 8.3.4.3.1 Scope and Applicability See Section 4.2.6 for a list of applicability conditions when increasing livestock stocking rates. Livestock stocking rates must be increased through either or both of the following measures: Increasing the stocking density of livestock on existing grazing land. Moving of cattle to a zero-grazing system, defined as a system of feeding cattle or other livestock in which forage is brought to animals that are permanently housed instead of being allowed to graze.	confirmed during the site visit prescribed fires are applied only in open areas dominated with grasses, mainly in the sides of roads which are located in the boundary of the protected areas. This was confirmed during the site visit. This means that non-woody vegetation will be burned and that in any case non-CO2 emissions would be negligible – OK. b) DNV GL checked the VCS PD and confirmed that it has been revised. It now includes information on the livestock component of the project. This consists in providing domestic animals to farmers, mainly few monogastric small size animals which have a negligible GHG impact. This was effectively confirmed during the site visit. Hence, this kind of livestock is not the livestock covered by the framework of the methodology – OK. **CL4 is closed.**
CL5 **Requirement:** §3.4 of VCS Standard Version 3.4. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.3.2 of the VCS PD on which is the geographic region within which project instances may be developed as required by 3.4.2 of the VCS Standard. b) Clarification is sought on whether different baseline scenarios will be defined for different designated geographic region as required by 3.4.5 and 3.4.7 of the VCS Standard.	2.4.1	Please see response to CAR1.	a) DNV GL confirmed that the VCS PD includes now the following eligibility criteria “The new instances added to the project must be within the Country of Malawi, and have ecological, social and cultural similarities, as well as similar drivers and agents of deforestation to the initial project instances. New project parcels are not required to be within the jurisdiction of DPW. Within the Monitoring Report there must be documentation of how the new instances have similar characteristics to the original instances.”. This eligibility criterion will serve to define the geographical boundary of the grouped project and the similarity from the design point of view /1/ - OK. b) DNV GL confirmed that the VCS PD includes now the following eligibility criteria “The new instances are subject to the baseline scenario as described in the PD. At a baseline update, all new instances must also follow the new baseline. The baseline update must be applicable to all instances and must be documented in the Monitoring Report.”. This eligibility criterion will serve to ensure that the instance determines the baseline scenario following the same procedures as provided in the VCS PD /1/ - OK.

