



Voluntary Carbon Standard 2007

Verification Report

Report No. 1261941

Name of Verification Company:	Date of the issue:
TÜV SÜD Industrie Service GmbH	04 August 2010
Report Title:	Approved by:
Verification Report: Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania	TÜV SÜD Industrie Service GmbH; Certification Body "Climate and Energy"
Client:	Project Title:
Green Resources Ltd. Uhuru Road/P. O. Box 4730 Mwalimu House Dar es Salaam United Republic of Tanzania	Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania

Summary:

TÜV SÜD has performed the initial and first verification of the VCS project activity "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania".

The project is designed under the AFOLU project category of Afforestation, Reforestation and Revegetation (ARR). In the first monitoring period from 01 Jan 2002 – 30 Nov 2008, 4089 ha of grasslands were reforested with commercial tree species (*Pinus Patula* and *Eucalyptus spp*) through direct planting.

The verification was performed following the guidance and criteria of the VCS 2007.1 Standard as well as the AR-AM 0005 (Version 03) CDM methodology and respective tools.

The management of Green Resources Ltd. is responsible for the preparation of the GHG emissions reduction data and the reported GHG emissions reductions.

TÜV SÜD conducted a document review, followed by a site visit to verify the information submitted by the project participants regarding the present verification period. Based on the assessment carried out, the verifier confirms that the project has been implemented and operated in accordance with the description given in the provided PD and the selected approved CDM methodology AR-AM0005 version 03.

Deviations of the monitoring plan were implemented in compliance with latest guidance from the CDM Executive Board (EB) regarding AR-CDM methodologies and are thus also fully applicable under VCS as per VCS guidance.

After closing out the requests, TÜV SÜD confirms that the monitoring was carried out in an appropriate manner. The GHG removals are calculated without material misstatements. The calculations are based on inventory results from permanent sample plots.

TÜV SÜD's opinion refers to the project's GHG removals and emissions reported by the PP. GHG removals and emissions are determined based on the project's monitoring plan and its associated documents and the valid and verified baseline.

Based on the information seen and evaluated TÜV SÜD can confirm that the implementation of the project resulted in 139,358 tCO₂-e of emission reductions during the verification period 01 Jan 2002 – 30 Nov 2008, considering a 40% buffer which ensures the permanence of the above mentioned amount according to VCS. The buffer was verified by TÜV SÜD according to the available VCS guidance, and is subject to a second approval by a VCS accredited verifier.

Work carried out by:

Number of pages:

Martin Schröder (Assessment Team Leader)
Sebastian Hetsch (GHG Auditor)
Hubertus Schmidtke (GHG Auditor)

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Abbreviations

AR-AM	Approved Methodology for Afforestation / Reforestation
ARR	Afforestation, Reforestation, Revegetation
AFOLU	Agriculture, Forestry and Other Land Use
CAR	Corrective Action Request
CB	TÜV SÜD Certification Body "climate and energy"
CDM	Clean Development Mechanism
CR	Clarification Request
DOE	Designated Operational Entity
EB	Executive Board at the UNFCCC
EF	Emission Factor
EIA	Environmental Impact Assessment / Environmental Assessment
ER	Emission Reduction
FAR	Forward Action Request
GHG	Green House Gas(es)
GIS	Geographic Information System
GPG	Good Practice Guidance
GPS	Global Positioning System
GRL	Green Resources Limited
IPCC	Intergovernmental Panel on Climate Change
IRL	Information Reference List
KP	Kyoto Protocol
LULUCF	Land-Use, Land-Use Change and Forestry
MP	Monitoring Plan
NGO	Non Governmental Organisation
PD	Project Document
PP	Project Participant
SOP	Standard Operating Procedure
TÜV SÜD	TÜV SÜD Industrie Service GmbH
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reduction
VCS	Voluntary Carbon Standard

1 Introduction

1.1 Objective

Green Resources Ltd has commissioned an independent verification by TÜV SÜD Industrie Service GmbH (TÜV SÜD) of its VCS project activity: "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania".

The objective of the verification work is to comply with the requirements of the Voluntary Carbon Standard (VCS) 2007.1, which is in line with paragraph 62 of the UNFCCC CDM Modalities and Procedures. According to this assessment TÜV SÜD shall:

- ensure that the project activity has been implemented and operated as per the registered PDD "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania" Version 06, dated 07 July 2009, and that all physical features (technology, project equipment, monitoring and metering equipment) of the project are in place,
- ensure that the published MR and other supporting documents provided are complete, verifiable and in accordance with applicable VCS requirements,
- ensure that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology,
- evaluate the data recorded and stored as per the CDM methodology "Afforestation and reforestation project activities implemented for industrial and/or commercial uses", AR-AM0005 Version 03 as well as per respective tools.

