

VERIFICATION OF THE “REFORESTATION IN GRASSLAND AREAS OF UCHINDILE, KILOMBERO, TANZANIA & MAPANDA, MUFINDI, TANZANIA” PROJECT



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Summary:

This report describes the verification audit of the “Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania” project (“the project”), a reforestation project located in Tanzania, against the VCS Version 3 and all applicable requirements therein, for the monitoring period from 2 September 2012 to 27 December 2013. The verification was conducted by means of document review, follow-up interviews and site inspection, and the resolution of outstanding issues. The verification included: evaluating whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied; and assessing the collection of evidence supporting the reported data for conformity to the protocol. As part of the verification 28 findings were raised: 19 Non-Conformity Reports, eight New Information Requests and one Opportunity for Improvement. These findings are described in Appendix A of this report. In summary, the audit team is able to verify with a reasonable level of assurance that the GHG removals generated by the project, quantified in accordance with the verification criteria, amount to 66,378 tonnes CO₂ equivalent. SCS verified that the non-permanence risk rating of the proposed project activity for this verification is 10% which is to be applied to the change in carbon stocks at this verification (i.e. equal to 6,641 tCO₂e). The amount of VCUs to be issued would be 59,738 tCO₂e. There are no uncertainties associated with the verification conclusion.

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1 INTRODUCTION

1.1 Objective

The objective of the verification was to conduct an independent assessment of the "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania" project ("the project") to determine whether the quantification of GHG emission reductions or removals for the project during the period 2 September 2012 to 27 December 2013. ("the monitoring period") complies with the verification criteria, as set out in the guidance documents listed in Section 1.2 of this report.

1.2 Scope and Criteria

In accordance with Section 4.3.4 of ISO 14064-3:2006, the scope was defined as follows:

- The project and its baseline scenarios;
- The physical infrastructure, activities, technologies and processes of the project;
- The GHG sources, sinks and/or reservoirs that are applicable to the project;
- The types of GHGs that are applicable to the project; and
- The reporting period, as discussed in Section 5 of this report.

In accordance with Section 5.3.1 of the VCS Standard, the criteria for verification was the VCS Version 3, including the following documents:

- VCS Standard Version 3.4 and other relevant requirements defined by VCSA.
- AFOLU requirements: VCS Version 3.4;
- AFOLU Non-Permanence Risk tool: VCS Version 3.2; and
- The CDM methodology AR-AM0005 Version 3.0, which is approved for use under the VCS Program.

Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document.

In addition, the assessment was performed against the requirements of the validated project description.

1.3 Level of Assurance

The verification report expresses a conclusion with a reasonable level of assurance about whether the reported net anthropogenic GHG removals data is free from material misstatement. SCS applied a materiality threshold of 5% with respect to omission or misstatements concerning reported quantities as per VCS standard 5.3.1 4).

1.4 Summary Description of the Project

Project Proponents (Parties):	- Green Resources Ltd - Green Resources AS
Title of project activity:	Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania
Baseline and monitoring methodology	AR-AM0005 Version 3.0
Location of the project activity	The project activity is located in East Africa, in the United Republic of Tanzania. The two discrete project areas of land (Uchindile and Mapanda) are found in the southern highlands of the country. Uchindile lies in Kilombero district, Morogoro Region and Mapanda is in Mufindi district, Iringa Region.
Project's crediting period:	1 January 2002 to 31 December 2101
Period verified in this verification:	2 September 2012 to 27 December 2013

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification was performed through a combination of document review, interviews with relevant personnel and on-site inspections, as discussed in Sections 2.2 through 2.4 of this report. At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5, findings were issued to ensure that the project was in full conformance to all requirements.

Prior to conducting the site visit activities, the audit team created a sampling plan to determine the areas with the greatest risk of material error. These included the new forest inventory conducted from end of 2013. The audit team then created a verification agenda that took the sampling plan into account.

2.2 Document Review

The monitoring report (version 02 dated 4 May 2014) was carefully reviewed for conformance to the verification criteria.

The following documents provided by project proponents have been used as direct sources of evidence for the verification conclusions:

Document name	Ref.
Green Resources Limited: <i>VCS Monitoring Report (MR) for project activity "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania" in Tanzania</i> , version 01 dated 17 January 2014 reviewed during the desk review and version 02 dated 4 May 2014	/1/
Green Resources Limited: <i>Non-permanence risk report: VCS version 3</i> , version 2.0, 4 May 2014	/2/
Green Resources Limited: <i>VCS Project Document (PD) for project activity "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania" in Tanzania</i> , version 6.0 dated 7 July 2009	/3/
Green Resources Limited. Monitoring Reports and Loss Event report of previous monitoring periods: - Monitoring Report dated 2 September 2010 (Period: 01/01/2002 – 30/11/2008) - Monitoring Report dated 1 May 2013 (Period: 01/12/2008 – 01/09/2012) - Loss event report dated 20 October 2011	/4/
Green Resources Limited. GIS data and information: - ESRI Shapefiles with information on compartments, sub-compartments and stratification - ESRI Shapefiles with project boundaries and PSP locations	/5/
Green Resources Limited. Various financial information and data: - GR Annual Report and financial statements 2012 - Sales confirmation for Glyphosate, 6 November 2013 - GR long-term plan showing expected cash-flows in period 2014-2025 for Green Resources Limited, January 2014 - Data on prices of pick-up, truck and tractor, 9 December 2013 - Vehicle leasing agreement, 16 January 2014	/6/

Document name	Ref.
- GRL Forest Plantation Unit Tasks, January 2014	
Green Resources Limited. Standard Operating Procedures (SOPs): - Inventory Guideline for GRAS_Updated 130130 - SOP 16 Generating Permanent Sample Plots Coordinates - SOP 17 Boundary Measurement and Survival Checking - SOP 20 Permanent Sample Plot Establishment - SOP 22 Temporary Sample Plot Measurement - SOP 13 Pests and Diseases Monitoring Schedule - Fire Management Guideline	/7/
Green Resources Limited. Field Inventory data sheets:	/8/
Green Resources Limited. ER and Forest Inventory spreadsheet • Carbon model. • Long-term average in carbon stocks model	/9/
Green Resources Limited. Information regarding forest fire monitoring: • Report with forest fire statistics extracted from microforest database. • Fire incidence report at Uchindile plantation in 12 September 2013 • Volume estimate of burned compartments	/10/
Tree Farms AS. 2005. Business plan for Green Resources Ltd. Submitted to the Tanzanian Investment center, Dar Es Salaam, Tanzania	/11/
Ministry of Lands of Tanzania: • Certificate of occupancy 8954-MBYLR related to farm 854 at Chogo Village (Mufindi District) - Mapanda project area, 99 years from 1 July 2003 • Certificate of occupancy 8955-MBYLR related to farm 837 at Chogo and Mapanda Villages (Mufindi District) - Mapanda project area, 99 years from 1 July 2003 • Certificate of occupancy 50742 related to farm 308 at Uchindile Villages (Kilombero District) – Uchindile project area, 99 years from 1 April 2000 • ESRI Shapefiles with location of beacons and boundaries for Uchindile and Mapanda • List of coordinates of Uchindile forest plantation, 31 January 2000	/12/
Mapanda and Chogo Villages: Land Use plans for Chogo (2013-2023) and Mapanda (2011-2021)	/13/
Green Resources Limited. Pest and diseases inspection reports dated July 2004, November 2006, September 2007, August 2009, and October 2012	/14/
SGS: FSC forest management certification report, 8 August 2013	/15/
Green Resources AS. GRAS and subsidiaries employee handbook, August 2011	/16/
Green Resources Limited. Example of weekly report used to monitor forest establishment and management operations, Number 6 2014	/17/
GOVERNMENT NOTICE No 433 Published on 29 November 2013. THE FOREST (AMENDMENT) REGULATIONS, 2013	/18/
Green Resources Limited. Evidence of submission of financial plans to government: • GRL Letter to Kilombero DC on UMFP Carbon Projects LTD Plans 140430 • GRL Letter to Mufindi DC on UMFP Carbon Projects LT Plans 140430	/19/

Document name	Ref.
GRL Letter to Mufindi DED on UMFP Carbon Projects LT Plans 140430	

The following documents served as supporting documents in order to reach a verification conclusion and they relate to background documents and applicable methodologies, tools and standards:

Document name	Ref.
CDM Executive Board: <i>Methodology</i> AR-AM0005 "Afforestation and reforestation project activities implemented for industrial and/or commercial uses", Version 3.0	/20/
CDM Executive Board: 'Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks' (version 2), Annex 23, EB50	/21/
CDM Executive Board: 'Guidelines on accounting of specified types of changes in AR CDM project activities from the description in registered PDD' (version 02.0), Annex 24, EB66	/22/
CDM Executive Board: 'Guidelines on application of specified versions of AR CDM methodologies in verification of registered AR CDM project activities' (version 01.1), Annex 31, EB68	/23/
CDM Executive Board: 'Guidelines on conditions under which GHG emissions from removal of existing vegetation due to site preparation are insignificant' (version 1), Annex 21, EB50	/24/
VCSA: VT0001 – "Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" (Version 3.0), 1 February 2012	/25/
VCSA: VCS standards: VCS Standard Version 3.4, 8 October 2012	/26/
VCSA: AFOLU Non-Permanence Risk tool: VCS Version 3.2, 4 October 2012	/27/
VCSA: 'Program Definitions: VCS Version 3.5', 8 October 2012	/28/
VCSA: AFOLU requirements: VCS Version 3.4, 8 October 2012	/29/
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	/30/
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	/31/
VCSA: <i>Validation and Verification Manual</i> Version 3.0	/32/
INDUFOR. 2008. Tanzania Forest Conservation and Management Project - Provision of Consultancy Services for Implementation of Private Sector Involvement Activities - Part V - YIELD MODELS.	/33/
Bryce J.M., The Commercial Timbers of Tanzania, revised edition of 1999.	/34/
ESRI : Change matters – On-line visor showing NDVI change between 1975 and 2000, http://changematters.esri.com/compare	/35/
IPCC, 2003: <i>Good Practice Guidance for Land Use, Land-Use Change and Forestry</i> , 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/gpoglulucf/gpoglulucf.html	/36/
Forest Carbon Partnership Facility: http://www.forestcarbonpartnership.org/fcp/	/37/
UN-REDD programme: http://www.un-redd.org/	/38/

Document name	Ref.
TUV-SUD. Validation and Verification Reports of previous monitoring periods: - Validation Report dated 17 July 2009 - Verification Report of period dated 04 August 2010 (Period: 01/01/2002 – 30/11/2008) - Verification Report of period dated 22 July 2013 (Period: 01/12/2008 – 01/09/2012)	/39/
The Gold Standard Foundation: Gold Standard project registry http://www.goldstandard.org/about-us/project-registry	/40/
UNFCCC: Project database http://cdm.unfccc.int/Projects/projsearch.html	/41/

2.3 Interviews

Interviews constituted an important component of the audit process. In the period from 19 February 2014 to 23 February 2014 the audit team conducted various interviews with the project proponent's staff, staff of other project entities involved in the project, and other stakeholders such as Kilombero and Mufindi District Executive Directors. The list of interviewed persons is detailed as follows:

Date	Name	Organization	Topic
19 and 22 February 2014	John Chekure (District Plantation Manager)	Green Resources Limited	- Forest fires and integrated plan
19 and 22 February 2014	Erlend Hauger (Group Controller)	Green Resources AS	- Financials
19 and 22 February 2014	Geofrey Kazaula (Land acquisition and Mapping)	Green Resources Limited	- Right of use - Existence of disputes
19 February 2014	Victor Kimey (Community Manager)	Green Resources Limited	- Compliance with local laws and regulations - FSC certification
19-22 February 2014	Anthony Kisonde (Inventory and Mapping)	Green Resources Limited	- Monitoring of compartment areas - Forest inventory - Monitoring of forest implementation and management
19 and 22 February 2014	Roselyne Mariki (Managing Director)	Green Resources Limited	- Green Resources Limited organisation - Compliance with local laws and regulations
19-23 February 2014	Isaac Mapunda (Senior Inventory Officer)	Green Resources Limited	- Monitoring of compartment areas - Forest inventory
19-23 February 2014	Ana Meyer (Carbon Manager)	Green Resources AS	- GHG removals calculations

Date	Name	Organization	Topic
19 February 2014	Veneranda Msemwa (Planning Manager)	Green Resources Limited	- Project implementation - Applied technologies - Monitoring of forest implementation and management
19-23 February 2014	Jakob Sandven (Mapping and inventory Manager)	Green Resources AS	- Monitoring of compartment areas - Forest inventory - Monitoring of forest implementation and management
19-22 February 2014	Jimton Titia (Mapping and Inventory)	Green Resources Uganda	- Monitoring of compartment areas - Forest inventory - Monitoring of forest implementation and management
27 February 2014 9 May 2014	Mrs. Azimina Mbilinyi (Executive Director)	Kilombero District	- Confirmation of right of use - Confirmation on existence of disputes in Uchindile - Confirmation regarding reception of management plans and financial plans covering the whole project longevity period
27 February 2014 9 May 2014	Mrs. Evarista Kalalu (Mufindi District Commissioner)	Mufindi District	- Confirmation of right of use - Confirmation on existence of disputes in Mapanda - Confirmation regarding reception of management plans and financial plans covering the whole project longevity period

2.4 Site Inspections

The objectives of the on-site inspections performed were to:

- Select samples of data from on-the-ground measurements for verification in order to meet a reasonable level of assurance and to meet the materiality requirements of the project, as required by Section 5.1.3 of the VCS Standard;

- Perform a risk-based review of the project area and project activities to ensure that the project conformed to the requirements of the VCS rules and the methodology throughout the monitoring period; and
- Ensure that monitoring was conducted in accordance with the requirements of the validated monitoring plan, the methodology employed and the VCS rules.

In fulfilment of the above objectives, the audit team performed an on-site inspection of the project area on the dates from 20 February 2014 to 22 February 2014. The main activities undertaken by the audit team were as follows:

- An assessment of the implementation and operation of the project activity through visual inspection and through interviews with the project proponent's staff. Project boundaries and the stand information were assessed using a Pocket PC with the geographic information uploaded and connected to a GPS receiver;
- Revisiting of 21 randomly selected inventory sampling plots which were re-measured by the project proponent's staff under observation of the audit team. While the project proponent was carrying out the re-measurement, the audit team verified that the operational and data collection procedures were implemented in accordance with the monitoring plan of the VCS PD and verified the information flows for generating, aggregating and reporting the monitoring parameters. Furthermore, the monitoring equipment was checked in order to confirm that the monitoring practices followed the requirements of the PD and the applicable methodology. Furthermore, the audit team performed a consistency check in order to verify the consistency of the previous measurement and the re-measurement, and to verify the correctness of the reported stand growth. Moreover, the 21 field cards were compared with the data base in order to confirm if transfer check errors were material;
- Confirmation that the quality control and quality assurance procedures were in place; and
- Interviewed project personnel to confirm the appropriateness of the non-permanence risk score claimed for the project.

2.5 Resolution of Findings

Any potential or actual material discrepancies identified during the assessment process were resolved through the issuance of findings. The types of findings issued by SCS were characterized as follows:

Non-Conformity Report (NCR): An NCR signified a material discrepancy with respect to a specific requirement. This type of finding could only be closed upon receipt by SCS of evidence indicating that the identified discrepancy had been corrected. Resolution of all open NCRs was a prerequisite for issuance of a verification statement.

New Information Request (NIR): An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an NIR did not necessarily indicate that the project was not in compliance with a specific requirement. However, resolution of all open NIRs was a prerequisite for issuance of a verification statement.

Opportunity for Improvement (OFI): An OFI indicated an area that should be monitored or ideally, improved upon. OFI's were considered to be an indication of something that could become a non-conformity if not given proper attention, and were sometimes issued in the case that a non-material discrepancy was identified. OFIs were considered to be closed upon issuance.

As part of the verification 19 NCRs, eight NIRs and one OFI were issued. All findings issued by the audit team during the verification process have been closed. In accordance with Section 5.3.6 of the VCS Standard, all findings issued during the verification process, and the inputs for their closure, are described in Appendix A of this report.