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
			CL5 is closed.
CL6 **Requirement:** §3.5 of VCS Standard Version 3.4. **Evidence:** VCS PD Version 3.0 **Clarification**: a) Further information is required in section 2.6 of the VCS PD regarding the methodology deviation: a) Explanation on the reasons why satellite imagery of previous dates has not been used considering that in Glovis earlier images with similar quality (i.e. cloud cover, quality, level of correction) are available today; b) Justification on how this deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals.	3.1.1	Suitable imagery had not been transferred from the South African download station to the USGS archives at the time of the classification so we proceeded to classify the 2000 imagery. Suitable imagery has since been made available, however due to the extensive time and expense required to classify this challenging region, only one replacement scene (for Nkhotakota) was classified. It is our belief that the combination of 1991 imagery in the classification workflow and the close proximity of the 2000 imagery to the required 1999 minimum period results in marginal and conservative deviation. See Deviation 1 in Section 2.6 Methodology Deviations of the updated PD.	The VCS PD has been revised and it includes now an explanation on the mentioned methodology deviation. The project is applying a deviation in the timing of the used satellite imagery. Two out of the three Project Area regions (Nyika and Vwaza) classified satellite images used for the first historic time period do not meet the 10-15 years prior to project start requirement. At the time of data acquisition there was a gap in available Landsat 5 imagery for the 10 to 15 year historic period. The closest available data was Landsat 5 from 1991 and Landsat 7, launched in 1999 with <20% cloud cover scenes beginning in 2000. The Landsat 7 year 2000 scenes were selected as the closest temporal match to the 1999 minimum requirement and used as the first historic period for the Nyika and Vwaza regions. DNV GL deems that this deviation is acceptable as used satellite imagery do not comply with the requirement by less than 6 months, which is negligible considering that other REDD methodologies allow to a +-1 year buffer for image consideration. This will provide more accurate results than the 1991 scene which will provide estimates of very old conditions and socio-economic environment not comparable to the present one. Furthermore, as confirmed by DNV GL 1991 scenes were also employed but as ancilliary data in order to inhance the confidence of the 2000 land cover classifications. The reported deviation is acceptable as per §3.5.1 as it is a deviation from the criteria and procedures relating to monitoring set out in the methodology and they result in an increased accuracy of such quantification as they are still within acceptable distance fom the 10-15 year period and closer to the 10 year where socio-economic conditions and environment is closer to the current one. **CL5 is closed.**
CL7 **Requirement:** §8.1.2 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet; tab “0.Drivers and parameters”: **Clarification**: a) The assumed value of parameter “Number of households” is 45000 while the HH survey indicates 66000 HH. b) In order to estimate ”DT_Baseline [MG DM Yr-1]” it has been assumed that: a) 483.85 kg of tobacco are produced per household; b) and that 2 kg of wood for poles are used for the	3.1.1	Corrections to the following were made to the workbook “0. Drivers and Parameters” a. The number of households was updated to 88,740. This is the total number of households in the project zone. While the project has a target to reach 45,000, the actual number of households reached was 66,000, showing that the project reached beyond projections. Please see the description in the updated risk buffer report. b. Inconsistency in the units was resolved. We have also revised the estimate for tobacco yield which is 575.61 kg per acre. The mean area of tobacco cultivation is 1.38 acre per hh. These estimated were obtained from Household survey. Again, driver for ‘Wood burning for tobacco curing’ is not relevant as it would cause the double counting of the estimate. c. The efficiency range of 0.16-0.2 could be reasonable, but seems to be very low. The previously used 0.8 value seem too high. We revisited this parameter and have determined that 0.2 is more suitable for Malwai. One study from the region reports efficiency in the range of 12 – 40%	a) DNV GL checked the GHG emission calculation spreadsheet and confirmed that it has been updated – OK. b) DNV GL checked the GHG emission calculation spreadsheet and confirmed that it has been updated – OK. c) DNV GL checked the GHG emission calculation spreadsheet and confirmed that it has been updated – OK. **CL7 is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
tobacco barns per kg of tobacco produced. However in parameter "Annual Fuelwood Consumption (kg DM HH-1 yr-1)" it has been assumed that: a) 483.85 kg/hh/**acre** are produced; b) and that 2 kg of wood are used to cure 1 kg of tobacco. There seems to be an inconsistency in units. c) The efficiency in charcoal production applied is 0.8. However, according to DNV's experience the charcoal production efficiency in rural areas of sub-Saharan Africa (traditional kilns) is 0.16-0.2.		(Kammen and Lew 2005). In Malawi, Makungwa (1997) recorded average efficiency of over 20%. In another study HEDON (2010) reported an efficiency range of 8 - > 24% for Malawi. In addition it has been suggested by IPCC (1996) that in the event that no local information is available, 6 kg of wood input per kg of charcoal may be used as default which is roughly equivalent to 17% efficiency. Citing the above references, we have used an efficiency value of 20%. • HEDON. 2010. Charcoal Production Chain. Household Energy Network. Available online: http://www.hedon.info/ CEC:CharcoalProductionChain • Makungwa S., 1997. Charcoal Production Study in Blantyre Area. Forest Research Institute ofMalawi report no. 97003. • Kammen and Lew 2005. Review of Technologies for the Production and Use of Charcoal. (http://rael.berkeley.edu/sites/default/files/old-site-files/2005/Kammen-Lew-Charcoal-2005.pdf)	
CL8 **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:** **Clarification**: a) Tab "10. Soil Samples". Clarification is sought on whether values provided refer to % of organic carbon or % of organic matter. b) The project proponent is requested to clarify why only SOC was sampled in plot 224 and not other carbon pools. c) Tab "2.a. Live Tree Datasheet". Clarification is sought on how the Chave allometric equation has been validated for the project conditions following the procedures of Section 10.4 of the methodology. d) Tab "2.c. Sapling Datasheet". Clarification is sought on the suitability of the Chave allometric model applied to saplings (i.e. range of validity of the equation and applicability of equation to project area's circumstances). e) Tab "2.a. Live Tree Datasheet". Clarification is sought on how it has been determined the basic density applied in the Chave allometric model (i.e. 0.6 t/m3). f) Tab "7. Abovground non-tree datasheet". Clarification is sought on how the weight of the empty gunnysack has been accounted for as it seems that "Weight of full gunnysack in field using the spring scale (g)" includes the weight of the gunnysack (c.f. please refer to Nyka 220 field data sheet).	