1.2 Scope and Criteria

The verification scope encompasses an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the Designated Operational Entity. The verification is based on the submitted monitoring report, the validated project design documents including its monitoring plan and validation report, the applied monitoring methodology, relevant decisions, clarifications and guidance from the VCS and any other information and references relevant to the project activity's resulting emission reductions. These documents are reviewed against the requirements of the VCS Standard 2007.1 related rules and guidance.

TÜV SÜD has applied a rule-based approach for the verification of the project. The principles of accuracy, completeness, relevance, reliability and credibility were combined with a conservative approach to establish a traceable and transparent verification opinion.

The verification considers both quantitative and qualitative information on emission reductions.

The verification is not meant to provide any consultancy towards the client. However, stated requests for clarifications, corrective and/or

forward actions may provide input for improvement of the monitoring activities.

1.3 VCS Project Description

Project activity: "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania"

Project Participants: Green Resources Ltd. and Green Resources AS.

Location of the project: The project boundary includes 10,814 ha, 7,252 ha in Uchindile and 3,562 in Mapanda, in the Southern Highlands of Tanzania. Detailed project location and boundary is defined in GIS files.

Date of finalized validation (by TÜV SÜD): 17 July 2009

Starting date of the crediting period: 01 January 2002

The project activity is the reforestation of 10,814 ha of grass land with commercial tree species through direct planting in the districts of Kilombero, Morogoro Region and Mufindi, Iringa Region. The selected species are Eucalyptus (*Eucalyptus Saligna*, *E. Globulus*, *E. Camadulensis*) and Pine (*Pinus Patula*). Until the end of the first monitoring period (30 Nov 2008) 4089 ha were reforested.

The overall objective of the project is to establish and manage forest plantations to supply wood raw material and products. Further the project aims to contribute to carbon sequestration, conservation of adjacent forest ecosystems by reducing pressure, socio-economic development of local communities and improvement of infrastructure in the region. In addition to the VCS certification, the project further aims at receiving FCS certification for sustainable forest management, which is however not subject of this validation.

The project sequestered 232,264 tons of CO₂-eq in the first monitoring period. Considering the VCS AFOLU buffer of 40%, the project generated 139,358 VCUs between 01 Jan 2002 and 30 Nov 2008.

1.4 Level of Assurance

The level of assurance of this report is defined as limited. Furthermore, TÜV SÜD would like to point out that based on the process and procedures conducted as part of this verification, there was no evidence that indicates that this GHG assertion

- is not materially correct and is not a fair representation of the GHG data and information, and
- was not prepared in accordance with the related VCS 2007 Standard on GHG quantification, monitoring and reporting.

2 Methodology

2.1 Verification Process

The verification process is based on the approach depicted in the UNFCCC CDM Validation and Verification Manual.

Standard auditing techniques have been adopted for the verification process. The verification team performs first a desk review, followed by an on-site visit, which results in the formation of a protocol that includes all the findings. The next step involves the evaluation of the findings through communication with the PPs and then finally the preparation of the verification report. This verification report and other supporting documents then undergo an internal quality control by the CB "climate and energy".

2.2 Verification Team

The appointment of the verification team takes into account the technical area(s), sectoral scope(s) and relevant host country experience required amongst team members for verifying the GHG removals achieved by the project activity in the relevant monitoring period for this verification.

The verification team consisted of the following members:

Name	Qualification	Coverage of scope	Coverage of technical area	Host country experience
Martin Schröder	ATL	☒	☒	
Hubertus Schmidtke	GHG-A	☒	☒	☒
Sebastian Hetsch	GHG-A	☒	☒	☒

Martin Schröder is appointed as Assessment Team Leader and GHG-Auditor by the certification body "climate and energy". He holds a Masters degree in forestry and passed successfully internal training schemes in the field of auditing as well as the technical features of landfill and energy related projects. Before entering the company, he worked in the field of development projects in the Amazon Region and managed forestry based carbon offset projects.

Dr. Hubertus Schmidtke is a GHG auditor for forestry projects appointed by the certification body "climate and energy" of TÜV SÜD. He holds a PhD title in field of forest science who is specialized in forest inventory design and the monitoring of carbon pools in afforestation and reforestation projects. He has received extensive training in CDM related issues and has audited several afforestation and reforestation projects.