2.5.1 Forward Action Requests

A forward action request (FAR) is issued for actions if the monitoring and reporting require attention and/or adjustment for the next monitoring period. No Forward Action Requests have been issued by SCS. While Opportunities for Improvement (OFI) (see above) have been issued, these findings do not require further action or adjustment by the project proponent in the next monitoring period.

2.6 Eligibility for Validation Activities

SCS is accredited for conducting validation of AFOLU projects, so this section is not applicable.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

This is not applicable.

3.2 Methodology Deviations

Two methodology deviations were identified in the MR. The following table provides a description of these methodology deviations and their assessment of conformity with VCS requirements:

Description of deviation	Assessment of conformity
According to AR-AM0005 Version 3, the number of sample plots for monitoring of carbon stocks has to be designed in order to reach a maximum relative margin error of 10% at the 95% confidence level. The project has deviated from this monitoring requirement by setting the maximum permissible relative error equal to 10% at the 90% confidence level.	The audit team deems this to be an acceptable deviation as it relates to the maximum statistical precision required for estimating the average carbon stocks and is therefore a deviation from the criteria and procedures relating to monitoring as set out in the methodology. Moreover, the audit team agrees that this does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals, as the applied maximum permissible relative error is still in compliance with the statistical requirements set out in Section 4.1.4 of the VCS Standard. Hence, the estimates are within the precision thresholds as defined by the VCS Standard. Moreover, the audit team confirmed that this change in the maximum allowable relative error is an accepted methodology deviation for CDM methodologies as specified in the 'Guidelines on application of specified versions of AR CDM methodologies in verification of registered AR CDM project activities' (version 01.1). Therefore, the audit team is able to confirm that this is a valid deviation.
AR-AM0005 Version 3 provides a list of parameters to be monitored which includes calculated parameters or parameters appearing as intermediate values in calculation steps. The project deviates from this requirement by not monitoring calculated parameters or parameters appearing as intermediate values. Only measured parameters and those taken from existing sources are monitored.	The audit team this to be an acceptable deviation as it is a deviation from the criteria and procedures relating to monitoring as set out in the methodology and it does not affect the conservativeness of the quantification of GHG benefits as the deviation seeks not to report unnecessary parameters which do not have any influence on the estimation of GHG benefits.

	Moreover, the audit team confirmed that not reporting on these parameters is an accepted methodology deviation for CDM methodologies as specified in the 'Guidelines on application of specified versions of AR CDM methodologies in verification of registered AR CDM project activities' (version 01.1). Therefore, the audit team is able to confirm that this is a valid deviation.
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In view of the above, the audit team is able to confirm that the proposed methodology deviations are acceptable deviations as set by the VCS Standard.

3.3 Project Description Deviations

Five project description deviations were identified in the MR, which had been already applied in previous monitoring periods and described in previous monitoring reports. The following table provides a description of these project description deviations and their assessment of conformity with VCS requirements:

Description of deviation	Assessment of conformity
The Monitoring Plan (MP) of the registered PD included a list of parameters that were not required to be monitored by the applicable methodology. Some of these parameters, as described in Section 2.2.2 of the MR, are no longer monitored as they are not relevant for monitoring GHG benefits.	The audit team deems this to be an acceptable deviation as it is a deviation to the MP of the registered PD and not a deviation from the project design described in the PD. Hence, this deviation does not affect the applicability of the methodology, additionality or the appropriateness of the baseline scenario. The audit team also confirms the deviation is appropriately described and justified in the MR, and that the project remains in compliance with the VCS rules.
The MP of the registered PD included a list of parameters that were not required to be monitored or be set by the applicable methodology. Some of these parameters, as described in Section 2.2.2 of the MR, are relevant for monitoring GHG benefits and were set in the registered PD as "available at validation", yet these were parameters that are monitored in the project.	The audit team deems this to be an acceptable deviation as it is a deviation to the MP of the registered PD not a deviation from the project design described in the PD. Hence, this deviation does not affect the applicability of the methodology, additionality or the appropriateness of the baseline scenario. The audit team also confirms the deviation is appropriately described and justified in the MR, and that the project remains in compliance with the VCS rules.
The MP of the registered PD states that for the estimation of carbon stocks, all tree heights will be measured in every Permanent Sampling Plot	The audit team deems this to be an acceptable deviation as it is a deviation to the MP of the registered PD not a deviation from the project

(PSP). However, as required by the allometric equation employed to estimate the commercial volume per tree, which includes as independent variable the Dominant Height defined as the average heights of the 100 largest trees per ha, only heights of the four largest trees per PSP are measured.	design described in the PD. Hence, this deviation does not affect the applicability of the methodology, additionality or the appropriateness of the baseline scenario. Moreover, the audit team confirmed that the this deviation is acceptable for CDM methodologies as determined by the 'Guidelines on accounting of specified types of changes in AR CDM project activities from the description in registered PDD' (version 02.0). Therefore, the audit team is able to confirm this is a valid deviation. Moreover, the audit team confirms the deviation is appropriately described and justified in the MR, and that the project remains in compliance with the VCS rules.
According to Section C.7 of the PD, baseline net GHG removals are assumed to be in a steady state, therefore, these are zero. However, the registered PD provided ex-ante estimates of baseline net GHG removals, which are in reality emissions from potential removal of existing vegetation/isolated trees. In the MR of the first monitoring period /4/, these emissions were determined to be insignificant following the 'Guidelines on conditions under which GHG emissions from removal of existing vegetation due to site preparation are insignificant' (version 1) as were set to zero.	The audit team deems this to be an acceptable deviation as it is a deviation not related to the project design as described in the registered PD. Hence, this deviation does not affect the applicability of the methodology, additionality or the appropriateness of the baseline scenario. Therefore, the audit team is able to confirm this is a valid deviation. Moreover, the audit team confirms the deviation is appropriately described and justified in the MR, and that the project remains in compliance with the VCS rules.
According to the registered PD, the project would target planting 7,252 ha in Uchindile and 6,258 ha in Mapanda. In the MR of the second monitoring period /4/, approximately 5,054 ha were excluded from Uchindile as a consequence of a land dispute with the Ministry of Natural Resources and Tourism of Tanzania.	The audit team deems this to be an acceptable deviation as it is a deviation to the project design which does not affect the applicability of the methodology, additionality or the appropriateness of the baseline scenario as it is a reduction in the project area which does not affect any of the above, i.e., the methodology is applicable to all of the area originally contained within the project area, additionality was demonstrated through the existence of barriers which is not affected by the size of the activity, and the identified baseline was the same for all of the area originally contained within the project area. Moreover, the audit team confirmed that the this deviation is acceptable for CDM methodologies as determined by the 'Guidelines on accounting of specified types of changes in AR CDM project

	activities from the description in registered PDD' (version 02.0). Therefore, the audit team is able to confirm that this is a valid deviation. Moreover, the audit team confirms the deviation is appropriately described and justified in the MR, and that the project remains in compliance with the VCS rules.
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In view of the above, the audit team is able to confirm that the proposed project description deviations are acceptable deviations as set by the VCS Standard. Furthermore, the audit team is able to confirm all deviations are appropriately described in the PD and that the project remains in compliance with VCS rules.

3.4 Grouped Project

This is not a grouped project; therefore, this is not applicable.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

4.1.1 *Implementation status of the project activity(s)*

In order to verify the implementation status and the project boundaries reported in the MR, the audit team conducted an on-site inspection and multiple interviews as described in Sections 2.3 and 2.4 of this verification report. The audit team confirmed that the implementation is in accordance with that stated in the PD, and that no additional project description deviations apart of those described in Section 3.3 were present.

Furthermore, the audit team confirmed that the project boundary changed since validation but that changes were limited to the reduction in project area as described in Section 2.2 of the MR. This was confirmed through checking the latest version of the project boundary ESRI Shapefiles (SHP) /5/ against other existing information such as the title deeds /12/. Therefore, the audit team is able to confirm that the project proponent has established control on the whole project area as required by Section 3.4.2 of the AFOLU requirements: VCS Version 3.4.

Hence, the audit team is able to confirm that the project implementation is in accordance with the project description contained in registered PD of 7 July 2009.

4.1.2 *Implementation status of the monitoring plan and the completeness of monitoring*

The audit team checked the monitoring plan contained in the registered PD of 7 July 2009 and compared it with the MR Version 02 of 4 May 2014, to verify whether there was any difference that would cause an increase in estimates of the GHG emission reductions in the current monitoring period. The audit team confirmed that the implementation is in accordance with that stated in the monitoring plan of the PD, and that no additional project description deviations apart of those described in Section 3.3 were present.

Monitoring of forest establishment and management

The audit team confirmed that the monitoring of the forest management has been carried out in accordance with the monitoring plan contained in the registered PD. As confirmed by the audit team, forest establishment and management activities are monitored following the specific relevant Standard Operating Procedures (SOPs). These SOPs provide detailed instruction for all activities, indicating clearly how to record the activity and how to report it to the plantation manager who is responsible of entering the data in the Microforest database. As shown during the site visit, the project proponent effectively monitors all forest establishment and management activities and records all the activities conducted at the compartment and subcompartment levels. Therefore, the monitoring of the forest management has been carried out in accordance with the MP contained in the registered PD.

Monitoring of the actual net GHG removals by sinks

The monitoring has been carried out in accordance with the revised monitoring plan and formulae contained in the registered PD of 7 July 2009 /3/.

As required by the MP of the registered PD and the applicable methodology AR-AM0005 Version 3.0 the project proponent effectively monitors the required parameters to determine the project's removals by sinks and emissions by sources. The parameters reported, including source, frequency and review criteria as indicated in the monitoring plan were verified to be correct and in line with the registered MP of the PD. Necessary management system procedures including responsibility and authority of monitoring activities

have been verified to be consistent with the PD. Knowledge of personnel associated with the project activity was also found to be satisfactory.

4.1.3 Inclusion under other programs and existence of other forms of environmental credit

The audit team checked the CDM project database / and the Gold Standard project registry /40/ and is able to confirm that this project is not registered or has been rejected under the two other main GHG programs for this type of activity. Furthermore, the audit team is able to confirm that this project is not part of an emission reduction trading program, as there is no such program currently in Tanzania.

Moreover, the audit team is able to confirm that the project activity does not generate another form of environmental credit.

4.1.4 Previously validated methodology deviations

Any previously validated methodology deviation is listed in Section 3.2 of this report.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

4.2.1 Baseline emissions and removals

According to section C.7 of the PD, baseline net GHG removals are assumed to be in a steady state. Hence, the baseline net GHG removals are zero. However, the PD still reported some ex-ante estimates, these being, in reality, emissions from potential removal of existing vegetation/isolated trees, i.e., existing carbon stocks. In the MR of the first monitoring period /4/, these emissions were determined to be insignificant following the 'Guidelines on conditions under which GHG emissions from removal of existing vegetation due to site preparation are insignificant' (version 1) and were therefore set to zero. This deviation has been reported and assessed in Section 3.3 of this report.

Hence, the baseline removals = 0 tCO₂.

4.2.2 Project emissions and removals

The project emissions and removals or, as called in CDM methodologies, actual net GHG removals by sinks ($C_{ACTUAL,t}$), are equal to the average annual change in carbon stock in living biomass of trees for stratum i ($\Delta C_{i,t}$) minus the GHG emissions by sources within the project boundary as a result of the implementation of the project ($GHG_{E,t}$). Considering that the only project emissions are emissions due to biomass burning (i.e. forest fires), the actual net GHG removals by sinks would be expressed as follows:

$$\Delta C_{ACTUAL,t} = \sum_{i=1}^I \Delta C_{i,t} - E_{BiomassBurn,CH_4,t}$$

Changes in carbon stocks

Considering the BEF method and equations from M.3-M.5, M.11 – M.14 and M.15 – M.18 of the applicable methodology, considering that this is the third verification (i.e. monitoring period 3 = m_3), the actual net GHG removals by sinks (C_{ACTUAL}) could be expressed using the following equation:

$$\sum_{i=1}^I \Delta C_{i,t} = \left[\sum_{i=1}^I \frac{A_{i,m3}}{P_i \times AP} \times \left(\sum_{p_i=1}^{P_i} \sum_{tr=1}^{TR} V_{ij,m3} \times D_j \times BEF_j \times (1 + R_j) \times CF_j \right) \times \frac{44}{12} \right] - C_{m2}$$

The parameters of this equation were verified as follows:

- $A_{i,m3}$: Area of stratum i , time m_3 (the current verification); ha. Planted areas are monitoring through specific Standard Operating Procedures (SOPs) /7/ which provide instructions for the measurement of new planted areas and their inclusion in a forest management database which has an integrated Geographic Information System (GIS). The audit team confirmed during the site visit that these SOPs were adequately implemented and that the project staff effectively monitors the project area. Furthermore, it was confirmed that sufficient QA/QC procedures are in place, such as internal audits or different levels of quality control (e.g., by personnel such as the inventory manager). In order to verify the reported values, the audit team verified the data collected and confirmed that the verified data collected was actually used to estimate the GHG benefits. The correctness of the collected information was checked by comparing the geographical information provided in the form of ESRI Shapefiles (SHP) with reference data such Very High Resolution (VHR) imagery and through on-site verification using a GPS receiver and a mobile GIS. Furthermore, consistency checks were conducted between the compartment species and planting age information in the database and the Permanent Sampling Plot (PSP) information. Moreover, the procedures for data transfer were confirmed to be sound through confirmation that data used in the calculation of GHG benefits was sourced from the verified SHP.
- P_i : Total number of plots in stratum i ; dimensionless.
- AP : Area of plot, ha. This variable is in reality implicit in the volume equation which provides estimates in a volume-per-ha basis, so in the above equation should have a value of 1, yet it is used to estimate the number of stems per ha for each PSP, which is one of the independent variables required by the stand volume equation. The plot area used in the forest inventory is 400 m² as required by the existing SOPs /7/. The audit team confirmed that SOPs were correctly implemented: PSPs are circular and the vertex hypsometer is used in order to determine the distance of trees to the plot center. In case of borderline trees, a measuring tape is used in order to determine exactly if the tree is in or out. In order to verify the data, the audit team required the project staff to re-measure 21 PSPs and confirmed that some trees were erroneously excluded or included, but that this error was of random nature and that it was in any case immaterial, i.e. errors compensated each other so the overall bias was negligible. The audit team confirmed that this plot size has been used in the GHG removal calculation spreadsheet in a consistent manner.
- $V_{i,j,m3}$: Stem volume per tree in stratum i , species j ; m³/tree at monitoring time m_3 (the current verification). The project does not use a tree but a stand volume equation which provides volume per ha directly. Volume equations for both Pinus sp. and Eucalyptus sp. are sourced from Indufor (2008) /33/, who conducted a specific study for Tanzania which was tasked by the Ministry of Agriculture. These volume equations use as independent variables the average DBH, the number of stems per ha and the dominant height (i.e. defined as the 100 largest trees per ha), and they are applied to each PSP in order to estimate the stand volume in m³ per ha. Measurement of these variables (i.e. Diameter at Breast Height (DBH), Tree height) is done following specific SOPs /7/. In order to verify the data, the audit team required the project staff to re-measure 21 PSPs verifying if the SOPs were correctly implemented and comparing the newly measured values with previous measurements. The low bias and Root Mean Squared Error (RMSE) for both DBH and heights (i.e. -4.6% and 7.9% respectively for DBH, -7.1% and 16.6% respectively for height) confirms that the height and DBH values as measured during the site visit were generally higher than the values measured during the original inventory, which is logical considering the lag of more than 2-5 months between measurements. Furthermore, a verification of transfer errors was conducted in order to identify any data transfer errors. The low bias observed (i.e. 0.8% for DBH and 1.2% in heights)

confirmed the overall quality in the data transfer. The audit team estimated the average difference between the values reported by the project proponent and obtained in the re-measurement and confirmed that the difference was statistically less than zero, indicating that the inventory has underestimated carbon stocks in comparison with the reference values, which is logical considering the lag of 2-5 months between both measurements. Moreover, the audit team checked the GHG benefit spreadsheet and confirmed that the monitored and verified values have been correctly applied to the volume equations and that the volumes per ha of each PSP have been correctly propagated to all strata and then to all the area.