3.1.1	a) The data given is in percent of organic carbon, this has been made clearer in the worksheet "10. Soil Samples" and worksheet "1.a. Summary of Soil". Calculations have been updated in worksheet "1.a. Summary of Soil." b) There was missing field datasheets for aboveground carbon pools in plot 224, though soil and soil data was collected. Due to the limited budget another campaign to resample plot 224 was not possible. The project had a limited budget to measured soil, so we were unable to gather additional soil samples in evergreen plots once the analysis was complete. c) The allometric equation developed by Chave et. al. (2000) was used as a conservative allometric equation for tree biomass. The equation for "dry forest stands" in Chave et al. (2005) was found to be appropriate for tree biomass with a diameter greater then 5cm DBH for both miombo and evergreen forest. The project partners do not have an allometric equation specific to the project area and allometric equations for created near the area were found to include miombo trees exclusively. Our classification of miombo includes dry and wet miombo with stands that include some evergreen trees. It was found that the equation for "dry forest stands" is much more inclusive for all trees classified in miombo in our classification. d) Malimbwi 1994 was used to estimate biomass for saplings within the project area. The allometric equation selected uses regression estimators for stems from 1cm up to 15cm. This DBH requirement is much more specific to the trees measured in the sapling biomass pool. d) Basic tree density was calculated using IPCC GPG, LULUCF, Table 3A.1.9-2 Basic Wood Densities of Stemwood for Tropical Tree Species. Trees for Tropical Africa were averaged to be 0.60. This figure is conservative as it includes evergreen trees that are less dense. Malawian forest experts also identified this number as conservative for miombo woodland. e) Weight of the gunnysack has been subtracted in column x of the worksheet "7. Aboveground non-tree data." The allometric equation derived from Mugasha et al. 2013 was found to most closely resemble the miombo conditions of the project. Applicable allometric equations for Kulera are shown graphically in the workbook TGC_Kulera_AllometricEquations v0-1.xlsx. Figure 1 shows biomass values based on	a) DNV GL checked the provided evidence and confirmed that the soil samples provide values in terms of organic carbon, not organic matter which is the output of the Walkley Black Procedure used to estimate the % of organic carbon - OK b) The project proponent's response is accepted. In any case the effect of one sample in the estimator is negligible – OK. c) The project proponent has applied an allometric equation sourced from Mugasha et al. (2013) for the Miombo forest class which provides accurate values and conservative for the project conditions in comparison with Chave's model. For the Evergreen forest it has applied the Chave model which provides conservative estimates for diameters above 60 which are mainly present in Evergreen forest. These equations provide conservative estimates and are deem to be correct by DNV GL – OK. – OK. d) Malimbwi (1994) /44/ provides very conservative values since it provides estimates of stem biomass, not aboveground biomass– OK. e) 0.6 is very conservative considering that Miombo species have generally basic densities well above 0.6 /53//27//44//45/ - OK f) DNV GL checked the GHG emission spreadsheet and confirmed that it has been corrected substracting the gunny-sack's weight – OK. **CL8 is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
		DBH to the extent of the equation, and shows that the Chave dry equation is conservative as compared to Chamshama et al. (2004), Chave, Moist and Mugasha et al. 2013. The slopes of the identified allometric equations differ with the logarithmic function used. At lower DBHs the Chave dry equation was found to be less conservative then other allometric equations identified (shown in Figure 3). In order to be the most conservative Mugasha et al. 2013 was used as the overwhelming majority of the miombo trees fell in the low DBH range where the Mugasha equation comparatively underestimates biomass. For trees in evergreen plots Chave, Dry was used as it shows to be conservative at the higher DBH range (Shown in Figure 3).	
CL9 **Requirement:** §8.1.3 of VM0006 Version 2.0 **Evidence:** Site visit **Clarification**: a) During the site visit it was confirmed that in the case of soils with presence of stones (fragments >2 mm), the volume of these in the soil profile were not estimated in order to substract it from the accountable soil organic carbon. Clarification is sought on what is the impact of not considering this in the calculations considering the whole project area and whether this affects the conservativness of the estimates. b) Clarification is also sought on hos these fragments have been considered in the lab analysis.	3.1.1	a) The soil carbon pool was discounted due to the fact that there are rocks in the soil profile. The soil carbon pool for this project only accounts for changes in soil carbon in the first 30cm of soil, though upon conversion to agriculture soil carbon is lost below 30cm as well (Walker and Desanker 2004). As we are only accounting for loss in the first 30cm of the soil prolife, our calculations are conservative. A soil map of Malawi was used to extract soil data for each FAO soil class. The only significant soil classes (>2%of the area) were Cambisol, Lixisol, Luvisol, Ferrasol, Fluvisol, and Leptosols. Rock content was weighted on the area of each soil class per forest stratum and the soil carbon pool was reduced in each forest stratum. For calculations see Soil classes with reduciton of rocks.xlsx. b) The SOP for soil states that only soil is collected in the soil sample. The biomass team is familiar with removing rocks from the soil sample tube. During the lab analysis at Bunda College any fine particles are further removed as required before the Walkley-Black Method. The procedure used in the lab at Bunda College is better described below: *Once the samples are received bags are weighed (and an empty bag), to determine the weight. Then the samples need to be oven-dried and reweighed for bulk density determination. The samples will then be sieved through a 2 mm sieve to remove large pieces of plant detritus and homogenize the soil samples. Then 1 g soil will be weighed out (careful to remove with tweezers any large pieces of plant detritus), and analyzed for Organic C using the Walkley-Black Method. Each sample will be analyzed in triplicate and the data entered in a spreadsheet.*	a) DNV GL checked the revised calculation spreadsheet and confirmed that a conservative discount factor has been applied in order to account for the % of stones in the profile volume. The discount factor was 24% in Miombo and 11% in Evergreen which DNV GL deems reasonable. Furthermore, since only the first 30 cm of the soil profile is accounted for (this might represent 60% of the total soil organic carbon in the profile) and land use conversion has an impact beyond that depth, the conservativness in the estimates is in any case ensured – OK. b) DNV GL confirmed that there is no reference in the consideration of stones in order to determine the bulk density. Usually stones are rewighted and the volume is determined. This is substracted to the overall sample. DNV GL deems that with the previous correction factor, this issue will be accounted for, yet, a FAR will be open in the verification report in order to ensure that this is corrected in future measurements. **CL9 is closed.**
CL10 **Requirement:** §8.1.4 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet, tab "2c. RR - DF, RF, DG, RG" **Clarification**: a) It is not clear why pixels that show classes that are similar as the class cloud cover from the point of view of data availability (i.e. presence of BRN, SHD, BKR) haven't been treated as cloud pixels. b) It is not clear why in "Section 4. Transition Rates (ha/yr), cloud corrected, annualized" the annual rates are increased by the % of cloud cover.	3.1.1	The classes which are neither forest nor non-forest have all been removed from calculations and are updated in the Gross Emission Reduction workbooks.	a) DNV GL checked thte GHG Emissions spreadsheet and confirmed that have been removed from the calculations – OK. b) DNV GL checked thte GHG Emissions spreadsheet and confirmed that the cloud correction has been deleted – OK. **CL10 is closed.**
CL11	3.1.1	a and b) Please see updated GER spreadsheets, these have transitions that are consistent with the	a) The audit team checked the ER calculation spreadsheet and