Sebastian Hetsch is a forestry expert and GHG auditor appointed by the certification body "climate and energy" of TÜV SÜD. Mr Hetsch holds a university degree in forest science. He passed extensive training on auditing of GHG projects. Before joining TÜV SÜD he worked for several years in the field of international forest policy and management.

2.3 Review of Documents

The first version of the Monitoring Report submitted by the PP is dated 23 November 2008. The MR was assessed based on all the relevant documents. The aim of the assessment in the desk review was to:

- verify the completeness of the data and the information presented in the MR,
- check the compliance of the MR with respect to the monitoring plan depicted in the registered PDD and verify that the applied methodology was carried out. Particular attention to the frequency of measurements, the quality of the metering equipment including calibration requirements, and the quality assurance and quality control procedures was paid,
- evaluate the data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

A complete list of all documents reviewed is available in annex 2 of this report.

2.4 On-site Assessment and follow-up Interviews

Between 09th and 16th December 2008, TÜV SÜD performed physical site inspections and on-site interviews with project stakeholders to:

- confirm the implementation and operation of the project,
- review the design and measurements of the permanent sample plots to obtain the monitoring parameters including calibrations of measurement tools,
- verify the boundary of the strata and thus overall area of the actual project implementation
- review the data flow for generating, aggregating and reporting the monitoring parameters,
- confirm the correct implementation of procedures for operations and data collection,
- cross-check the information provided in the MR documentation with other sources,
- review the calculations and assumptions used to obtain the GHG data for emissions in removal, in particular ensuring the required precision level
- identify if the quality control and quality assurance procedures are in place to prevent or correct errors or omissions in the reported parameters.

A list of the persons interviewed during this verification activity is included in annex 2.

2.5 Resolution of Clarification and Corrective and Forward Action Requests

The objective of this phase of the verification process is to resolve any outstanding issues which require clarification for TÜV SÜD's

positive conclusion of the achieved GHG emission reduction. The findings raised as Forward Action Requests (FARs) indicated in previous reports (validation/verification) were discussed during this phase and, issues raised in the FARs were resolved, during communications between the PP and TÜV SÜD.

In Annex 1 (verification protocol) concerns are documented that were raised in the desk review, the on-site audit assessments, the follow-up interviews and the responses provided, in order to guarantee the transparency of the verification process.

A Corrective Action Request is raised where TÜV SÜD identifies:

- non-conformities in monitoring and/or reporting with the monitoring plan and/or methodology;
- that the evidence provided is not sufficient to prove conformity;
- mistakes in assumptions, data or calculations that impair the GHG removals;
- FARs stated during validation that are not solved until the on-site visit.

A Clarification Request is raised where TÜV SÜD does not have enough information or the information is not clear in order to confirm a statement or data.

A Forward Action Request is raised where TÜV SÜD identifies that monitoring and/or reporting require special attention or adjustments for the next verification period.

Information or clarifications provided as a response to a CAR, CL or FAR could also lead to a new CAR.

2.6 Internal Quality Control

As a last step of verification, the final documentation including the verification report and annexes have to undergo an internal quality control by the Certification Body (CB) "climate and energy", i.e. each report has to be finally approved either by the Head of the CB or the Deputy. In case one of these two persons is part of the assessment team, the approval can only be given by the person who is not a part of the assessment team. Upon approval by the CB, the report will be submitted to the PP including a written assurance that the GHG emission reductions and removals have been achieved in accordance with the VCS.

3 Verification Findings

3.1 Remaining Issues

The verification team confirms that all FARs presented in the validation report have been correctly addressed by the PPs.

Two Forward Action Requests (FARs) were raised based on unsatisfactory reporting on environmental and socio-economic monitoring parameters. These parameters are however not required by VCS or the applied methodology, but were defined in the validated project document. The verifier accepted these deviations and posted the FARs listed below. The FARs do not impact the accuracy of GHG removal calculations.

However, the verifier requests to report these parameters at the subsequent monitoring and verification event.

List of FARs (see also Table 4 of Annex I):

<u>Forward Action Request No 1:</u> The environmental monitoring parameters defined in the validated PD (section F) shall be reported and included in the next monitoring report. <u>Forward Action Request No 2:</u> The socio-economic monitoring parameters defined in the validated PD (section G) shall be reported and included in the next monitoring report.
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3.2 Project Implementation

The project is implemented according to the description presented in the registered PDD. The verifier confirms, through the visual inspection that the plantations as described in the proposed CDM project activity including permanent sample plots for data collecting have been implemented in accordance with the registered PDD.