- D_j : Basic wood density of species j ; t d.m. m^{-3} . The project has sourced the basic density values for Eucalyptus sp. (0.428 t/m³) and for Pinus sp. (0.366 t/m³) from Bryce (1999) /34/. These estimates are in compliance with Section 3.1.5, Section 4.1.7(1) and Section 4.5.6 of the VCS Standard as they are default values sourced from a credible study published by the Tanzania Forestry Research Institute which is a government institution. The audit team confirmed that these values have been used in the final GHG benefit spreadsheet.
- BEF_j: Biomass expansion factor for conversion of stem biomass to above-ground tree biomass for species j ; dimensionless. The audit team confirmed that the estimates used by the project have been conservatively derived from 2003 IPCC LULUCF GPG /36/ values following the 'Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks' (version 2): 2.7 for broadleaf species and 1.25 for conifers. Section III.10 of the applicable methodology requires the use of these guidelines to derive conservative values from 2003 IPCC LULUCF GPG, therefore, the applied values are in compliance with the applicable methodology. Moreover, these estimates are in compliance with Section 3.1.5, Section 4.1.7(1) and Section 4.5.6 of the VCS Standard as they are default values sourced from the 2003 IPCC LULUCF GPG.
- CF_j: Carbon fraction of biomass for tree species j ; t C t⁻¹ d.m.; IPCC default value = 0.5; t C (t d.m.)⁻¹ as per the applicable methodology. The audit team confirmed that this value has been correctly applied.
- R_j: Root-shoot ratio appropriate for biomass stock, for species j ; dimensionless. The audit team confirmed that the applied root-to-shoot ratio values are sourced from the 2003 IPCC LULUCF GPG and that are consistent with the values used in the PD: Pinus sp.: 0.46 (Aboveground biomass < 50 t d.m./ha), 0.32 (Aboveground biomass 50-150 t d.m./ha); Eucalyptus sp.: 0.45 (Aboveground biomass < 50 t d.m./ha), 0.35 (Aboveground biomass 50-150 t d.m./ha) and 0.2 (Aboveground biomass >150 t d.m./ha).
- C_{m2}: Carbon stocks at the end of the previous monitoring period. This is equal to 316,320 tCO₂ which is equal to the sum of the existing carbon stocks at the beginning of the crediting period (i.e. the project start date is prior to the start date of the crediting period) and the change in carbon stocks reported in the MR of the first and second monitoring periods. The audit team checked the previous MRs /4/ and confirmed that the values of stocks were correctly sourced and used in the calculation of GHG benefits.

Considering the above values the change in carbon stocks or carbon removals are equal to 66,406 tCO_{2e}.

Project emissions

Considering equations M.25 and M.26, project emissions would be estimated as follows:

$$E_{\text{BiomassBurn,CH}_4,t} = \sum_{i=1}^I A_{\text{burn},i,t} \times B_{i,t} \times PP_{i,t} \times CE \times CF \times EF_{\text{CH}_4} \times GWP_{\text{CH}_4} \times \frac{16}{12}$$

The parameters of this equation were verified as follows:

- $A_{\text{burn},i,t}$: Annual area affected by biomass burning in stratum i, species j, substratum k; ha yr⁻¹ in year t (the current verification); ha. Burned areas consist of areas affected by wild fires as no burning was associated with site preparation or harvesting operations. Monitoring of these areas is done through specific Standard Operating Procedures (SOPs) /7/ which provide instructions for the measurement of forest fire events and their inclusion in a forest management database which has an integrated Geographic Information System (GIS). The audit team confirmed during the site visit that these SOPs were adequately implemented and that the project staff effectively monitors burned areas. Furthermore, it was confirmed that sufficient QA/QC procedures are in place, such as internal audits or different levels of quality control (e.g., by personnel such as the inventory manager). In order to verify the reported values, the audit team verified the existing records and confirmed that the verified data collected were actually used to estimate the GHG benefits. According to these records, fires during the monitoring period affected a total area of 136.1 ha, i.e., 7.6 ha in stratum of Pinus planted in 2009-2010 and 128.5 in stratum Pinus planted in 2011-2013.
- $B_{i,t}$: Average above-ground biomass before burning for stratum i; tonnes d.m. ha⁻¹. The assumed value for the stratum of Pinus planted in 2009-2010 was estimated from the forest inventory which was verified by the audit team. For the stratum of Pinus planted 2011-2013, since this stratum was not measured or reported in this monitoring period, the volume was estimated using volume tables.
- $PP_{i,t}$: Proportion of biomass burned, dimensionless. The project has assumed that 100% of the aboveground biomass within burned areas was consumed, which is conservative.
- CE : Combustion efficiency; dimensionless. The project has applied the default value recommended by the methodology which is sourced from the 2003 IPCC LULUCF GPG, i.e. 0.5.
- CF : Carbon fraction of dry matter; tonnes C (tonne d.m.)⁻¹. IPCC default value = 0.5; t C (t d.m.)⁻¹ as per the applicable methodology. The audit team confirmed that this value has been correctly applied in the calculation of GHG benefits.
- EF_{CH_4} IPCC default emission ratio for CH₄ of biomass burning; t C as CH₄ (t C burned)⁻¹. The project has applied the default value recommended by the methodology which is sourced from the 2003 IPCC LULUCF GPG, i.e. 0.012. The audit team confirmed that this value has been correctly applied in the calculation of GHG benefits.
- GWP_{CH_4} Global warming potential for CH₄; t CO₂-e (t CH₄)⁻¹. The project has applied the default value recommended by the methodology for the first commitment period, i.e. 21. The audit team confirmed that this value has been correctly applied in the calculation of GHG benefits.

Considering the above values the project emissions are equal to 28 tCO₂e. Moreover, considering the above values the project emissions and removals or actual net GHG removals by sinks (ΔC_{ACTUAL}) are equal to **66,378 tCO₂e**.

Moreover, the audit team checked if the accumulated issued GHG credits is still below the long-term average GHG benefits as calculated according to Section 4.5.5 of the AFOLU Requirements. The audit team checked the calculation spreadsheet with the long-term calculation and confirmed that the

assumptions made are conservative or accurate. According to this spreadsheet the long-term average is equal to 815,254 tCO₂, which is still above the existing carbon stocks at the end of the current monitoring period, i.e. 382,726 tCO₂. Hence, the audit team is able to confirm that the project is still below the cap required by Section 3.1.9 of the AFOLU Requirements.

4.2.3 Leakage

According to the applicable methodology AR-AM0005 Version 3.0 leakage emissions are assumed to occur as a result of increased emissions from displacement of collection of fuelwood and of the displacement of grazing activities to areas outside the project that lead to deforestation and land use change to grazing lands. The audit team confirmed that these emissions were demonstrated to be de-minimis in the registered PD and were assumed to be zero.

Moreover, as assessed in Appendix B of this report, market leakage is equation to zero.

Therefore, leakage emissions are equal to **0 tCO₂**.

4.2.4 Net anthropogenic GHG emissions

The net anthropogenic GHG emission reductions in the monitoring period 2 September 2012 to 27 December 2013 is equal to 66,378 tCO₂e.

Hence, in view of the above, the audit team is able to confirm the accuracy of the estimation of net anthropogenic GHG removals to be issued.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

No significant reporting risks have been identified for the data reported. All the data required for net anthropogenic GHG removals or emissions calculations are obtained following Standard Operating Procedures /7/. The procedures effectively cover: management responsibilities, data monitoring procedures, training procedures, periodic internal audits, management reviews and corrective actions in case of any deviations. As confirmed by the audit team, there are QA/QC procedures in place to check the quality of the data collected, transferred, processed and reported, and to assure that the defined standards are met at all times. Implementation of SOPs and QA/QC procedures was verified by the audit team along with the monitoring data flows from data collection to reporting. These facts provided the audit team with confidence in the high quality of the reported results. In order to reach the required reasonable level of assurance, the audit team conducted spot checks of monitored raw data and conducted general consistency checks crossing different data sources. Spot checks were conducted for every step of the information flow, from data collection up to data processing and reporting. Furthermore, the audit team performed a step by step recalculation of pertinent values. In addition, upon completion of the recalculation activities, the audit team was able to trace each value back to its origin and confirm that no transpositions or miscalculations of the data were present.

Hence, the audit team is able to confirm that sufficient and appropriate evidence is available in order to determine GHG emission reductions and removals.

4.4 Non-Permanence Risk Analysis

Following the provisions of paragraph 3.19.2 of the VCS Standard Version 3.4, a non-permanence risk report (NPRR; version 02 dated 4 May 2014) was prepared following the provisions of the AFOLU Non-

Permanence Risk tool: VCS Version 3.2 and submitted to the audit team. The findings and conclusion regarding the non-permanence risk analysis undertaken for the project are summarized below for each risk category and factor. Unless noted otherwise, the audit team agrees with the conclusion stated in the non-permanence risk report.

The findings of the audit team regarding the risk scores applied for each factor are as follows.

Project Management		
Risk Factor	Verification Findings	Risk Rating
a)	The project employs species from the genus Eucalyptus sp. and Pinus sp., representing more than 25% of the credited carbon stocks. Although these are exotic species, the audit team checked Ngaga (2011), which is a third party publication, and confirmed that it mentions that plantation forestry with Pinus sp. and Eucalyptus sp. in Sao Hill dates back to the 1970s, therefore confirming that there has been a "successful use over time by other projects" in that agro-ecological zone. This fact was further confirmed by the audit team through Wright (1994) "Utilization of Pinus Patula" where the existence of Pinus Patula commercial plantations in the Tanzanian highlands since the 1960s is mentioned. Hence, the audit team agrees that this risk is not relevant.	0
b)	As confirmed during the site visit, there is little threat of encroachment from outside actors. The project is located in an area which is not densely populated and local communities are being engaged in different social programs, including a carbon sharing benefits agreement. Hence, the audit team agrees that this risk is not relevant.	0
c)	The audit team confirmed that the project management team includes individuals with significant experience in all skills necessary to successfully undertake all project activities. This was evident during the site visit, when it was confirmed that project areas are managed by a very professional team which includes senior foresters. Hence, the audit team agrees that this risk is not relevant.	0
d)	As confirmed during the site visit, the project management has a permanent presence in the project areas, and the main offices are located less than a day of travel from the project site. Hence, the audit team agrees that this risk is not relevant.	0
e)	The current project has been validated, registered and verified twice, by the same management team which is currently responsible of the project. Hence, the audit team agrees that the management team includes individuals with	-2

	significant experience in AFOLU project design and implementation, carbon accounting and reporting under the VCS Program.	
f)	Mitigation not argued by the project proponent.	0
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)]		-2
Total may be less than zero.		

Financial Viability		
Risk Factor	Verification Findings	Risk Rating
a)	The audit team checked the revised spreadsheet with the project financials (c.f. "UMFP Cash Flow for NPRR 140402") and confirmed that all assumptions were supported by documentary evidence such as invoices, receipts or proposals, and that conservative assumptions were applied. Hence, the audit team deems the provided financials to provide a conservative estimate of expected cash-flows for future years considering socio-economical local circumstances. According to the financials, the break-even point would be reached in December 2017 which is less than 4 years from the current assessment. Therefore, the audit team agrees that this risk is not relevant.	0
b)		
c)		
d)		
e)	The audit team checked three pieces of evidence: a) Loan agreement dated 22 August 2012 between the Finnish Fund for Industrial Cooperation and various entities under the Green Resources Group (including the project proponent); b) Loan agreement dated 22 August 2012 between the Norwegian Investment Fund for Developing Countries and various entities under the Green Resources Group (including the project proponent); and c) a Loan agreement dated 22 August 2012 between the Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V. and various entities under the Green Resources Group (including the project proponent). These three Loan Agreements are with three different public financing entities wholly owned respectively by the Governments of Finland, Norway and The Netherlands, therefore confirming that the funding institutions are in good financial health. These three agreements sum up to 40 million USD. According to the financials, the project will not reach the breakeven point until year 2017, and the maximum accumulated expenses would be equal to 1.7 million USD; therefore, the referred financing sources would comfortably cover the accumulated expenses.	0
f)		
g)		
h)		
i)	Mitigation not argued by the project proponent.	0

Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)]	0
Total may not be less than zero.	

Opportunity Cost		
Risk Factor	Verification Findings	Risk Rating
a)	The audit team checked the PD and confirmed that the only alternative land use activity in the additionality section is the continuation of the land-use prior to project start, i.e. continuation of unmanaged grassland with frequent fire usually caused by local communities. Hence, there are very few baseline activities, and where they exist, these are subsistence-driven, which indicates an opportunity risk at least of zero. Moreover, the audit team confirmed that the project is registered under the CCBS and that it has been verified already once under such standard, demonstrating net community benefits. This would confirm an opportunity risk of zero.	0
b)		
c)		
d)		
e)		
f)		
g)	Mitigation not argued by the project proponent.	0
h)	Mitigation not argued by the project proponent.	0
i)	Mitigation not argued by the project proponent.	0
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g+h or i)]		0
Total may not be less than 0.		

Project Longevity		
Risk Factor	Verification Findings	Risk Rating
a)	The audit team confirmed that the project proponent has a right of use /12/ for 99 years. Moreover, the project proponent has provided evidence of management plans and financial plans which cover the whole project longevity and that supports the credibility of the defined project longevity. Moreover, the project proponent provided evidence of these being sent to local government, i.e. letters sent to the Kilombero District Commissioner and District Executive Director and the Mufindi District Executive Director. In order to confirm that these letters, the management plan and the financial plan was actually sent to local authorities,	0
b)		

	the audit team held both phone call conversations with Mufindi District Commissioner and Mufindi District Executive Director. It was confirmed that the management and financial plan were shared with them and that they have copies of the management plans in their offices. Hence, the audit team is able to confirm that the project longevity of 99 years is credible as supported by these plans and as required by the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.4(3). Therefore, this non-conformity has been solved.	
Total Project Longevity (PL)		0
May not be less than zero		

Land Tenure and Resource Access/Impacts		
Risk Factor	Verification Findings	Risk Rating
a)	The audit team confirmed during the site visit through interviews with local authorities and through documentary evidence /12/ that the land is owned by the government of Tanzania and that the project proponent, Green Resources Ltd, holds a 99 year lease title from 2000 and 2003 for Uchindile and Mapanda Forest Projects, respectively. Therefore, the audit team agrees with the risk of 2 provided in the NPRR.	2
b)		
c)	The audit team confirmed during the site visit that in the previous monitoring period part of the project area was excised due to a dispute in the northern part of the Uchindile site. According to the project proponent this was anticipated so no GHG benefits were issued for the excised areas. The project proponent confirmed that after this excision due process was undertaken to discover any disputes over ownership and land/resource access/usage rights in other areas. The existence of this due process, and the non-existence of any disputes was confirmed during two interviews held with Mrs. Azimina Mbilinyi (Executive Director of the Kilombero District) and Mrs. Evarista Kalalu (Mufindi District Commissioner). Hence, the audit team that this risk is not relevant.	0
d)	As assessed above, there are no disputes over access/use rights in the project area. Hence, the audit team agrees that this risk is not relevant.	0
e)	This risk is not relevant as this is not a Wetland Restoration and Conservation (WRC) project.	0
f)	Mitigation not argued by the project proponent.	0
g)	Mitigation not argued by the project proponent.	0

Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f+g)]	2
Total may not be less than zero.	

Community Engagement		
Risk Factor	Verification Findings	Risk Rating
a)	The audit team confirmed during the site visit that no households live within the project area except for project's staff. Hence, the audit team agrees that this risk is not relevant.	0
b)	The audit team confirmed during the site visit that the few households living within 20 km of the project area but that these are not generally reliant on the project area as hunting or other activities (firewood) are not authorised. The main economic activity developed by nearby households is working in different activities developed in the project area. The audit team confirmed that the project proponent has in place two systems, one external of consultation with neighbour villages (Uchindile: Uchindile, Kitete, Lugala; Mapanda: Mapanda, Chogo) which is handled by the community manager, and one internal system for allowing workers to communicate to the employer through joint labor organisations. Furthermore, the project has in place an input and grievance mechanism for allowing stakeholders to communicate with the project proponent. The audit team confirmed that the project areas are FSC certified, and that the existence of these three systems is required and periodically verified by a third party. Moreover, the existence of these systems has been further verified in the last verification against the Climate, Community & Biodiversity Standards, as the audit team was able to confirm. Hence, the audit team agrees that this risk is not relevant.	0
c)	The audit team confirmed that the project is registered in the CCBS database and that it has been verified, demonstrating the delivering of net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area. Hence, the audit team agrees that the mitigation factor can be applied.	-5
Total Community Engagement (CE) [where applicable, (a+b+c)]		-5
Total may be less than zero.		