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
Requirement: §8.1.4 of VM0006 Version 2.0 **Evidence:** ER calculation spreadsheet, tab "3b. LUC Model Output" **Clarification**: a) Clarification is sought on why deforestation in the project area in the baseline scenario in year 1 is higher than the average deforestation rate (i.e. total deforestation in year 1 for all three sites is 59061 pixels, while the average deforestation is 58897 pixels). It is expect that the first year deforestation years are equal as the exhaustion factor is has not had any effect yet. b) Clarification is sought on why there are very step changes in the deforestation and reforestation rates (e.g. in Vwaza, deforestation in the leakage area decreases from 8702 pixels to 529 pixels in one year; intuitively this seems not to be in accordance to reality). c) A blended rate sourced from the reference region is applied to the three sites together. The data shows that the past deforestation rates in the three areas differ significantly, especially between Nkhotakota and the two other areas in the north. This may be due to the specific circumstances of each of the protected areas as confirmed during the site visit (e.g. the three areas differ from the point of view of main drivers of deforestation and also differ in other natural conditions). Hence, the application of a blended rate across the three sites without considering the specific circumstances of each site might cause bias (e.g. Higher deforestation rates seen in the northern sites might cause an overestimation of baseline deforestation if these are applied to Nkhotakota). Clarification is sought on how these differences are accounted for. d) In order to estimate areas reforested in the baseline scenario, the reforestation rate is applied to the total non-forest land. This causes a continuous increase in the annual reforested area per year, which contrasts with the continuous decrease in the annual deforested area. This would cause in the mid-term a net-increase in forest area which seems not to be		DF rates in each of the individual protected areas. c) The original calculations were based on using an area weighted average deforestation rate across all protected areas. This was done to support the methodology requirement that there is only one deforestation rate for reference region for the project, but approach was taken to overcome the technical computer memory limitations, that made it impossible to run all three protected areas together at one time. It is true that this one area-weighted DF rate could be higher or lower than the DF rate for one of the three protected areas, but with virtually one forest type, this still produced results that were unbiased. However, to address this CAR we changed our approach to both be consistent with the methodology but to work within to computer hardware and software limitations of the Project. If the technical limitations were not an issue, then the modeling of the baseline for all three areas would have been run at the same time in the land-use change model and it would have used an area weighted DF rate and it would have included a spatial variable indicating whether the DF pixel was in protected area Vwaza, Nyika or Nkhotakota. This would then ensure that the land-use change model applied the probability of deforesting each area according to its specific DF rates. To mimic the approach where all areas were run at the same time with a spatial variable for each projected area, we ran for each area separately with the DF and RF rates relevant to the specific protected area. Then the individual regressions and land-use change models were run, then the emissions for each area were aggregated for the overall project emissions. This had the effect as if we had run all the areas at the same time. After communication on March 18th this car is now closed.	confirmed that the total deforestation observed in the aggregate of leakage area and project area is equal or lower to the average of the deforestation rate observed during the historical period. – OK. b) DNV GL checked the spreadsheet and confirmed that the transitions have been smoothed in order to ensure year to year transitions that are closer to what is expected to reality – OK. c) DNV GL checked the GHG emission spreadsheet and confirmed that now independent analysis have been conducted for each of the three sites and using specific data for each of the three sites. This ensures accuracy in the deforestation model – OK. d) DNV GL checked the calculation spreadsheet and confirmed that the results of deforestation have changed. The deforested cells are subject to reforestation too which is reasonable in view of the historical data which shows that in few cases deforestation are in reality linked to seasonality issues – OK. **CL11 is closed.**