Out of the foreseen 10,814 ha to be planted until 2013, 4,089 ha have been planted until the end of the first monitoring period (IRL 32, 33), which is in line with the planting schedule outlines in the PD. 123 sample plots were established.

In the first monitoring period the amount of net anthropogenic GHG removal was significantly less than foreseen in the registered PD (518.153 t CO₂-e). The underperformance is mainly based on slower growth and higher mortality in the plantations than expected ex-ante.

3.3 Completeness of Monitoring

The implemented monitoring procedures are in line with the requirements of the validated monitoring plan as well as with the applied methodology AR-AM0005 (Version 03), except the deviations listed in section 3.2.2 below. Environmental and socio-economic parameters as defined in the PD were only partly monitored, which resulted in Forward Action Requests; these parameters are however not required by the applied methodology or the Voluntary Carbon Standard.

TÜV SÜD confirms that the implemented monitoring procedures fully satisfy the necessary criteria for a complete monitoring system and that the resulting emission reductions are calculated in a conservative and appropriate manner.

3.3.1 Compliance of the Monitoring Plan with the Monitoring Methodology

The monitoring plan is in accordance with the approved CDM methodology, AR-AM0005, Version 03, applied by the VCS project activity.

3.3.2 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in line with the monitoring plan contained in the registered PD, except minor deviations outlined below. All parameters were monitored and determined as per the Monitoring Plan (section E), except minor deviations from the Monitoring Plan:

- DBH was not measured annually, but only in the final monitoring;
- Tree height was not measured annually, but only in the final monitoring;
- Tree height is not measured for 100% of all trees in the sample plot, but only for the four biggest trees. This is in line with Malawi et al;
- Area was not measured annually, but only in the final monitoring.
- The environmental monitoring parameters defined in the validated PD (section F) were not fully monitored and reported in the monitoring report. As these parameters are however not required by the applied methodology or the VCS, the audit team accepted these deviations and requested a Forward Action to include these in the subsequent monitoring report.
- The socio-economic monitoring parameters defined in the validated PD (section G) were not fully monitored and reported in the monitoring report. As these parameters are however not required by the applied methodology or the VCS, the audit team accepted these deviations and requested a Forward Action to include these in the subsequent monitoring report.
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In conclusion, these deviations are accepted, as they do not affect the accuracy of the calculations of GHG net anthropogenic removals and are in compliance with the applied methodology.

The verification of the main parameters required by the monitoring plan is provided as follows, for further detailed parameters see Table 1 of Annex 1:

Data / Parameter:	Diameter at Breast Height (DBH)
Data unit:	cm
Description:	Diameter at Breast Height (1.3 m above ground)
Source of data used:	DBH was measured in permanent sample plots and measured with calliper. Raw data is documented in field books and then

	transferred in Excel files in the office.
Means of verification/Comments:	A random selection of sample plots were re-measured during the field visit of the verification.
Cross-check	Cross-checks were made on the basis of the ex-ante estimated values based on yield tables.

Data / Parameter:	Tree Height
Data unit:	m
Description:	Height of the tree
Source of data used:	Tree height was measured in permanent sample plots and measured with a Vertex. Raw data is documented in field books and then transferred in Excel files in the office.
Means of verification/Comments:	A random selection of sample plots were re-measured during the field visit of the verification.
Cross-check	Cross-checks were made on the basis of the ex-ante estimated values based on yield tables.

Data / Parameter:	Area of compartment
Data unit:	ha
Description:	Size of area
Source of data used:	The area per compartment was measured with GPS. After the establishment of each plantation the area was measured with hand-held GPS.
Means of verification/Comments:	During the onsite visit the area was verified through GPS points taken in the field on the boundary of a compartment. The points were compared with the boundary data submitted by the PP in a Geographic Information System (GIS).
Cross-check	Cross-checks were made based on visual observation and estimates of the area during the onsite visit. Further cross-checks were done by comparing the boundary data submitted by the PP with available satellite images (e.g. on Google Earth).

Data / Parameter:	Area burnt
Data unit:	ha
Description:	Size of area
Source of data used:	The area burnt was measured with GPS. After a fire the area was measured with hand-held GPS.
Means of verification/Comments:	During the onsite visit the area was verified through GPS points taken in the field on the boundary of a compartment. The points were compared with the boundary data submitted by the PP in a Geographic Information System (GIS).
Cross-check	Cross-checks were made based on visual observation and estimates of the area during the onsite visit.