Political Risk

Risk Factor	Verification Findings	Risk Rating
a)	The audit team confirmed that the mean governance score for Tanzania for the period 2008 - 2012 across the six governance indicators of World Bank Institute's Worldwide Governance Indicators (WGI, 2013 update) is -0.38. Therefore, the audit team agrees that the political risk is 4.	4
b)		
c)		
d)		
e)		
f)	The audit team checked the websites of the Forest Carbon Partnership Facility /37/ and UN-REDD /38/ and confirmed that Tanzania has prepared a Readiness preparation proposal to be approved by the World Bank and UN. Therefore, the mitigation score of -2 can be confirmed.	-2
Total Political (PC) [as applicable ((a, b, c, d or e) + f)]		2
Total may not be less than zero.		

Natural Risk		
Risk Factor	Verification Findings	Risk Rating
F	As confirmed through the available fire records, natural fires are rare. According to the database of forest fires of the project proponent, in 17 years there were 6 incidents reported as being caused by lightning which burned 88.51 ha in total, this being equivalent to 5 ha per year. Since these records cover only 17 years, the project proponent has provided additional evidence to support the likelihood and significance of natural fires. According to FAO (2013) ignition by lightning in Tanzania is rare and this occurs in the rainy season, when the fuel is wet, therefore not causing much damage. Madoffe & Munishi (2005) indicate that fires in Tanzania are mostly human induced either as a land management tool or by arson. Based on this, the project has applied a likelihood of "less than every 10 years" and a significance of "Insignificant". The audit team agrees that the resulting risk score is consistent with a conservative estimate of historical events in the region in which the project is located. Furthermore, during the site visit the audit team confirmed that the project has in place a fire prevention plan, which includes detection measures, preventive measures and firefighting measures: External and internal firebreaks were identified during the site visit and it was confirmed that they are cleaned a few times every year; fire towers with an aggregated view shed covering all of the	1

	project area; fire patrolling with state-of-the-art equipment; procedures in place with a clear organisation and chain of command; community involvement and fire reporting programs; and monitoring systems with incident reporting. The audit team deems all these implemented measures to confirm the mitigation score of 0.5.	
PD	As confirmed through the available records on pest and diseases provided by the project proponent, pest and disease outbreaks are rare. According to the database in 17 years there were 5 events that were minor and geographically limited caused by Giant conifer aphids. As confirmed during the site visit, these events are rare and when insects appear, they disappear quickly with the first rains that "clean" the tree tops. Since these records cover only 17 years, the project entity has provided additional evidence to support the likelihood and significance of pest and diseases. The records from the government plantations of South Hill provide values for the period 2000-2014, and show only one pest event, covering 874 ha and occurring in year 2009-2010. According to Ngaga (2011) Sao Hill plantations cover around 70,000 ha, meaning that the reported pest event would be equivalent to 1.2% of the total area, and probably less than that in terms of carbon stocks, in a period of 14 years. Based on this data, and assuming that the 14-year-old data could be used to infer the 100 years, this would represent a significance of "Insignificant" and a likelihood of "Every 10 to less than 25 years", i.e. risk of 1. The project proponent has assumed a significance of "Insignificant" and a likelihood of "Less than 10 years", i.e. risk of 2. Hence, the audit team deems that this is a conservative assumption. Moreover, the project proponent has revised the mitigation score and is claiming "Prevention measures applicable to the risk factor are implemented". As confirmed during the site visit, the project proponent has in place a pest and disease management plan with clear procedures for monitoring, detection and action. The project proponent provided evidence of the effective implementation of this plan during the site visit and its implementation was further confirmed through interviews with relevant staff in charge. The audit team deems that all these implemented measures would confirm the mitigation score of 0.5.	1
W	The audit team can confirm, through expert knowledge of the region in which the project is located, that extreme weather events that would result in significant impacts on carbon stocks do not occur in the project area. While strong wind events do occur, they do not typically knock trees down.	0
G	The audit team agrees that the risk of landslides in the project area is low. The audit team also agrees that the risk of other geological hazards is not applicable to the project area.	0
ON	As confirmed during the site visit, there are no records for this type of risk and staff were not aware of these events indicating that these events are uncommon in the project area, at least in the recent past. Since there are no records, the project entity has provided additional evidence to support the likelihood and	0.5

	significance of wind throw. The records from the government plantations of South Hill, do not provide values for the period 2014-2000, showing that this natural risk is uncommon. According to Munishi-Chamshama (1994) wind throw incidence is not uncommon in the Kiwira Forest Plantation (which is located in the Southern Highlands) and concludes that damage can reach 50% of the trees at the end of the rotation. The above evidence from Munishi-Chamshama (1994) suggests that the cumulative damage in 30 years would be 50% of the trees, so assuming that this data could be used to infer the 100 years, this would represent a significance of "Minor (5% to less than 25% loss of carbon stocks)" and a likelihood "Every 25 to less than 50 years", i.e. risk equal to 1. The project proponent has assumed a significance of "Major" and a likelihood of "Every 25 to less than 50 years", i.e. risk of 2. Hence, the audit team deems that this is a conservative estimate as data from Munishi-Chamshama (1994) gives a lower risk. Moreover, the project proponent has revised the mitigation score and is claiming "Prevention measures applicable to the risk factor are implemented". Munishi-Chamshama (1994), found a positive relation between wind damage and height/diameter ratio, highlighting overstocking as a major factor for wind damage. The stands studied were overstocked due to lack of proper silvicultural management (thinning). Recommendations from Munishi-Chamshama (1994) suggest wider spacing (3mx3m) and timely thinning to promote diameter growth and increase stem stability. As confirmed by the audit team, thinning is done in a timely manner, which would prevent wind throw at a certain level. Therefore, the audit team deems that it is acceptable to claim a mitigation factor for this natural risk.	
Total Natural Risk (as applicable, F + PD + W + G + ON)		2.5

In summary, the overall risk rating that was determined for the project, in accordance with the VCS Non-Permanence Risk Tool, is 10%. The audit team has concluded that the above risk rating is in conformance with the VCS rules.

Risk Category	Rating
a) Internal Risk	2.2
b) External Risk	0
c) Natural Risk	2.7
Overall Risk Rating (a + b + c)	10%

The audit team confirmed that the non-permanence assessment has been carried out adequately and applying conservative assumptions where needed.

Therefore, the total number of buffer credits are: Buffer credits = $10\% \times 66,406 = 6,641$ tCO₂e in the monitoring period.

5 VERIFICATION CONCLUSION

The project “Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania” conforms to the verification criteria for projects and their GHG emission reductions or removals set out in the VCS rules. The audit team asserts no qualifications or limitations with respect to the statement above.

The project “Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania” conforms to the validation criteria for projects set out in the VCS rules, with respect to the methodology and project description deviations described in Section 3 of this verification report. The audit team asserts no qualifications or limitations with respect to the statement above.

The audit team has been able to confirm that the project and the project monitoring system have been implemented as described in the registered PD and subsequently validated project description deviations.

The audit team has been able to confirm, with a reasonable level of assurance, that the quantity of GHG emission reductions and removals set out below has been quantified in accordance with the VCS rules. As documented in Appendix B, the audit team can also confirm that the non-permanence risk score of 10% has been quantified in accordance with the VCS rules.

Reporting period: From 2 September 2012 to 27 December 2013.

Verified GHG emission reductions or removals in the above reporting period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2 September 2012 to 27 December 2013	0	66,378	0	66,378
Total	0	66,378	0	66,378

The audit team verified that the non-permanence risk rating of the proposed project activity for this verification is **10%** which is to be applied to the change in carbon stocks at this verification 66,406 tCO₂, giving a total buffer equal to 6,641 tCO₂. The amount of VCUs to be issued would be **59,738 tCO₂e**.

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APPENDIX A: VERIFICATION FINDINGS

The following tables include all findings issued during the verification audit. It should be noted that all language under "Client Response" is a verbatim transcription of responses provided by project personnel.

NCR 2013.1 dated 01-31-2014

Standard Reference: VCS Standard Version 3.4, §3.16.6; VCS Monitoring Report Template, Version 3.3; AR-AM0005 Version 03, Equation M.31

Document Reference: UMFP MR VCSv3.3 140117

Finding: Requirement:

The VCS Standard requires that "The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template."

Evidence and Non-Conformity:

The following non-conformities exist with respect to use of the VCS Monitoring Report Template.

- a) Section 4.4 of the VCS Monitoring Report Template requires quantification of "the net GHG emission reductions and removals, summarizing the key results using the table" provided in the referenced section. The corresponding table of the monitoring report indicates that the project removals are equal to 132,733 tCO₂e and the net GHG emission removals are equal to 124,894 tCO₂e. However, following Equation M.31 of the methodology, the net GHG emission removals should be equal to the project removals, in the case that there are no baseline removals or leakage emissions. Therefore, the table within the monitoring report has not been filled out correctly.
- b) Section 4.4 of the VCS Monitoring Report Template requires the user to "include quantification of the net change in carbon stocks. Also, state the non-permanence risk rating (as determined in the AFOLU non-permanence risk report) and calculate the total number of buffer credits that need to be deposited into the AFOLU pooled buffer account". The monitoring report does not specifically include quantification of the net change in carbon stocks. In addition, the monitoring report does not state the non-permanence risk rating and calculate the total number of buffer credits that need to be deposited into the AFOLU pooled buffer account.
- c) According to the VCS Monitoring Report Template, "All sections must be completed using Arial 10pt, black, regular (non-italic) font". Some sections of the monitoring report (e.g., table of contents) have not been completed using the required font.

Client Response: File is UMFP MR VCSv3.1 140403.doc:

- a) corrected
- b) updated
- c) corrected

Auditor Response: a) The audit team checked the revised MR (c.f. "UMFP MR VCSv3.3 140403") and confirmed that it has been corrected. The net GHG removals do not differ from the net project removals, so the referred section is now in compliance with §4.4 of the VCS MR Template.

b) The audit team checked the revised MR (c.f. "UMFP MR VCSv3.3 140403") and confirmed that it has been corrected. §4.4 of the MR now specifies the net change in carbon stocks and the non-permanence risk rating along with the number of GHG credits to be allocated to the risk buffer. Hence, the MR is in compliance with the VCS Monitoring Report Template.

c) The audit team checked the revised MR (c.f. "UMFP MR VCSv3.3 140403") and confirmed that the font used is now in compliance with the font required by the VCS Monitoring Report Template. Therefore, the non-conformities have been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.2 dated 01-31-2014

Standard Reference: AFOLU Requirements Version 3.4, §3.7.3; VCS Non-Permanence Risk Report Template Version 3.1

Document Reference: UMFP NPRR 140115

Finding: Requirement:

The AFOLU Requirements state that "The non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template..." The following non-conformities exist with respect to use of the Non-Permanence Risk Report Template.

Evidence and Non-Conformity:

- a) The non-permanence risk report has been prepared using an outdated version (Version 3.0) of the VCS Non-Permanence Risk Report template. Version 3.0 was replaced by Version 3.1, which was effective on 4 October 2012.
- b) The VCS Non-Permanence Risk Report template requires the monitoring period to be provided in the front page. The monitoring period indicated on the front cover of the non-permanence risk report is incorrect as it is not consistent with the monitoring period which is within the scope of this verification.

Client Response: File is UMFP NPRR VCSv3.1 140402.doc:

- a) This has been corrected, NPRR corresponds to version 3.1.
- b) This has been corrected

Auditor Response: a) The audit team confirmed that the revised version of the non-permanence risk report (c.f. "UMFP NPRR VCSv3.1 140402") is now in compliance with the latest available version (Version 3.1) of the VCS Non-Permanence Risk Report Template.

b) The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140402") and confirmed that it now provides in its front cover the correct monitoring period 02-09-2012 to 27-12-2013.

Therefore, the non-conformities have been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.3 dated 01-31-2014

Standard Reference: VCS Standard Version 3.4, §3.1.1 and §2.4.1

Document Reference: UMFP Verification 2013 140117

Finding: Requirement:

According to §3.1.1 of the VCS Standard "Projects shall be guided by the principles set out in Section 2.4.1". The principle of "Accuracy", as referred to in §2.4.1, requires projects to "Reduce bias and uncertainties as far as is practical".

Evidence and Non-Conformity:

The calculation spreadsheet, entitled "UMFP Verification 2013 140117", contains the following errors:

- a) Root-to-shoot ratios (as calculated in cells Z3:Z11 of worksheet "PSP Calcs 2013" of workbook "UMFP Verification 2013 140117") have been estimated using average aboveground biomass values per stratum (as shown in cells X3:X11 of worksheet "PSP Calcs 2013") that are not updated.
- b) The value of carbon stock change for the period 2008 - 2012, as used to determine the carbon stocks at the beginning of the monitoring period, and as shown in cell B27 of worksheet "Carbon calcs", includes project emissions (non-CO2 emissions). Therefore, this value is incorrect.

Client Response: Both have been corrected (Carbon model file is UMFP Verification 2013 140403.xls; r/s is calculated with average AGB at PSP level (see NCR 2013.12).

Auditor Response: a) The audit team checked the revised spreadsheet (c.f. "UMFP Verification 2013 140402") and confirmed that the root-to-shoot ratios have now been estimated using actual aboveground biomass values per plot and not per stratum. Therefore, this non-conformity may be closed.

b) The audit team checked the revised spreadsheet (c.f. "UMFP Verification 2013 140402") and confirmed that the 2008-2012 carbon stock change value has been revised. The applied value, 30,628 tCO₂, is correct as it does not account for project or leakage emissions as confirmed through the 2008-2012 MR. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.4 dated 01-31-2014

Standard Reference: AFOLU Requirements Version 3.4, §3.7.3; VCS Non-Permanence Risk Report Template Version 3.1, §4.2

Document Reference: UMFP NPRR 140115

Finding: Requirement:

The AFOLU Requirements state that "The non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template..." The VCS Non-Permanence Risk Report Template requires the user to calculate the number of total VCUs, and to "Include in this calculation the number of buffer credits to be deposited in the AFOLU pooled buffer account based on the change in carbon stock only."

Evidence and Non-Conformity:

The non-permanence risk report does not contain a description of the number of buffer credits or the number of VCUs issued.

Client Response: This has been included in section 4.2. of the NPRR (file name is UMFP MR VCSv3.1 140403.doc)

Auditor Response: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140402") and confirmed that it now includes a description of the number of buffer credits or the number of VCUs issued. Therefore, the audit team is able to confirm that the NPRR is in compliance with the referred requirement and that this non-conformity may be closed.

Client Response 2: [The client confirmed by email that the NPRR was updated in order to make it consistent with the MR and the calculation spreadsheet]

Auditor Response 2: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140429") and confirmed that it now includes a description of the number of buffer credits or the number of VCUs issued. However, the description is not consistent with the values reported in the final version of the MR (c.f. "UMFP MR VCSv3.3 140403") and the GHG accounting spreadsheet (c.f. "UMFP Verification 2013 140428"). Therefore, this non-conformity has been re-open.

Client Response 3:

Auditor Response 3: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140506") and confirmed that it now includes a description of the number of buffer credits or the number of VCUs issued and that this is consistent with the final version of the MR. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.5 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.16.6; VCS Monitoring Report Template Version 3.3, §2.2.1

Document Reference: VCS MR Version 1.0

Finding: Requirement:

The VCS Standard requires that “The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template.” The VCS Monitoring Report Template Version 3.3 requires, as part of §2.2.1, that “any methodology deviations applied during this monitoring period” must be described and justified.

Evidence and Non-Conformity:

The monitoring report describes a number of project description deviations, relating to the decision not to monitor certain parameters, under §2.2.1. While the audit team agrees that these are project description deviations, in some cases these deviations are also deviations to the criteria and procedures for monitoring as set out by AR-AM0005 Version 3.0. The audit team agrees that these deviations are appropriately justifiable as methodology deviations. However, they are not specifically identified and justified as such in the monitoring report.