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
accurate in view of the past trends observed in Malawi or in the same region (SADC countries). Furthermore, some new deforestation might happen in already reforested land could mean an overestimation in the reforestation rates. Clarification is sought on how this issue is accounted for in the model.			
CL12 **Requirement:** §8.2.5 of VM0006 Version 2.0 **Evidence:** Document not provided **Clarification**: a) The project proponent is requested to provide the calculation spreadsheet for the cookstove project activity.	3.2.1	The calculation of cookstoves can be found in the workbook 2. Calculate emissions sources v0-6.xlsx worksheet S_Cookstove.	The calculation spreadsheet for the cookstove activity has been provided. **CL12 is closed.**
CL13 **Requirement** §3.17.1 of the VCS Standard Version 3.4 Evidence and clarification Clarification is sought on what are the provisions in order to ensure that The project documents and records are kept in a secure and retrievable manner for at least 2 years after the end of the crediting period.	4.3	Terra has created an online system Terralytics, which we use as a document repository. The repository is used and shared with project partners. In addition, hard copies are stored at the TLC office and digital scans are stored on the Terra server. These two entities have committed to the project, and will be involved through the longevity period. Text has been added to section 5.3.2 of version 4 of the PD.	The monitoring plan of the VCS PD ensures that the project documents and records are kept in a scure and retrievable manner for the project longevitiy, i.e. 60 years. Hence, this is in compliance with the VCS. **CL13 is closed.**
CL14 **Requirement:** VCS Project description template **Evidence and clarification** a) The project proponent is requested to include in the VCS PD a summary of stakeholder comments received during the LSC meetings held, including any specific request from stakeholders. b) The project proponent is requested to include in the VCS PD a short description on how it has taken into account of the comments received from local stakeholders.	6	a and b) The VCS does not require a formal process of getting stakeholder feedback, however a formal process was undertaken for the CCB. These stakeholder comments may be found on the CCB website and will be responded to as part of the validation.	a) The VCS PD has been revised. It now provides a summary of stakeholder comments received during the LSC meetings – OK. b) A short description on how these comments have been addressed has been included in the VCS PD – OK. **CL14 is closed.**
CL15 **Requirement:** ¶2.3.1 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and non-conformity**: a) During the site visit (interview in Vwaza wildlife reserve) DNV GL confirmed that in an area of Vwaza encroachment inside the	2.1 Land Ownership and Resource Access/Use Rights	See responses to CAR13.	The NPR report has been revised. Although there is an intention to revise the boundaries, this has not yet become effective as confirmed by DPW-Vwaza, so the project proponents still can demonstrate the right of use on the encroached areas. These areas do not represent a formal dispute but encroachment by drivers of deforestation and the intention of DPW to update the leagal status of those areas.