	Further cross-checks were done by comparing the boundary data submitted by the PP with available satellite images (e.g. on Google Earth).
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3.4 Accuracy of Emission Reduction Calculations

3.4.1 Assessment of Data and Calculation of GHG Reductions

All data has been available and all the parameters have been monitored in accordance with the registered monitoring plan. As discussed in section 3.3, some parameters were monitored in a manner deviating from the Monitoring Plan, which does however not affect the accuracy of the calculations of net anthropogenic GHG removals.

The reported data have been cross-checked against other sources available as explained above in chapter 3.4.

TÜV SÜD confirms that the methods and formulae used to obtain the baseline and project GHG removals, as well as project and leakage emissions are appropriate and in line with the registered monitoring plan and applicable methodology.

It is confirmed that the monitoring report includes all relevant parameters and the monitored data at the intervals required by the methodology and PD, considering the above mentioned deviations.

All assumptions, emission factors and default values (ex-ante values from PD) used in the monitoring have been correctly justified. All the emission factors and default values are explicitly mentioned in the monitoring report.

TÜV SÜD checked and reviewed the provided Excel spreadsheet for the calculation of these parameters thoroughly and confirms that the applied spreadsheet formulas and connections are correct and in line with the indicated emission reduction calculation in the monitoring plan as well as in the validated PD and the applied methodology.

The applied default values are in line with the methodology and the registered monitoring plan and are therefore considered appropriate.

Final results were rounded and truncated in a conservative manner. Random spot checks were performed during the verification process as well as during the on-site visit to eliminate possible manual transposition errors. Based on the observations made, TÜV SÜD considers the implemented data handling and compiling system as appropriate and reliable.

The measurements and records of the installed sample plots were checked during the site visit (IRL 13, 14, 15). TÜV SÜD considers the installed sample plots well maintained and the measured data accurate within the indicated accuracy (see section below).

3.4.2 Accuracy of Emission Reduction Calculations

As defined in the Monitoring Plan and considered good practice by IPCC, the calculations of carbon sequestered per strata are determined with a maximum allowable precision level (standard error) of 10% of the mean, at 95% confidence.

In cases where the required precision level was not reached, the lower end of precision level (standard error at 95% confidence) was conservatively used for calculation of the mean, in order to avoid an overestimation of the mean amount of carbon per strata.

In summary, TÜV SÜD considers the calculation of the emission reductions for the given period accurate and reliable given the indicated range and confidence level of the validated PD.

3.4.3 Uncertainties and Risk

The risk assessment for this monitoring period was conducted according to the "Tool for AFOLU Non Permanence Risk Analysis and Buffer Determination".

Each risk category was calculated based on the VCS guidance and the input provided by the PPs. The information was validated and cross-checked through document and literature review, onsite visits of the project area and interviews conducted.

A quantitative assessment was carried out for the fire risk, while the other ARR specific and generic risk categories were assessed on a qualitative basis (Annex 1, table 3).

Overall the project is rated to fall into the risk class "medium". Following the VCS guidance, a buffer of 40% is determined, in order to conservatively cover the range of medium risks and to include the other remaining risk factors. The risk class is mainly influenced by the "medium" risk due to "project longevity" and "endorsement of the project or land use activity by local population and local/national political establishment".

The risk assessment is subject to the VCS double approval process. The final risk buffer can only be confirmed after the approval of a second verifier.

3.5 Quality of Evidence to Determine Emission Reductions

In order to verify the reported emission reductions, the audit team assessed the sample plot design and found it to be in compliance with the monitoring plan and thus with good practice according to IPCC. This ensures an unbiased source for data to calculate the net anthropogenic GHG removals with the given confidence at a required precision level.

Distribution and location of sample plots were verified during the field visit using GPS. The measurements of the sample plots were verified by the audit team during the onsite visit based review of field sheets from the project team and random re-measurement of sample plots.

Among several evidence items submitted, the onsite visit and random re-measurement of sample plots is considered relevant and reliable evidence for the GHG removals.

3.6 Management and Operational System

Based on the on-site observations and interviews, as well as the provided documents (IRL 2, 5, 6, 12, 15, 16, 27), TÜV SÜD considers the management and operational system of this project suitable. The operational structure including the identification of responsibilities is well explained in the validated PD and was confirmed on site.

Similarly, the error handling procedures as well as record keeping and filing procedures are well-defined in the PD and in the monitoring report (IRL 2, 3) and were verified on site.

In summary, the quality management and the operational system are well implemented and the responsibilities and procedures are clearly defined.