Client Response: Project deviations that are considered methodology deviations were moved to the methodology deviations in the MR (file is UMFP MR VCSv3.1 140403.doc)

Auditor Response: The audit team checked the revised MR (c.f. “UMFP MR VCSv3.3 140403”) and confirmed that it now provides under §2.2.1 a list of parameters required to be monitored by AR-AM0005 Version 3.0 that will not be monitored. The audit team confirms that these parameters are calculated parameters or parameters that refer to emission sources that are not applicable to the project; therefore, the decision not to monitor them is a valid methodology deviation as it is a deviation in the criteria and procedures for monitoring or measurement and the conservativeness of the estimates is not affected. Therefore, this non-conformity may be closed.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2013.6 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.16.6; VCS Monitoring Report Template Version 3.3, §2.2.2

Document Reference: VCS MR Version 1.0

Finding: Requirement:

The VCS Standard requires that "The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template." The VCS Monitoring Report Template Version 3.3 as part of §2.2.2 requires that "any project description deviations applied in previous monitoring reports" must be described and reported.

Evidence and Non-Conformity:

Review of previous monitoring reports indicates that several project description deviations have been previously applied. However, in some cases, these project description deviations are not specifically described and reported as such within the monitoring report. For example, the change in the project boundary, which was specifically described as a project description deviation in the monitoring report dated 1 May 2013, is not described as such in the present monitoring report.

Client Response: Updated: change in project boundary is described as required in the MR in section 2.2 as well as a deviation from the PDD related to accounting with baseline removals (file is UMFP MR VCSv3.1 140403.doc).

Auditor Response: The audit team checked the revised MR (c.f. "UMFP MR VCSv3.3 140403") and confirmed that it now reports and describes under §2.2.2 any identified project description deviations:

a) Change in project boundary: As reported in the 2008-2012 MR, the geographical area of the Uchindile area was reduced in size due to a dispute between the project proponent and the Tanzanian Government's Ministry of Natural Resources and Tourism. The disputed area was excised at that time from the project. The audit team deems this an acceptable deviation in accordance with the VCS Standard as this change does not impact the baseline identification (the baseline scenario was identical for all project areas) or the additionality assessment (the identified barriers were applicable to all the project area) or the applicability of the methodology. Furthermore, the acceptability of this change is supported by the CDM "Guidelines on accounting of specified types of changes in AR CDM project activities from the description in registered PDD" (version 2) which classifies this type of change as a minor change which does not have an impact on any of the above aspects.

b) Emissions from removal of existing vegetation: As reported in the MR of the 2002-2008 period, project emissions from removal of existing woody vegetation were set to zero as justified through the "Guidelines on conditions under which GHG emissions from removal of existing vegetation due to site preparation are insignificant" (Version 1). These emissions were reported in the registered VCS PD as baseline net GHG removals, not as project emissions, and as a result of the application of the above Guideline, they were set to zero in the monitoring periods 2002-2008 and 2008-2012. The audit team deems this to be an acceptable deviation in accordance with the VCS Standard as this change does not impact the baseline identification or the additionality assessment or the applicability of the methodology.

Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.7 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.16.6; VCS Monitoring Report Template Version 3.3, §4.1; AR-AM0005 Version 3.0, §III.3

Document Reference: VCS MR Version 1.0

Finding: Requirement:

The VCS Standard requires that “The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template.” The VCS Monitoring Report Template Version 3.3 as part of §4.1 requires quantification of “the baseline emissions and/or removals, providing sufficient information to allow the reader to reproduce the calculation”.

According to §III.3 of the applicable methodology AR-AM0005 Version 3.0 “The ex ante baseline scenario defined prior to the start of the proposed A/R CDM project activity shall be valid for the entire crediting period.”

Evidence and Non-Conformity:

The monitoring report does not include any explanation on why the net Baseline GHG removals which were estimated in the registered VCS PD are not considered for estimation of the net anthropogenic GHG removals in the current monitoring period.

Client Response: An explanation on why Baseline GHG removals were not considered for estimation of the net anthropogenic GHG removals in the current monitoring period was included in section 4.1. “Baseline Emissions” of the MR (file is UMFP MR VCSv3.1 140403.doc)

Auditor Response: The audit team checked the revised MR (c.f. “UMFP MR VCSv3.3 140403”) and confirmed that it now reports and describes under §2.2.2 the deviation consisting of the non-consideration of net baseline GHG removals as reported in the registered VCS PD. As reported in the MR of the 2002-2008 period, project emissions from removal of existing woody vegetation were set to zero as justified through the “Guidelines on conditions under which GHG emissions from removal of existing vegetation due to site preparation are insignificant” (Version 1). These emissions were reported in the registered VCS PD as Baseline Net GHG removals not as project emissions, and as a result of the application of the above Guideline, they were set to zero in the monitoring periods 2002-2008 and 2008-2012. The audit team deems this an acceptable deviation in accordance with the VCS Standard as this change does not impact the baseline identification or the additionality assessment or the applicability of the methodology. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.8 dated 03-05-2014

Standard Reference: AR-AM0005 Version 3.0, Equation M15

Document Reference: UMFP Verification 2013 140117

Finding: Requirement:

Equation M.15 of the applicable methodology AR-AM0005 Version 3.0 requires that, in order to determine the stem dry biomass, the commercial volume must be multiplied by the “Basic wood density for species j; tonnes d.m. m⁻³ merchantable volume”.

Evidence and Non-Conformity:

The applied densities in the spreadsheet “UMFP Verification 2013 140117” are sourced from Bryce (1999). According to such publication, the density applied refers to the ratio of oven dry weight to air dried volume. However, this density is not equivalent to the basic density as required by the methodology which is expressed by the ratio between the oven dry weight to fresh volume. The project proponent shall note that the basic density is applied to the merchantable volume estimate in order to convert it to dry weight. Since the volume equation provides estimates of green volume, the wood density applied has to be expressed in terms of green volume too.

Client Response: This has been corrected using the same source but applying the wood density based on green volume. Values used are now 0.34 for pine and 0.43 for euc. See files UMFP Verification 2013 140403.xls and UMFP MR VCSv3.1 140403.doc.

Auditor Response: The audit team checked the revised spreadsheet (c.f. “UMFP Verification 2013 140402”) and confirmed that the values of basic densities have been revised. While the value of basic density for Eucalyptus sp. (0.428 t/m³) is consistent with Bryce (1999), the value for Pinus sp. is not consistent. The spreadsheet applies a value of 0.336, while according to Bryce (1999) the value is 0.366. Therefore, the non-conformity has not been resolved.

Client Response 2: This was a typo and it has been corrected, file is UMFP Verification 2013 140428.xls.

Auditor Response 2: The audit team checked the revised spreadsheet (c.f. “UMFP Verification 2013 140428”) and confirmed that the values of basic density have been revised. The basic density values are now consistent with the values provided by Bryce (1999) for Pinus sp. and Eucalyptus sp. for Tanzania. Therefore, this non-conformity has been resolved and may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.9 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.1.1; AR-AM0005 Version 3.0, §III.2.(a)

Document Reference: Compartments ESRI Shapefile; UMFP Verification 2013 140117

Finding: Requirement:

According to §III.2.(a) of the applicable methodology AR-AM0005 Version 3.0, "The ex post stratification shall consider monitoring of the project strata and their boundaries in order to account for the changes occurring in the strata due to disturbances and management activities in the period subsequent to ex ante stratification".

According to §3.1.1 of the VCS Standard 3.4 "projects shall be guided by the principles set out in Section 2.4.1" which include the principle of accuracy (i.e., reduce bias and uncertainties as far as is practical).

Evidence and Non-Conformity:

a) ESRI Shapefiles of compartments were checked against Very High Resolution (VHR) satellite imagery and ground reference data and it was confirmed that some non-forest areas which would not be sampled with PSPs were not excised from the compartment polygons, inter alia: patches of non-forest areas above the MMU in C116 and C119 (Uchindile); firebreaks not excised in G239 (Mapanda); road not excised in F225 (Mapanda); area of high mortality in F225 and G246 not excised (Mapanda); firebreak between A002 and A001 not delineated or excised (Mapanda); firebreak E148 seems not delineated or excised (Mapanda); boundaries of F216 are not well delineated (Mapanda).

b) ESRI Shapefiles of compartments were checked against ground reference data and some compartments were identified to have an incorrect species assigned, inter alia: C118 TP2 and C118 TP1 have their species swapped (Uchindile); A003a no longer has Eucalyptus (Mapanda); A206 TP and B024 TP have incorrect species assigned (Mapanda); E196 and E195 seem to have incorrect species (Mapanda).

c) The areas used in the GHG accounting spreadsheet were checked against the areas provided by the compartment ESRI Shapefiles and it was confirmed that the areas used in the calculations are not consistent (i.e., "effective area" used instead of geographical area).

d) The ESRI Shapefiles were checked for topology issues and some overlapping was identified, inter alia: B019a and B019c overlap.

Client Response: This has been corrected and new shapefiles are submitted under the folder GIS, see UMFP_bnd_14031, umfp_psp_2013_120331 and umfp_vcs_cpts_utm_140314. Areas used for carbon accounting were updated (see "Area_gis" in UMFP Verification 2013 140403.xls).

Auditor Response: a) The revised ESRI Shapefiles were checked against VHR satellite imagery dated September 2013 and ground-reference data and identified non-forest areas that were not excised, inter alia: firebreaks located within compartment polygons have not been excised in Mapanda (please note that during the site visit two firebreaks were visited and in one it was confirmed that this issue was present); Non-forest areas in F225, G246, F214 and F231 (Mapanda) have not been excised; non-forest areas above the MMU in C081a (Uchindile) have not been excised. Therefore, the revised stratification continues to include areas that have not been planted in the areas for which GHG emission removals have been estimated. Hence, this non-conformity has not been resolved.

b) The revised ESRI Shapefiles were checked and found that the following issue has not been corrected: A003a no longer has Eucalyptus (Mapanda; please note that the audit team visited 3,973,253.580 - 942,778.053 Meters and found that the few Eucalyptus trees were cut and that instead Pinus sp., probably of 2012, was present). Therefore, the revised stratification continues to include areas with an incorrect species assigned, so this non-conformity has not been resolved.

c) The GHG accounting spreadsheet was checked against the areas provide by the revised ESRI Shapefile, and they were found to be consistent and refer to geographical areas. Therefore, this non-conformity may be closed.

Client Response 2: a) This has been corrected. See word file "Mapping cars correction js 140428" and compartment shapefile (folder: GIS - Updates April 2014) for additional evidence

- C081a (corrected, wrong planting date)
- F225a (corrected non-forest areas excluded)
- G246 (corrected, rocky areas were excluded)
- F214 (corrected non-forest areas excluded)
- F231 (corrected non-forest areas excluded)

b) A003a was updated in GIS and verified using Landsat.

Auditor Response 2: a) The revised ESRI Shapefile was checked against satellite imagery and ground-reference data and it was confirmed that no non-forest areas (above the minimum mapping unit as defined by Green Resources' mapping procedures) appear within the boundaries of the compartment polygons. Therefore, this non-conformity may be closed.

b) The revised ESRI Shapefile was checked and it was confirmed that compartment A0003a was corrected in order to allocate an area that was substituted by another species to another compartment. The audit team checked the revised compartment against VHR satellite imagery and confirmed that the boundaries are correct. The audit team checked the revised ESRI Shapefiles for other errors and found that compartment A170#1 and A170#2 overlap and both contain areas in their respective fields. Hence, this non-conformity has not been resolved.

Because item (b) has not been fully resolved, the finding remains open.

Client Response 3: This has been corrected; new shapefiles under 3rd submission folder

Auditor Response 3: b) The audit team checked the revised compartment against VHR satellite imagery and confirmed that the boundaries are correct. Therefore, this non-conformity has been resolved and may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.10 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.1.1

Document Reference: UMFP Verification 2013 140117

Finding: Requirement:

According to §3.1.1 of the VCS Standard 3.4 “projects shall be guided by the principles set out in Section 2.4.1” which include the principle of accuracy (i.e., reduce bias and uncertainties as far as is practical).

Evidence and Non-Conformity:

The PSP raw data sheet (c.f. Tab “PSPRawdata 2013” of spreadsheet “UMFP Verification 2013 140117”) and the PSP calculations sheet (c.f. Tab “PSP Calcs 2013” of spreadsheet “UMFP Verification 2013 140117”) were checked against the field data sheets and ESRI Shapefiles with compartment information and the following issues were identified:

- a) Some of the PSP measurements that have been taken in Uchindile have not been included in the PSP calculations sheet.
- b) Some of the PSP measurements that have been taken in Mapanda have not been included in the PSP calculations sheet.
- c) Tree species data is missing in some PSPs of the PSP raw data sheet, inter alia: U462_2013, U615_2013, U650_2013.
- d) DBH/H Transfer errors from the field data sheets to the PSP raw data sheet have been identified in M06_2010, M204_2011, M369_2013, M415_2013, M460_2013, U304_2011, M241_2011 and U725_2011.
- d) Outliers of DBH have been identified, i.e., DBH>100 in U304_2011 and U799_2011.
- e) The PSP raw data sheet show some repeated data, inter alia, M149_2011 and M160_2011.
- f) Field data sheets have been provided for some PSPs which are not listed in the PSP raw data sheet, inter alia: M172_2013, U506_2013 U539_2011 and U798_2011.
- g) Species assigned in some PSPs of the PSP raw data sheet are incorrect, inter alia: M148_2011 and M228_2011.
- h) Heights are missing in some PSPs of the PSP raw data sheet, inter alia: M460_2013

Client Response: This has been corrected; carbon model file is UMFP Verification 2013 140403.xls

Auditor Response: The revised PSP raw data sheet (c.f. Tab “PSPRawdata 2013” of spreadsheet “UMFP Verification 2013 140402”) and the PSP calculations sheet (c.f. Tab “PSP Calcs 2013” of spreadsheet “UMFP Verification 2013 140402”) were checked against the field data sheets and ESRI Shapefiles with compartment information and checked if the corrective actions were implemented:

- a) PSP measurements for Uchindile were included in the PSP calculation sheet. Therefore, this non-conformity may be closed.
- b) PSPs M232_2011 and M84_2011 are out of the project boundaries, so the PSP calculation sheet includes PSPs which are not within the project boundary and are not part of the reported GHG removals reported. Therefore, this non-conformity has not been resolved.
- c) Missing tree species data has been completed. It was further confirmed that no tree species data is missing and that this is consistent with the compartment information. Therefore, this non-conformity may be closed.
- d) DBH/H Transfer errors from the field data sheets to the PSP raw data sheet were corrected. Therefore, this non-conformity may be closed.
- d) Identified outliers of DBH were corrected, so now the data does not contain anomalous diameters or heights. Therefore, this non-conformity may be closed.
- e) No repeated data has been identified in the PSP raw data sheet. Therefore, this non-conformity may be closed.
- f) Field data sheets for PSPs M134_2011, M23_2011, U339_2011, U398_2011 U884_2011 were provided but they are missing from the PSP raw data sheet. Therefore, the PSP raw data sheet does not contain a complete set of monitored information, so this non-conformity remains unresolved.
- g) All issues have been corrected. However, it has been identified that the planting date of M693_2013 is not consistent with the Field data sheet and the ESRI Shapefile. Therefore, this non-conformity has not been solved.
- h) Please note that some PSPs of the PSP calculation sheet have no heights while their field data sheet include heights. Therefore, this non-conformity has not been solved.

Because items (b), (f), (g) and (h) have not been fully resolved, this finding remains open.

Client Response 2: b) Corrected in PSP raw data in verification model, (changed to out under enumeration, therefore not included in the PSP calcs).

- Compartment H159a, H159b close to rest house.

f) M134_2011 Only the QC sheet was captured, now added

M23_2011 => This plot was harvested therefore no trees, also excluded (Compartment D123) from area

U339_2011 => Sheet was not captured, now captured

U398_2011 => This plot was harvested therefore no trees, also excluded from area (compartment B035a)

U884_2011 => Sheet was not captured, now captured

g) Date updated, was recorded as 2002 planting, now updated to the correct 2007 planting.

h) Only plots with no heights are plots with trees of young age.

Auditor Response 2: b) The audit team checked the revised spreadsheet and confirmed that PSPs M232_2011 and M84_2011 have been deleted from the PSP raw data sheet (c.f. Tab "PSPRawdata 2013" of spreadsheet "UMFP Verification 2013 24042014"). However, while doing a recheck of data, the audit team has identified that PSPs with planting date after 2011 were included erroneously in stratum e09-10. Therefore, the GHG removals are still calculated with PSPs that are not part of the reported GHG removals. Hence, this non-conformity has not been resolved.

f) The audit team checked the PSP raw data sheet (c.f. Tab "PSPRawdata 2013" of spreadsheet "UMFP Verification 2013 24042014") and confirmed that missing field data sheets of sample plots PSPs M134_2011, U339_2011 and U884_2011 were added. Furthermore, data from PSPs M23_2011 and U398_2011, were not included in the raw data sheet which is correct as they belong to harvested compartments. Therefore this non-conformity has been resolved and may be closed.