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
protected area will probably cause a redefinition of the protected area, yet seems to be not formalised. This seems to be a dispute between the DPW and local communities. The project proponent is requested to clarify whether this represents more than 5% and to discuss whether this is a dispute.			Hence DNV GL accepts that cannot be considered a dispute. **CL15 is closed.**
CL16 **Requirement:**¶2.2.2 of AFOLU Non-Permanence Risk tool: VCS Version 3.2 **Evidence and Clarification:** a) The financial projections provided applied a previous estimate of ex-ante emission reductions. Please provide an updated version of the excel spreadsheet with "conservatively projected revenues from the sale of GHG credits" as required by the tool.	Open after issuance of draft report	Please find the updated Kulera REDD Risk Validation v6-0 and Kulera financial Summary MN1 v5-0 uploaded to Terralytics.	The revised NPRR was checked and it was confirmed that it has been revised. This change has not caused any change in the project's risk. **CL16 is closed.**
CL17 **Requirement:** §8.1.1.6 ofVM0006Version 2.0 **Evidence:** VCS PD Version 5.0 **Non-Conformity**: a) The accuracy assessment results provided in the VCS PD include some LULC classes which do not appear in the GHG emissions calculation spreadsheet (i.e. MI2, SHB,GRS). Please clarify why there is such inconsistency and please provide the latest version of the confusion matrix for each of the LULC maps produced, and evidence that the values of the confusion matrix has been sourced from the results provided by the used algorithm.	Open after issuance of draft report	Post processing of classification results included a step grouping classes due to either a) insufficient accuracy of split classes (miombo MI1 combined with wet miombo MI2), or b) grouping by type (grassland GRS and shrubland SHB combined with the bare BAR non-forest class). Section 1.10.3 of the Kulera VCS Project Description lists the grouping of classes. However, our classification system reports the raw accuracies prior to the grouping of classes. Accuracy statistics from the raw output are more conservative than accuracies from the post processing grouping (lumping classes reduces error) and were considered appropriate for reporting for this reason. However, I have manually produced error matrices, see submitted document "Reclassified Matrices and Testing Data.xlsx" using the grouped classes. Since the accuracies are increased for each, I have also included a Cohens Kappa statistic to account for the increased likelihood of random agreement. Also included are worksheets with the full testing datasets including geographic coordinates. Note that the background class BCK was removed for this updated reporting. The BCK class is used to catch the off-image borders of the Landsat imagery and is disregarded for analysis.	Thank you for the clarification. CL is closed. **CL17 is closed.**
CL18 **Requirement:** §8.1.2.7 ofVM0006Version 2.0 **Evidence:** VCS PD Version 5.0 **Non-Conformity**: According to the applicable methodology "it is allowed to only use biomass inventories that are located within the project area on conditions that these plots do not cause any bias and that these plots are representative of the stratum and/or LULC of the reference region".	Open after issuance of draft report	The location of biomass plots only within protected areas do not result in bias to the project accounting since the entire Project Area is located within protected areas. The reference region is used to produce historic activity data transition matrices for establishing baseline deforestation/reforestation rates, and is not influenced by carbon stock measurements. Leakage calculations do require carbon stock estimates, however if a higher carbon density is assumed within the protected areas, values based on this applied to leakage emissions would be conservative. As observed in the field, protected areas contain higher biomass then areas outside of protected areas proving that leakage deductions are conservative. Considerable effort was made to capture the differing dynamics of deforestation/reforestation between the project area and reference regions as closed under Validation CAR5. Biomass plot locations are inside the project area, reference region, and leakage belt. The averaged	In order to confirm whether bias may exist, the audit team checked the forest inventory information and found that only 6 of the 67 plots in Miombo are located out of the protectedare(1 in Nkhotakota). The average aboveground biomass of both subsamples differ (71 vs 51 MGDM ha-1), yet the number of samples out of the protected area are not enough to conclude if these averages are statistically different. Although some bias might exist which would cause an overestimation in carbon stocks, there are two issues that would make this bias to be compensated and not to affect the emission reductions: a) one is the fact that leakage will be overestimated, so if during a monitoring period, leakage emission exist, the result