Because item (b) has not been fully resolved, the finding remains open.

Client Response 3: This has been updated. Carbon model updated; updates to relevant info in the MR and NPPR were made. All files under 3rd submission

Auditor Response 3: b) The audit team checked the revised spreadsheet (c.f. Tab "PSPRawdata 2013" of spreadsheet "UMFP Verification 2013 140506") and confirmed that all identified errors have been resolved. Hence, the GHG removals are calculated only with PSPs that are part of the reported GHG removals. Hence, this non-conformity has been resolved and this finding may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.11 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.1.1

Document Reference: UMFP Verification 2013 140117

Finding: Requirement:

According to §3.1.1 of the VCS Standard 3.4 "projects shall be guided by the principles set out in Section 2.4.1" which include the principle of accuracy (i.e., reduce bias and uncertainties as far as is practical).

Evidence and Non-Conformity:

The PSP calculations sheet (c.f. Sheet "PSP Calcs 2013" of spreadsheet "UMFP Verification 2013 140117") applies stand volume equations sourced from Indufor (2008) for both Eucalyptus and Pinus. Indufor (2008) was checked in order to confirm that equations were adequately sourced from this publication, and it was confirmed that one of the parameters of the equation for Pinus sp. was erroneously transcribed (c.f. Cell "H3" of sheet "PSP Calcs 2013" of spreadsheet "UMFP Verification 2013 140117").

Client Response: This has been corrected; carbon model version: UMFP Verification 2013 140403.xls

Auditor Response: The audit team checked the revised PSP calculations sheet (c.f. Sheet "PSP Calcs 2013" of spreadsheet "UMFP Verification 2013 140402") and confirmed that the parameter of the equation for Pinus sp. which was incorrectly transcribed has been corrected, and further confirmed that all parameters are consistent with Indufor (2008) for both Eucalyptus and Pinus. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.12 dated 03-05-2014

Standard Reference: AR-AM0005 Version 3.0, Equation M15

Document Reference: UMFP Verification 2013 140117

Finding: Requirement:

According to the equation M.16 of the applicable methodology AR-AM0005 Version 3.0 in order to determine belowground biomass the total aboveground biomass shall be multiplied by the root-shoot ratio. Furthermore, it is stated that “The BEF and the root-shoot ratio (R) are age or density-dependent, therefore, it is desirable to use age or density-dependent equations (i.e. volume per ha)”.

According to §3.1.1 of the VCS Standard 3.4 “projects shall be guided by the principles set out in Section 2.4.1” which include the principle of accuracy (i.e., reduce bias and uncertainties as far as is practical).

Evidence and Non-Conformity:

According to the tab “PSP Calcs 2013” of spreadsheet “UMFP Verification 2013 140117” the root-shoot ratio applied to each PSP is based on the average biomass of the stratum where such PSP is located.

However, this approach is not as accurate as practical, as it does not consider the specific aboveground biomass at a PSP level, which may lead to overestimations or underestimations.

Client Response: This has been corrected, r/s uses AGB at PSP level; carbon model version: UMFP Verification 2013 140403.xls

Auditor Response: The audit team checked the revised calculation spreadsheet (c.f. “UMFP Verification 2013 140402”) and confirmed that it has been revised. It now estimates the belowground biomass applying the root-shoot-ratio to the aboveground biomass estimated in each PSP, and estimating the average across PSPs within each stratum. The audit team deems that this is in accordance with the applicable methodology and it provides more accurate estimates.

Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.13 dated 03-05-2014

Standard Reference: AFOLU Requirements Version 3.4, §3.1.9

Document Reference: UMFP long term average 140131

Finding: Requirement:

According to the AFOLU Requirements V.3.4 §3.1.9 "ARR or IFM projects with harvesting activities shall not be issued GHG credits above the long-term average GHG benefit maintained by the project. The long-term average GHG benefit shall be calculated as set out in Section 4.5.5".

Evidence and Non-Conformity"

a) SCS checked the long-term average spreadsheet (c.f. "UMFP long term average 140131") and confirmed that in order to estimate the future net increment the project proponent has made some assumptions which are not conservative or accurate in view of the current inventory data. Although, as the project proponent argued, the yield might increase in the future due to the continuous improvement of the genetic material and the improved survival rates this is just a hypothetical scenario which cannot be justified ex-ante.

b) The long-term average spreadsheet (c.f. "UMFP long term average 140131") has been estimated considering the baseline net GHG removals provided in the VCS PD. However, baseline net GHG removals have not been accounted for in any of the previous verifications so there is a mismatch between the VCUs issued in past verifications as reported in the different Monitoring Reports and the VCUs issued in the past in the long-term average spreadsheet.

Client Response: a) This has been updated; see file "Estimated long term volume and area 140331.doc" for an explanation of the procedure.

b) Baseline net GHG removals have been removed from the LTA calculations (file is UMFP long term average 140402.xls)

Auditor Response: a) The audit team checked the revised long-term average spreadsheet (c.f. "UMFP long term average 140402") and confirmed that it has been revised. Now increments are based on actual data and the model assumes that there will be no hypothetical improvement in yield, which is acceptable. However, the model only covers the period until 2050 and then assumes that the same series from 2030 to 2050 is repeated continuously for the remainder of the crediting period. Since in the referred period there is very little harvesting this has caused an overestimation of GHG benefits and a continuous accumulation of carbon stocks which is not realistic. Therefore, the long-term average is still not calculated with conservative assumptions and this non-conformity remains unresolved.

b) The audit team checked the revised long-term average spreadsheet (c.f. "UMFP long term average 140402") and confirmed that it has been revised. Now it does provide baseline net GHG removals and the values are consistent with MR of previous monitoring periods. Therefore, this non-conformity may be closed.

Because item (a) has not been fully resolved, the finding remains open.

Client Response 2: Corrected by expanding the model to 2100. File name is UMFP long term average 140428.xls.

Auditor Response 2: a) The audit team checked the revised long-term average spreadsheet (c.f. "UMFP long term average 140428") and confirmed that it has been revised. Now the model has been expanded until 2100, which provides realistic carbon stocks forecast. The long-term average in carbon stocks for the 100 year period is now 815,254 tCO₂. According to the emission reductions spreadsheet which has been verified by the audit team (c.f. Tab "Carbon Calcs" of spreadsheet "UMFP Verification 2013 240428"), the actual carbon stocks at the end of the monitoring period are 382,869 tCO₂e. Hence, the audit team is able to confirm that the project has not issued GHG credits above the long-term average GHG benefit maintained by the project as required by §3.1.9 of the AFOLU Requirements V.3.4. Hence, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.14 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.2.1

Document Reference: NPR Report Version 1.0

Finding: Requirement:

In the “Project Management” sub-category, the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.1 requires that a score of 2 be applied for item (a) in the case that “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.” The AFOLU Non-Permanence Risk Tool states that “Evidence that species planted are adapted to the same or similar agro-ecological zone(s) in which the project is located may be demonstrated through: publications in scientific journals; technical reports from government agencies, NGOs or research groups; or, successful use over time by other projects registered under the VCS or an approved GHG program”.

Evidence and Information Request:

The non-permanence risk report claims a score of 0 for the item in question and states that the species planted are adapted to the project location. Please provide specific evidence, of the types described by the AFOLU Non-Permanence Risk Tool, to support the claim.

Client Response: The study indicated in the NPRR is Ngaga, 2011, “Forest plantations and woodlots in Tanzania” and refers the Government owned plantation of SHFP (Sao Hill Forest Project) which dates back to the 70s and uses Pine and Eucalyptus species, similarly to UMFP. This study is provided as a supporting file.

Auditor Response: The audit team checked Ngaga (2011), which is a third party publication, and confirmed that it mentions that plantation forestry with Pinus sp. and Eucalyptus sp. in Sao Hill dates back to the 70s, therefore confirming that there has been a “successful use over time by other projects” in that agro-ecological zone. This fact was further confirmed by the audit team through Wright (1994) “Utilization of Pinus Patula” where the existence of Pinus Patula commercial plantations in the Tanzanian highlands since the 1960s is mentioned.

Therefore, this new information request may be closed.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2013.15 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.2.2

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.2, "When preparing the cash flow breakeven analysis, the assumptions on revenue from both carbon and other commercial sources (eg, timber) must be conservative and clearly document the source, pricing assumptions, frequency of verification and other relevant variables."

Evidence and Non-Conformity:

SCS checked the provided evidence used to justify the assumptions made in the UMFP cashflow (c.f. "UMFP Cash Flow for NPRRI 140214") and identified the following issues:

- a) The assumed cost of seedling is not consistent with the latest version of Tanzania Forest Regulation: Item 7, (c) (iii).
- b) Values assumed which are sourced from the GRL Forest Plantation Unit Tasks are not consistent with the mentioned source.
- c) The assumed cost of fertilizer is significantly lower than the purchase order provided.
- d) Assumed wood prices are not consistent with the GR Annual Report 2011 or with the GRAS financial model provided by the financial controller.
- e) No increase in real terms in prices has been assumed while the GRAS financial model and the financial controller confirmed that this shall be considered.
- f) The assumed rent is of Tshs 500/ha; however, this is not consistent with the rent provided in the land titles.

Client Response: Cash flow model is UMFP cash flow for NPRR 140402.xls; all supporting evidences are provided:

- a) This has been updated
- b) This has been updated
- c) This has been updated
- d) This has been updated
- e) For simplicity no change in both costs and revenues were assumed as it is expected that one will offset the other (e.g. planting costs vs wood prices)
- f) According to the latest receipts (file name is "Land Rent Invoices 2012-2014 Mapanda&Idete.doc") land rent is currently 2,500Tsh/ha, so this is assumed in the cash flow model

Auditor Response: The audit team checked the revised spreadsheet (c.f. "UMFP Cash Flow for NPRR 140402") and confirmed the following:

- a) The assumed cost of seedling has been corrected and it is now consistent with the latest version of Tanzania Forest regulation: Item 7, (c) (iii). Therefore, this non-conformity may be closed.
- b) Values sourced from the GRL Forest Plantation Unit Tasks are now consistent with the source, therefore, resolving this non-conformity.
- c) The assumed cost of fertilizer is consistent with the purchase order provided, therefore, resolving this non-conformity.
- d) The assumed values are consistent with the GRAS financial model. Furthermore, the audit team checked the long-term average spreadsheet and confirmed that the model does not consider revenues from thinning or revenues from final harvesting of some stands in 2014 and 2015. Therefore, the model includes very conservative assumptions as it will decrease the profitability and will delay the breakeven point. Hence, it is acceptable and this non-conformity may be resolved.
- e) The non-consideration of an increase of wood price in real terms would lead to higher returns. Hence, this assumption is conservative and it is therefore acceptable. Hence, this non-conformity may be closed.
- f) The assumed land rent has been revised. The audit team checked the evidence "Land Rent Invoices 2012-2014" and confirmed that the value assumed in the model is consistent with this evidence. Furthermore, the value is higher than the value provided in the land titles, which would confirm the conservativeness of the assumed value. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.16 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.2.2

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.2 "When preparing the cash flow breakeven analysis, the assumptions on revenue from both carbon and other commercial sources (eg, timber) must be conservative and clearly document the source, pricing assumptions, frequency of verification and other relevant variables."

Evidence and Information Request:

SCS checked the provided evidence used to justify the assumptions made in the UMFP cashflow (c.f. "UMFP Cash Flow for NPRRI 140214") and found that -4,000,000 USD of losses carried forward previous to 2012 were assumed in the model. Please provide evidence to support the assumed quantity of losses.

Client Response: Around 4M USD in losses are carried forward in 2012, this is linked to plantations costs and has been updated in the model (file is UMFP cash flow for NPRR 140402.xls)

Auditor Response: The audit team checked the revised spreadsheet (c.f. "UMFP Cash Flow for NPRR 140402") and confirmed that the losses carried forward prior to 2012 were now estimated by estimating the expenditures incurred prior to 2012 in planting. This has been estimated by multiplying the total planting cost by the planted area according to the planting schedule. Both the planting schedule and the planting costs per species were verified by the audit team and found to be correct and reasonable. Therefore, the audit team is able to confirm that the calculation of losses carried forward is clearly documented and is reasonable, and that this non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.17 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.2.2

Document Reference: NPRR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.2 "Projects may demonstrate that funding has been secured through, for example, financial statements, bank records, executed commodity purchase agreements, executed emission reduction purchase agreements, or other signed contractual agreements".

Evidence and Information Request:

The non-permanence risk report states that "Green Resources AS has secured financing at the group level to implement a business plan across all subsidiaries, which will enable the company to become cash flow positive within 3 years and remain cash flow positive. The funding is loan financing from Norfund and Finfund and explicitly covers financing of the Uchindile and Mapanda project. The contract demonstrating the financing is available for the DOE." In support of these claims, please provide evidence for the loans from Norfund and Finfund, and for the signed Emission Reductions Purchase Agreement (ERPA).

Client Response: The evidence for the loans and ERPA are provided as supporting files: for NPRR - Cash Flow - funding

Auditor Response: The audit team checked three pieces of evidence: a) Loan agreement dated 22 August 2012 between the Finish Fund for Industrial Cooperation and various entities under the Green Resources Group (including the project proponent); b) Loan agreement dated 22 August 2012 between the Norwegian Investment Fund for Developing Countries and various entities under the Green Resources Group (including the project proponent); and c) a Loan agreement dated 22 August 2012 between the Nederlandse Financierings-Maatschappij voor Ontwikkelingslanden N.V. and various entities under the Green Resources Group (including the project proponent). These three Loan Agreements are with three different public financing entities wholly owned respectively by the Governments of Finland, Norway and The Netherlands, therefore confirming that the funding institutions are in good financial health. These three agreements sum up to 40 million USD. According to the financials, the project will not reach the breakeven point until year 2020, and the maximum accumulated expenses would be equal to 7 million USD; therefore, the referred financing sources would comfortably cover the accumulated expenses.

However, although the financials show that the breakeven will be reached in year 2020 (6 years from the current assessment), the latest version of the NPRR states that the breakeven point is less than 4 years from the current risk assessment. Please clarify which would be the applicable risk rating considering the financials. This new information request remains unresolved.

Client Response 2: A positive cumulative cash flow is reached in 2015, 3 years from the current assessment (and stays positive thereafter); therefore the NPRR was updated. Cash flow file is UMFP cash flow for NPRR 140429.xls and NPRR file is UMFP NPRR VCSv3.1 140429.doc.

Auditor Response 2: The audit team checked the revised version of the NPRR (c.f. "UMFP NPRR VCSv3.1 140429") and the revised cash-flow spreadsheet (c.f. "UMFP Cash Flow for NPRR 140429"), and confirmed that they have been revised. The cash-flow spreadsheet has been revised in order to make it consistent with the harvesting forecast provided by the long-term average in carbon stocks spreadsheet (c.f. "UMFP long term average 140428") which has been verified by the audit team. Hence, the cash-flow spreadsheet now provides conservative estimations of the expected cash-flow and shows that the breakeven point as defined by the VCS is reached in year 2017, less than 4 years from the current assessment. The audit team confirmed that the NPRR has been updated accordingly keeping the relevant risk as zero. Hence, this non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.18 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.2.4(2)

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.4(2) "Evidence shall be provided that right of use (see the VCS Standard for specification with respect to right of use) can be maintained for the entire project longevity (eg, where control is secured through a concession that is shorter than the project longevity, such concession is renewable for the full longevity period being claimed)".

Evidence and Information Request:

During the site visit it was found that some areas in the South of Uchindile are out of the boundaries of the area covered by the land title of Uchindile. Evidence that the project proponent can maintain the right of use for the entire project longevity for those areas is required.