Corrective action and/ or clarification requests	Reference to Table 1/2	Response by project participants	Validation conclusion
The carbon stocks of the forest classes are based on an inventory of the project area. During the site visit and through other evidence it was seen that carbon stocks in forests within protected areas are less degraded than out of the protected areas. Please clarify how the carbon stocks within the protected area are representative of the LULC class of the reference region.		biomass per forest stratum is not biased as biomass is averaged from areas with potentially lower biomass then project area. While the majority of the plots (61) are within the project area, 25 plots are outside of the project area. We understand the hypothesized relationship described above between carbon stocks and rates of deforestation due to wood harvesting activities in miombo woodlands, however we do not understand how this applies to the accounting mechanics of VM0006. We feel that addressing deforestation rates through adjustment of the carbon density values of a forest stratum is contrary to the AD*EF method used by VM0006. Emission reductions are being calculated for the Project Areas, we believe the biomass plot locations are representative of the forest contained within the Project Areas. Differing rates of deforestation inside and outside of the protected areas was addressed in the baseline by modeling the spatial influence of a number of factors which differ inside and outside of the protected areas (including the protected area boundary itself) which resulted in the baseline distributing future deforestation preferentially outside of the protected areas. To have differing deforestation rates based on carbon density could only be accomplished under VM0006 by adopting additional strata – in this case a degraded state of miombo. However, the methodology is very clear that use of degradation strata is optional. In our case, activity data monitoring of degraded strata is simply not possible using the Landsat-based LULC classification. Additional text has been added in track changes to the VCS PD v12-0.	would be a conservative leakage accounting as the forest would not have as many as carbon stocks; b) the fact that afforestation/reforestation is accounted in the model, would make removals to be overestimated (with one reforestation event, carbon would transit in one year from no carbon stocks to high carbon stocks) which would reduce the impact of deforestation in the baseline scenario; In order to confirm the effect of these impacts, the emission factors for leakage were changed considering a carbon density of 51 MgDM ha-1 and the reforestation was affected by a factor of 1/10 assuming that it takes 10 years to reach the average carbon density (which it is still conservative). Based on these assumptions DNV GL modelled the baseline emissions and estimated the project emissions using the data available for the first verification and found that no overestimation occurs, in fact the assumption that reforestation reaches the average carbon density inmediatelly is extremely conservative and it causes in the end an underestimation of emission reductions for the first monitoring period. This occurs in the first monitoring period when no leakage occurs; in the case leakage occurs the emission reductions would be even more underestimated. Considering the impacts of these factors, DNV GL has confirmed that no overestimation of emission reductions would occur. Therefore, this CL may be closed. **CL18 is closed.**