Client Response: These areas have been removed from Uchindile boundary and do not make part of the area for the VCS project and as such for carbon accounting. New shapefiles of the Uchindile boundary are provided (see NCR 2013.9)

Auditor Response: The audit team checked the revised ESRI Shapefile (c.f. "UMFP_bnd_140313") and confirmed that the areas in the South of Uchindile that were out of the boundaries of the area covered by the land title of Uchindile have been excised. Hence, the audit team is able to confirm that the right of use of all lands are appropriately justified by a land title and that the project is in compliance with Section 2.2.4 (2) of the AFOLU Non-Permanence Risk Tool, Version 3.2. Therefore, this new information request may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.19 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.2.4(3)

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.4(3) "For all AFOLU project types, the entire project longevity shall be covered by management and financial plans as submitted to local government or financial institutions, or otherwise made public, in which the intention to continue management practices is stated and planned for, and may include external evidence such as municipal land-use plans, institutional structures, or tools such as ecological-economic zoning".

Evidence and Information Request:

SCS checked the business plan which was provided to the Tanzanian Government and confirmed that it covers 4 years up to 2010, not the 99 years of project longevity as required by the tool. Please provide evidence of "management and financial plans as submitted to local government or financial institutions, or otherwise made public, in which the intention to continue management practices is stated and planned for" that cover the claimed project longevity of 99 years.

Client Response: GRL has secured a 99 year land title from the Tanzanian Government. As part of the requirements from Tanzanian Authorities a Business Plan covering at least 5 years was submitted covering the period between 2012 and 2022. Furthermore Green Resources AS has a long term model covering all its operations including UMFP that spans until 2040 (43 years) which was submitted to Norfund and Finfund. File name is GRAS LTP 4 2 131030 FINAL FOR FMO FF NF V2 (see folder PL requirement)

Auditor Response: The audit team checked the financial plan provided and presented to the Finish Fund for Industrial Cooperation and the Norwegian Investment Fund for Developing Countries and confirmed that it spans up to 2040, i.e., 26 years from the current assessment and 43 years from the start date. While the audit team agrees that this constitutes evidence to support a project longevity of 43 years, the audit team has not yet received evidence to support a project longevity of 99 years. Please provide evidence that the entire project longevity of 99 years is "covered by financial plans as submitted to local government or financial institutions".

Client Response 2: Green Resources has updated the UMFP cash flow model to cover the 99 years of the project longevity and submitted it to the local Government. Folder is 99 years: files names are UMFP Cash Flow 99 years 140429.xls and UMFP long term average 99 years 140429.xls.

Auditor Response 2: The audit team checked the financial plan provided and confirmed that it covers 99 years, i.e. the project longevity claimed by the project proponent. However, no evidence has been provided to support that this financial plan has been submitted to "local government or financial institutions" as required by the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.2.4(3). Therefore, this non-conformity remains unresolved.

Client Response 3: Evidence has been provided. File is under 3rd submission. (99 years) Sent to the following government institutions in Tanzania.

- Kilombero District Commissioner
- Mufindi District Executive Director:
- Kilombero District Executive Director

Scanned copy of the letter in Dropbox. As requested on the 7 of May 2014, the following phone numbers were provided (email sent 8 of May). And the respected DED and DC were informed that they will be called.

DC Mufindi: +255 712 130901; +255 784386950 is the only one available on this short notice.

Auditor Response 3: The audit team checked the management and financial plans provided and confirmed that they cover 99 years, i.e. the project longevity claimed by the project proponent. Moreover, the project proponent provided evidence of these being sent to local government, i.e., letters sent to the Kilombero District Commissioner and District Executive Director and the Mufindi District Executive Director. In order to confirm that these letters, the management plan and the financial plan was actually sent to local authorities, the audit team held phone conversations with both the Mufindi District Commissioner and the Mufindi District Executive Director. It was confirmed that the management and financial plan were shared with them and that they have copies of the management plans in their offices. Hence, the audit team is able to confirm that the project longevity of 99 years is credible as supported by these plans and as required by the AFOLU Non-Permanence Risk Tool. Therefore, this non-conformity has been resolved.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.20 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.4.1(1)

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.4.1(1) "Natural risk is based on likelihood (ie, the historical average number of times the event has occurred in the project area over the last 100 years) and significance (ie, the average significance of each event)".

Evidence and Non-Conformity:

The non-permanence risk report provides an analysis of historical fire events which includes both natural and human-induced fires. Human-induced fires are not, by definition, natural, so they are not applicable within the framework of the "Natural Risk" category of the AFOLU Non-Permanence Risk Tool.

Client Response: This has been corrected in the NPRR (file is UMFP NPRR VCSv3.1 140402.doc), so that only natural risk of fire is considered. Furthermore, supporting evidence is provided that the risk of natural fires is insignificant: "Tanzania IFM Fire Baseline Report, 21 Nov 2012" and a study by TAFORI and SUA on fire reduction strategies in the East Arc Mountains. Additionally as mentioned in the NPRR even in the case of a fire in the plantation, comprehensive mitigation measures are in place.

Auditor Response: The audit team checked the revised NPRR (c.f "UMFP NPRR VCSv3.1 140402") and confirmed that human-induced fires are not included in the discussion of the "Natural Risk" category, and that the discussion is limited to natural fires. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.21 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.4.1(1)

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.4.1(1) "Where data are available for at least 20 years, but less than 100 years, projects shall conservatively extrapolate using available data. Where such data are not available for the project area, likelihood and significance shall be determined based on conservative estimates...of historical events in the region in which the project is located."

Evidence and Information Request:

The non-permanence risk report provides an analysis of historical events that have occurred within the project area on fires, pest and diseases and drought. However, the record of occurrences cover less than 20 years. Therefore, please provide evidence that the likelihood and significance for these risk factors have been determined based on conservative estimates of historical events in the region in which the project is located.

Client Response: There is little information on pests & diseases and drought for the region or even the whole of Tanzania available for 100 years or even for the past 20 years. Nonetheless, The International Disaster Database (see file 1900-2013 Details Disaster List_EM-DAT_Tz pdf file) was consulted which provides information on major disaster events dating back to 1900. For drought, insect infestation and storm (for windthrow), the oldest record of the past 114 years in the database is a drought event in 1967 (categorized as being nationwide). Most of the events have a location defined, which doesn't correspond to the project region. To refine a bit more this information, a request (see letter template file "Fire and Windthrow Risk_letter to SHFP") was made to the management of the SHFP, a government forest plantation dating from the 70s which is the oldest in the region and close to the project area. The information provided was compiled into the document "Factors Affecting Forest Health in the SHFP" and provides records for the last 14 years. Only one pest outbreak was recorded in 2009-10 on *Pinus patula*. No information on drought was provided. The information on wildfires although provided is not considered relevant given it is only area burnt per ha and as mentioned above in NCR 20, natural risk plays a little role in fire ignitions and area burnt, therefore it is assumed that most (if not all) area burnt in the past 14 y at SHFP was human-induced. No indications of the causes of fires was given. All this information is provided (see supporting files) and was used to conservatively estimate the risk of natural fires, droughts and pest&diseases.

Auditor Response: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140402") and assessed the new information regarding the estimation of the significance and likelihood for each of the natural risk factors:

a) Fire: As confirmed through the available fire records the number of natural fires is scarce. According to the database in 17 years there were 6 incidents reported as being caused by lightning which burnt in total 88.51 ha, this being equivalent to 5 ha per year. Since these records cover only 17 years, the project entity has provided additional evidence to support the likelihood and significance of natural fires.

According to FAO (2013) ignition by lightning in Tanzania is rare and this occurs in the rainy season, when the fuel is wet, therefore not causing many damages. Madoffe & Munishi (2005) indicate that fires in Tanzania are mostly human induced either as a land management tool or by arson. Based on this, the project has applied a likelihood of "less than every 10 years" and a significance of "Insignificant". The audit team agrees that the resulting risk score is consistent with a conservative estimate of historical events in the region in which the project is located. Therefore, the information risk related to this sub-category has been resolved.

b) Pest and Diseases: As confirmed through the available records on pest and diseases the number of pest events are scarce. According to the database in 17 years there were 5 events that were minor and constrained geographically caused by Giant conifer aphids. As confirmed during the site visit, these events are rare and when they appear they disappear quickly with the first rains that "clean" the tree tops. Since these records cover only 17 years, the project entity has provided additional evidence to support the likelihood and significance of pest and diseases. The records from the government plantations of South Hill, provide values for the period 2014-2000, and show that only one pest event occurred in year 2009-2010 that covered 874 ha. Based on this, the project has assumed a likelihood of "less than every 10 years" and a Significance of "No Loss". However, evidence has not been provided that the determination of a significance of "no loss" is clearly consistent with "conservative estimates (ie, not underestimating the possible frequency or severity) of historical events in the region in which the project is located". Please either provide evidence that the risk score applied for this sub-category is consistent with a conservative estimate of historical events, or revise the risk score to reflect a conservative estimate.

Client Response 2: Given the evidences provided the risk score was reviewed to insignificant, less than every 10 years (score of 2) with a mitigation of 0.5, given the project has preventive measures in place, as described in the NPRR. NPRR was updated accordingly; file name is UMFP NPRR VCSv3.1 140429.doc.

Auditor Response 2: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140429") and assessed the new information regarding the estimation of the significance and likelihood for each of the natural risk factors:

b) Pest and Diseases: According to the revised NPRR, the significance has been revised from "No loss" to "Insignificant". As confirmed through the available records on pest and diseases the number of pest events are scarce. According to the database in 17 years there were 5 events that were minor and constrained geographically caused by Giant conifer aphids. As confirmed during the site visit, these events are rare and when they appear, they disappear quickly with the first rains that "clean" the tree tops. Since these records cover only 17 years, the project entity has provided additional evidence to support the likelihood and significance of pest and diseases. The records from the government plantations of South Hill, provide values for the period 2000-2014, and show that only one pest event occurred in year 2009-2010 that covered 874 ha. According to Ngaga (2011) Sao Hill plantations cover around 70,000 ha, meaning that the referred pest event would be equivalent to 1.2% of the total area, and probably less than that in carbon stocks, in a period of 17 years. Based on this data, and assuming that the 17-year-old data could be used to infer the 100 years, this would represent a significance of "Insignificant" and a likelihood of "Every 10 to less than 25 years", i.e. risk of 1. The project proponent has assumed a significance of "Insignificant" and a likelihood of "Less than 10 years", i.e. risk of 2. Hence, the audit team deems that this is a conservative assumption.

Moreover, the project proponent has revised the mitigation score and is claiming "Prevention measures applicable to the risk factor are implemented". As confirmed during the site visit, the project proponent has in place a pest and disease management plan with clear procedures for monitoring, detection and action. The project proponent provided evidence of the effective implementation of this plan during the site visit and it was further confirmed its implementation through interviews with relevant staff in charge. Hence, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.22 dated 03-05-2014

Standard Reference: AFOLU Non-Permanence Risk Tool Version 3.2, §2.4.1(4)

Document Reference: NPR Report Version 1.0

Finding: Requirement:

According to the AFOLU Non-Permanence Risk Tool, Version 3.2 §2.4.1(4) "All natural risk factors applicable to the project shall be assessed using Table 10. AFOLU projects shall assess at a minimum fire, pest and disease outbreaks, extreme weather events such as hurricanes, and geological risk such as earthquakes and volcanoes".

Evidence and Information Request:

The non-permanence risk report provides an analysis of extreme weather events. However, information on the risk of windthrow has not been discussed in the report.

Client Response: In southern highlands wind damage is mainly a concern during the rainy season as a consequence of storms. For this region there is little information available related to wind damage and specifically windthrow. However there is a study (file name is "1994 Munishi-Chamshama_A study of wind damage on Pinus patula stands.pdf") for Pinus patula in the region that analyses wind damage in pine stands. The study found a positive relation between wind damage and height/diameter ratio, highlighting overstocking as a major factor for wind damage. Recommendations suggest wider spacings (3mx3m) and timely thinnings to promote diameter growth and increase stem stability. No studies found for Eucalyptus species in Tanzania. Additionally a request for information was made to the SHFP, given that this Government plantation is the oldest in the region. Few records were retrieved: no records of wind damage in SHFP but for 2013 and 2014 wind velocity was recorded on a monthly basis and was below 30km/h and thus not constituting a threat.

Over the 17 years of project implementation, Uchindile and Mapanda plantations have no records of windthrow/wind damage. UMFP stands have been planted at 2.5mx2.5m or 3mx3m and follow a clearly defined thinning schedule. More over the above study mentions that wind damage in Pinus patula increases for stands older than 12 years; in UMFP no wind damage has been observed even for older pine stands. As for eucalyptus, in some young poorer stands, it was observed that some trees were bent, but they are expected to fully recover as they grow. Furthermore, UMFP is a FSC certified forest and as such implements best management practices. Therefore, given the evidences provided it is conservative to assume that the risk of windthrow for UMFP has a no loss significance and a likelihood of every 10 to less than 25 years (given that no loss has been observed over 17 years).

Auditor Response: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140402") and assessed the new information regarding the estimation of the significance and likelihood for the wind throw risk factor. As confirmed during the site visit, there are no records for this type of risk and staff were not aware of these events indicating that these events are uncommon in the project area, at least in the recent past. The project entity refers to Munishi-Chamshama's (1994) "A study of wind damage on Pinus patula stands" and on the lack of records in order to justify the significance is "No Loss" according to AFOLU Non-Permanence Risk Tool. However, Munishi-Chamshama (1994) mentions that wind throw incidence is not uncommon in the Kiwira Forest Plantation (which is located in the Southern Highlands) and concludes that damage can reach 50% of the trees at the end of the rotation. The above evidence suggest that this natural risk is present in the region. Considering this and that there are no records that cover at least 20 years, the AFOLU Non-Permanence Risk Tool requires that "likelihood and significance shall be determined based on conservative estimates (ie, not underestimating the possible frequency or severity) of historical events in the region in which the project is located". However, the assumed value is the actual risk has been estimated considering a significance of "No Loss", which is not a conservative estimate (particularly given available information regarding prior wind damage in Tanzania). Please either provide evidence that the risk score applied for this sub-category is consistent with a conservative estimate of historical events, or revise the risk score to reflect a conservative estimate.

Client Response 2: Given the evidences provided the risk score was reviewed to insignificant, every 10 to less than 25 years (score of 1) with a mitigation of 0.5, given the project has preventive measures in place. We would like to point out that the study referenced outlines overstocking and lack of silvicultural management as a major factor for windthrow damage, which is not the case at UMFP. NPRR was updated accordingly; file name is UMFP NPRR VCSv3.1 140429.doc

Auditor Response 2: a) The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140428") and assessed the new information regarding the estimation of the significance and likelihood for the wind throw risk factor. According to the revised NPRR, the significance has been revised from "No loss" to "Insignificant". As confirmed during the site visit, there are no records for this type of risk and staff were not aware of these events indicating that these events are uncommon in the project area, at least in the recent past. Since there are no records, the project entity has provided additional evidence to support the likelihood and significance of wind throw. The records from the government plantations of South Hill, do not provide values for the period 2014-2000, showing that this natural risk is uncommon. According to Munishi-Chamshama (1994) wind throw incidence is not uncommon in the Kiwira Forest Plantation (which is located in the Southern Highlands) and concludes that damage can reach 50% of the trees at the end of the rotation. The above evidence from Munishi-Chamshama (1994) suggests that the cumulative damage in 30 years would be 50% of the trees, so assuming that this data could be used to infer the 100 years, this would represent a significance of "Minor (5% to less than 25% loss of carbon stocks)" and a likelihood "Every 25 to less than 50 years", i.e. risk equal to 1. The project proponent has assumed a significance of "Insignificant" and a likelihood of "Every 25 to less than 50 years", i.e. risk of 1. Hence, the audit team deems that this is not a conservative estimate as data from Munishi-Chamshama (1994) gives the same risk. Hence, this non-conformity remains unresolved.

b) Moreover, the project proponent has revised the mitigation score and is claiming "Prevention measures applicable to the risk factor are implemented". Munishi-Chamshama (1994), found a positive relation between wind damage and height/diameter ratio, highlighting overstocking as a major factor for wind damage. The stands studied were overstocked due to lack of proper silvicultural management (thinning). Recommendations from Munishi-Chamshama (1994) suggest wider spacing (3mx3m) and timely thinning to promote diameter growth and increase stem stability. As confirmed by the audit team, thinning is done in a timely manner, which would prevent wind throw at a certain level. Therefore, the audit team deems that it is acceptable to claim a mitigation factor for this natural risk.