Table 4 Forward action requests

Forward action request	Reference to Table 2	Response by project participants
Not applicable.		Not applicable.

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APPENDIX B

CURRICULA VITAE OF THE VALIDATION TEAM MEMBERS

Andrés Espejo

Mr. Espejo is a DNV GL Natural Resource Engineer with 10 years' work experience in Europe (UK, Spain and Portugal), South America (Brazil, Guatemala, Chile, Colombia, Argentina) and Africa (Republic of Congo, Uganda, South Africa, Mali, Senegal, Mozambique, Morocco, Kenya, etc.). He has extensive and direct experience in managing teams involved with forestry, natural resource valuations, forest inventory and cruising, logistics, biomass valuation and projects & domestic CO2 offset projects.

Mr. Espejo has worked as a forestry engineer for local operations in Galicia - Spain (Forest to Mill and Biomass procurement), operations in Congo Brazzaville, and maritime logistics: Forestry Inventory, valuation and appraisal of forest resources, Forest management, sylvicultural systems, Sylvicultural operations (afforestation, fertilization, liming, soil improvement,), harvesting planning, and ship fixing. Mr. Espejo also provided a FSC controlled wood audit reports of Eucalyptus Fibre Congo made for Portucel Soporcel Group. Mr. Espejo developed a Forest Management plan of HUNOSA's rural land (2.500 ha) and proposal for the creation of a CO2 DOP project.

Mr. Espejo is a senior CDM / VCS validator and verifier and has Technical Area competence in Forestry (Technical Area 14.1) and Agriculture (Technical Area 15.1) under the CDM. He has been involved in the management of more than 30 validations/verifications. Mr. Espejo has been following very closely the development of the different REDD initiatives and negotiations and has a profound knowledge of the main approved REDD/IFM methodologies, DNV GL has also followed closely the development of a system for the integration of REDD sub-national initiatives with a main REDD national initiative (i.e. nested approach) and has followed closely the development of the VCS Jurisdictional and Nested REDD+ requirements, and knows the requirements of the recently approved standard "Jurisdictional and Nested REDD+ (JNR) Requirements" (Version 3.0). Projects he has been involved with include:

- Verification of Interim REDD+ Performance indicators under the Guyana-Norway REDD+ partnership: Team Leader
- Pre-audit of regional SADC MRV system developed by GIZ
- Second periodical verification of REDD Kasigau project – Phase I (VCS Nº562) and II (VCS Nº612). Leader auditor of REDD project applying AM0009.
- First verification of CDM A/R project "Reforestation as Renewable Source of Wood Supplies for Industrial Use in Brazil" (CDM Nº2569). Leader auditor of A/R project applying AR-AM0005.
- VCS validation and verification of Mali Jatropha Curcas Plantation Grouped project (VCS Nº829). Leader auditor of A/R project applying AR-AMS0006.
- VCS validation and verification of Bukaleba Forest project (VCS Nº799). Leader auditor of A/R project applying AR-ACM0001.

Edwin Aalders

Mr Aalders has 20 years of experience as an assessor in Environmental Auditing and Policy and Management and in particular related to Climate Change. Mr Aalders started his career in SGS in 1992 were he quickly became involved in the development of new environmental certification & control services from 1999 ran the Climate Change programme of SGS. In 2004 he became the Director of the International Emission Trading Association (IETA). He acted as the first CEO for the Verified Carbon Standard Association (VCSa) between November 2007 and October 2008 and after leaving

IETA Mr Aalders in 2010, became a Partner with IDEAcarbon before joining DNV GL as at their Climate Change and Sustainable Development Department in 2011.

Mr Aalders has extensive experience with developing Climate Change strtegies and International Climate Change negotiations, which saw him being involved in the development of earlier programmes such as the ERUPT, EU ETS, CDM/JI and the more resent NAMAs. During the implementation of the EU ETS Mr Aalders was lead author in the drafting group of the EA-06 developed for the EU ETS MRV system. As Director of IETA Mr Aalders authored numerous publications and possition papers in relation to the different market based instruments. Since joing DNV GL Mr Aalders authored the various manuals on NAMA MRV and team member in the various climate change projects implemented under the different programmes i.e. CDM,JI,VCS, various ETS' and REDD+.

Mr Aalders is and has been an elected member of roster of experts for the Methodology & Accreditation Panel Expert of the CDM & JI, member of the JI Accreditation Panel, and is currently member of the VCSa AFOLU Steering Committee and the Pacific Carbon Trust Advisory Panel.