Because item (a) has not been fully resolved, the finding remains open.

Client Response 3: This has been updated in the NPRR. File name is UMFP NPRR VCSv3.1140404.doc under 3rd submission. Additional review of the Munishi-Chamshama (1994), so we agree that the risk rating can be Major as Munishi-Chamshama(1994) is the only document available. Update risk rating in Dropbox \UMFP VCS 2013 Verification\3rd submission 140502, file name UMFP NPRR VCSv3.1 140508, changing the total risk to 10(6)

Auditor Response 3: Additional justification has been provided for the claimed risk rating. However, on the basis of the information provided, the claimed likelihood and significance for the windthrow risk are not consistent with the requirements of the AFOLU Non-Permanence Risk Tool. Therefore, this New Information Request has been closed and another finding, NCR 2013.28, has been opened.

Closing Remarks: The Client's response adequately addresses the finding.

OFI 2013.23 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.1.1

Document Reference: SOP 20 Permanent Sample Plot Establishment

Finding: Requirement:

According to §3.1.1 of the VCS Standard 3.4 “projects shall be guided by the principles set out in Section 2.4.1” which include the principle of accuracy (i.e., reduce bias and uncertainties as far as is practical).

Opportunity for Improvement:

During the site visit SCS was able to check the monitoring system and its controls. As part of this verification, it identified some issues which were raised as NCR and will be corrected before the issuance of the verification statement. Other issues were identified which may lead to a material misstatement in future verifications, and which represent areas of improvement:

a) Height of measurement of DBH: As part of the site visit it was observed that measurements of DBH were made consistently on a blue mark which represented the height of 1.3 m. However, it was confirmed as part of the on-site assessment that on many trees this mark was in reality at a lower height, especially in PSPs located in steep slopes (in some cases, this problem may have been exacerbated by a conflict between the requirement to have the blue paint face the PSP center and the requirement to measure breast height at 1.3 m above the ground on the uphill side of the tree). In order to confirm whether this represented a material misstatement, DBH of 13 PSPs were re-measured at the height defined by the blue mark and at 1.3 m from mineral soil and it was determined that this error caused a bias of 0.4% which is not material. Furthermore, it was deemed that this error may not be material at the current verification as the error could be offset by the fact that re-measurements in each monitoring period are conducted at the height of the blue mark, regardless of its height. However, this might represent a future risk of material misstatement.

b) Height measurement: 21 PSPs were re-measured and no systematic errors in the height measurement were observed. However, in some PSPs it was confirmed that height of the previous measurement was over-estimated, probably due to the incorrect operation of the Vertex. It was observed during the re-measurements that heights were not always taken along the contours of the slope (as prescribed by Standard Operating Procedure 20) but were sometimes taken from the down-hill side of the tree.

c) Size of PSP: 21 PSPs were re-measured during the site visit and it was identified that 5 trees were erroneously included within the PSPs and that 9 trees were erroneously excluded. As it was observed during the site visit, possible reasons could be: i) Standard Operating Procedure 20 states that “Edge trees will be identified and included/excluded with great care”, but does not provide a clear definition of what constitutes an edge tree which would require a careful measurement with the tape instead of the Vertex; ii) Standard Operating Procedure 20 states that “On steep slopes a correction factor will be applied for the slope percentage as measured along the line of measurement”, but this procedure appeared not to be fully implemented, even in cases when it would have been the best option; iii) as part of the re-measurement a verification of the border (i.e., edge) trees is not conducted; iv) QA procedures do not include the confirmation of the PSP size.

d) Data transfer: Discrepancies were identified amongst the different datasets and datasets were incomplete and inaccurate in some cases. These discrepancies could have been avoided through systematically applied QC/QA procedures.

e) PSP data sheet: Some of the errors that have been identified were linked to the fact that the species were not recorded in the field data sheets.

f) SOP on monitoring of compartment boundaries: It was confirmed that the SOPs for updating compartment boundaries or verification of compartment information were not fully implemented.

Client Response: GRL has taken this into account and will follow the recommendations provided. Some improvements like a revision of the Inventory guidelines are already underway.

Auditor Response: While responses to Opportunities for Improvement are not required, the audit team appreciates the willingness of the client to work to strengthen the monitoring program.

Closing Remarks: The Client's response adequately addresses the finding.

NIR 2013.24 dated 03-05-2014

Standard Reference: VCS Standard Version 3.4, §3.1.5,

Document Reference: VCS MR Version 1.0

Finding: Section 3.1.5 of the VCS Standard requires that "Where projects apply methodologies that permit the project proponent its own choice of third party default factor or standard to ascertain GHG emission data and any supporting data for establishing baseline scenarios and demonstrating additionality, such default factor or standard shall meet with the requirements set out in Section 4.1.7(1)." Section 4.1.7(1) requires that "Where the methodology uses third party default factors and/or standards, such default factors and standards shall meet with the requirements for data set out in Section 4.5.6, mutatis mutandis." Section 4.5.6(2) of the VCS Standard requires that "Data collected from secondary sources shall be available from a recognized, credible source and must be reviewed for publication by an appropriately qualified, independent organization or appropriate peer review group, or be published by a government agency."

Regarding the wood density values that are used in the quantification of GHG emission removals, the monitoring report states that "The wood density values are species-specific mean values (*Pinus patula* and *Eucalyptus saligna*) from a Tanzanian study representing similar climatic conditions." Please provide evidence that the "Tanzanian study" is a recognized, credible source that has been reviewed for publication by an appropriately qualified, independent organization or appropriate peer review group, or been published by a government agency.

Client Response: The Commercial Timbers of Tanzania is a comprehensive study developed by the Tanzanian Research Institute, a government agency; the study uses data from its own research work plus other official sources like the Kenyan Forest Department. A copy of the book is provided for reference (pdf file The commercial timbers of Tanzania, Bryce Revised Edition, 1999)

Auditor Response: The audit team checked the publication where the basic densities are sourced from ("The commercial Timbers of Tanzania, Bryce Revised Edition" (1999)) and confirmed it has been published by the Tanzania Forestry Research Institute which is a government institution. Therefore, the audit team is able to confirm that the applied default value "has been published by a government agency", thus confirming that it is sourced from a credible source as required by §3.1.5 of the VCS Standard. Therefore, this new information request may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.25 dated 05-05-2014

Standard Reference: AFOLU Non-Permanence Tool, Version 3.2, §2.5.1

Document Reference: NPR Report Version 2.0

Finding: Requirement:

Section 2.5.1 of the AFOLU Non-Permanence Tool states that the overall risk rating shall be rounded up to the nearest whole percentage.

Evidence and non-conformity:

The audit team checked the latest version of the NPRR (c.f. "UMFP NPRR VCSv3.1 140429") and confirmed that the overall risk rating has not been rounded up.

Client Response: [The client has provided a revised NPRR and confirmed through email that all issues were addressed]

Auditor Response: The audit team checked the revised version of the NPRR (c.f. "UMFP NPRR VCSv3.1 140506") and confirmed that now the overall risk has been rounded-up. Therefore, this non-conformity may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.26 dated 05-05-2014

Standard Reference: VCS Monitoring Report Template Version 3.3, §3.2

Document Reference: VCS MR Version 2.0

Finding: Requirement:

Section 3.2 of the VCS Monitoring Report Template requires to provide in the field “Value monitored” the estimated value for the data/parameter.

Evidence and non-conformity:

The audit team checked the MR (c.f. “UMFP MR VCSv3.3 140403”) and confirmed that the estimated value for parameter “Area burnt by fire” is not consistent with the GHG accounting spreadsheet (c.f. “UMFP Verification 2013 140428”).

Client Response: [The client has provided a revised MR and confirmed through email that all issues were addressed]

Auditor Response: The audit team checked the revised MR (c.f. “UMFP MR VCSv3.3 140506”) and confirmed that the estimated value for parameter “Area burnt by fire” is now consistent with the GHG accounting spreadsheet (c.f. “UMFP Verification 2013 140506”). Therefore, this non-conformity has been resolved and this finding may be closed.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2013.27 dated 05-05-2014

Standard Reference: AR-AM0005, Version 3.0, §III.10; ‘Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks’ (version 2)

Document Reference: VCS MR Version 2.0; UMFP Verification 2013 140506

Finding: Requirement:

Section III.10 of the applicable methodology AR-AM0005 requires projects that apply default values to apply the ‘Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks’ (version 2) in order to derive conservative values. According to Section 3 (b) (ii) of these Guidelines, if the applicability of mean values of default data is not to be verified by field measurement, and a range of data is quoted, but without a standard deviation, the conservative value is that which falls half way between the mean and the limits of the range.

Evidence and non-conformity:

The audit team checked the GHG accounting spreadsheet (c.f. “UMFP Verification 2013 140428”) and confirmed that the assumed BEF for Pinus sp. is 1.3. However, the 2003 IPCC LULUCF GPG quotes an average value of 1.3 and a lower bound of the range of 1.2, therefore the half way between the mean and the limit of the range is 1.25 not 1.3. Hence, the assumed BEF in the GHG accounting spreadsheet is not in compliance with the ‘Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks’ (version 2).

Client Response: [The client has provided a revised MR and confirmed through email that all issues were addressed]

Auditor Response: The audit team checked the revised calculation spreadsheet (c.f. “UMFP Verification 2013 140506”) and confirmed that the BEF for Pinus sp. was revised from 1.3 to 1.25. Therefore, all issues have been resolved and this finding may be closed.

Closing Remarks: The Client’s response adequately addresses the finding.

NCR 2013.28 dated 05-07-2014

Standard Reference: AFOLU Non-Permanence Tool, Version 3.2, §2.4.1(1)

Document Reference: UMFP NPRR VCSv3.1 140506

Finding: Requirement:

Section 2.4.1(1) of the AFOLU Non-Permanence Tool states that "Where such data [i.e., a 20-year historical record of occurrence for the risk in question] are not available for the project area, likelihood and significance shall be determined based on conservative estimates (ie, not underestimating the possible frequency or severity) of historical events in the region in which the project is located."

Evidence and non-conformity:

The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140506") and assessed the new information regarding the estimation of the significance and likelihood for the wind throw risk factor. According to the revised NPRR, the significance is "Minor" and the likelihood is "Every 25 to less than 50 years". The audit team agrees that the assessed likelihood is appropriate, as windthrow events are unlikely to occur more than once per rotation. However, the indicated significance of the windthrow risk is not consistent with the findings of Munishi-Chamshama (1994), who found (as reported in Table 2 of that study) that overall the overall percentage of trees damaged by wind in wind-damaged stands was 25.7-40.4%. Prior estimates of wind damage, also reported in that study, had indicated damage rates of up to 72.4%. While the audit team understands that wind damage will not necessarily result in loss of carbon stock, the currently reported significance of "minor" is not consistent with the damage rates reported by Munishi-Chamshama (1994). The audit team also understands that the damage rates reported by Munishi-Chamshama (1994) were partly the result of silvicultural activities not being carried out on the prescribed schedules. The audit team understands that better silvicultural practices are being implemented in the project area, which is why the mitigation multiplier of 0.5 is understood to comply with the requirements of the AFOLU Non-Permanence Risk Tool. However, it is important to clarify that, where a 20-year historical record does not exist for the project, area, the AFOLU Non-Permanence Risk Tool requires that likelihood and significance must be based on conservative estimates of historical events in the surrounding region. As reported by Munishi-Chamshama (1994), historical events in the region in which the project is located have led to very high levels of wind damage, and conservative estimates of damage from these events (rather than the historical record since management activities began in the project area) must be used as the basis for the selected risk score.

Client Response: [The client has provided a revised NPRR and confirmed through email that all issues were addressed]

Auditor Response: The audit team checked the revised NPRR (c.f. "UMFP NPRR VCSv3.1 140508") and confirmed that it has been revised. According to the revised NPRR, the significance has been revised from "Minor" to "Major". As confirmed during the site visit, there are no records for this type of risk and staff were not aware of these events indicating that these events are uncommon in the project area, at least in the recent past. Since there are no records, the project entity has provided additional evidence to support the likelihood and significance of wind throw. The records from the government plantations of South Hill, do not provide values for the period 2000-2014, showing that this natural risk is uncommon. According to Munishi-Chamshama (1994) wind throw incidence is not uncommon in the Kiwira Forest Plantation (which is located in the Southern Highlands) and damage can reach 50% of the trees at the end of the rotation. The above evidence from Munishi-Chamshama (1994) suggests that the cumulative damage in 30 years would be 50% of the trees. The project proponent has assumed a significance of "Major" and a likelihood of "Every 25 to less than 50 years", i.e. risk of 2. Hence, the audit team deems that this is a conservative estimate. Hence, this non-conformity has been resolved and may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

NCR 2013.29 dated 05-15-2014

Standard Reference: VCS Standard Version 3.4, §3.16.6; VCS Monitoring Report Template Version 3.3, §4.4; AR-AM0005, Version 3.0, Equations B.14 and B.36

Document Reference: UMFP MR VCSv3.3 140506

Finding: Requirement:

The VCS Standard requires that "The project proponent shall use the VCS Monitoring Report Template and adhere to all instructional text within the template." Section 4.4 of the VCS Monitoring Report Template requires the following: "Quantify the net GHG emission reductions and removals, summarizing the key results using the table below." The table in Section 4.4 indicates that the "Project emissions or removals (tCO₂e)" and the "Net GHG emission reductions or removals (tCO₂e)" must be presented. Within the AR-AM0005 methodology, project emissions or removals are calculated using Equation B.14 and net GHG emission reductions or removals are calculated using Equation B.36.

Evidence and Non-Conformity:

The table in Section 4.4 of the monitoring report indicates that the "Project emissions or removals (tCO₂e)" are equal to 66,406 tCO₂e. However, this is the net change in carbon stocks, and not the "Project emissions or removals (tCO₂e)", which must (according to Equation B.14 of the methodology) equal the difference between the "Average annual change in carbon stock in living biomass of trees" and the "GHG emissions by sources within the project boundary as a result of the implementation of the A/R CDM project activity" (which includes emissions due to biomass burning). Thus, the project emissions or removals should be equal to 66,378 tCO₂e rather than 66,406 tCO₂e, as stated.

Likewise, the table in Section 4.4 of the monitoring report indicates that the "Net GHG emission reductions or removals" are equal to 66,406 tCO₂e. However, equation B.36 of the methodology requires that the "Net anthropogenic greenhouse gas removals by sinks" be calculated by subtracting baseline and leakage emissions from the "Actual net greenhouse gas removals by sinks", as referenced above. As baseline and leakage emissions are both 0 tCO₂e, the net GHG emission reductions or removals should be equal to 66,378 tCO₂e rather than 66,406 tCO₂e, as stated.

The audit team understands that the net change in carbon stocks has been correctly stated in the following language of the monitoring report: "Net change in carbon stocks is equal to 66,406 tCO₂". The audit team also understands that the calculation of VCUs in the project's Excel workbook is correct. However, the information presented in the table in Section 4.4 of the monitoring report is not consistent with the requirements of the VCS Monitoring Report Template.

Client Response: The mistake was corrected, and an update version of the monitoring report is in dropbox, with the following name UMFP MR VCSv3.3 140516.doc

Auditor Response: The audit team checked the revised MR (c.f. "UMFP MR VCSv3.3 140516") and confirmed that Section 4.4 has been revised. Now both the "Net GHG emission reductions or removals" and "Project GHG emissions or removals" are set to 66,378 tCO₂e, which is consistent with the verified project's Excel workbook. Therefore, the audit team is able to confirm that the MR is in conformance with the VCS Monitoring Report Template and that this finding has been resolved. Hence, this finding may be closed.

Closing Remarks: The Client's response adequately addresses the finding.

APPENDIX B: MARKET LEAKAGE ASSESSMENT

In accordance with Section 3.6.4 of the AFOLU Requirements, the quantity of market leakage caused by the project was assessed at verification. The information upon which the market leakage assessment was based is contained within the monitoring report. The market leakage assessment findings and conclusion are as follows.

The methodology AR-AM0005 Version 3.0, which is the methodology used for quantification of GHG emission removals (as stated in the monitoring report) does not identify market leakage as a potential source of leakage.

In summary, the total quantity of market leakage emissions is estimated to be 0 tCO₂e over the monitoring period. The audit team has concluded that the reporting of market leakage emissions is in conformance with the VCS rules and the methodology.