4 Double-Counting and Carbon Ownership

Based on a review of the recognized registries of VER standards and an analysis of internet sources, TÜV SÜD has not detected indications that the same project activity is included into any other standards or schemes intended to generate Voluntary Emission Reductions or renewable energy certificates. This was furthermore confirmed in writing by the project participants (IRL 34).

Nonetheless, as double-counting cannot be fully excluded based on the performed assessment, TÜV SÜD refrains from any liabilities related to the potential double-counting of carbon rights.

The right to use the generated carbon credits is considered to be held by the project participants. This conclusion has been reached based on the fact that Green Resources Ltd. is lease owner of the land and owner of the plantations, which are providing the emission reductions. This was sustained by title deeds for the project area (IRL 11). However, as the holding of carbon rights may be impacted by other legislation or contracts not subject to the audit service, TÜV SÜD refrains from any liabilities related to the legal holding of carbon rights.

5 Verification Conclusion

TÜV SÜD Industrie Service GmbH has performed the initial and first periodic verification of the CDM project: "Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania". The verification is based on the currently valid documentation of the VCS.

The management of Green Resources Ltd is responsible for the preparation of the GHG removal and emission data and the reported GHG removals on the basis set out within the project's Monitoring Plan indicated in the registered PD version 06, dated 02 July 2009 and the applied methodology AR-AM0005, Version 03.

TÜV SÜD can confirm that:

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan, considering the deviations documented in section 3.3, which have however no impact on the accuracy of the data;
- the project is implemented as planned and described in the validated Project Document;
- the reforestation generating the GHG removals are implemented as described in the Monitoring Report: 4,089 ha of 10,814 ha project area are reforested;
- the sample design used as monitoring system is in place and provides the basis to calculate GHG removals;
- the GHG removals are calculated without material misstatements;
- the monitoring plan in the Monitoring Report is as per the PD in the registered project activity;
- the monitoring plan in the registered PD is as per the applied methodology.

TÜV SÜD's opinion is based on the GHG emissions and removals reductions reported by the project, which have been both determined through the valid and registered project's baseline, its monitoring plan and its associated documents.

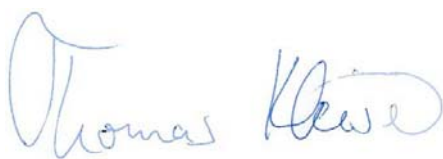
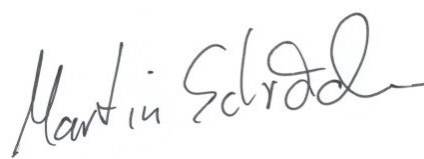
Based on the information we have seen and evaluated, we confirm the following statement:

Verified GHG removals and emissions in the monitoring period from **01 Jan 2002 to 30 Nov 2008:**

Baseline net GHG removals	0 t CO ₂ e
Actual net GHG removals	256,649 t CO ₂ e
Leakage emission	0 t CO ₂ e
Project emissions	24,385 t CO ₂ e
Net anthropogenic GHG removals:	232,264 t CO ₂ e
Buffer to ensure permanence as per VCS:	40%
Total amount of VCUs generated <i>(pending on double approval of the risk buffer)</i>	139,358 t CO₂e

Munich, 04 August 2010

Munich, 04 August 2010

Thomas Kleiser
Certification Body
"Climate and Energy"
TÜV SÜD Industrie Service GmbH

Martin Schröder
Assessment Team Leader
TÜV SÜD Industrie Service GmbH

Verification of the VCS ARR-Project: Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania

Date of completion: 04 August 2010

Annex 1: Validation Protocol

Table 1 Requirement Checklist

1. Project Activity Implementation

1.1 Project activity / Forestry measures

Checked Item	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Location(s)				
Description / Address	PDD: Reforestation in grassland area of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania Address for correspondence: Green Resources Ltd, Uhuru Road/P. O. Box 4730, Mwalimu House Dar es Salaam, United Republic of Tanzania Telephone: + 255 787 737 796 E-Mail: sangito.sumari@greenresources.no Represented by Mr. Sangito Sumari, Managing Director	PDD, MR 2, 3	☒	☒
GPS coordinates	See below for the respective project sites. WGS 84, and UTM is used. All data are transferred to UTM	31	☒	☒
AR activity				
Total Area	The project located in two discrete areas in the villages of Uchindile and Mapanda in southern Tanzania. It involves the establishment of a forest plantation on over 10'814 hectares of grassland, of which 4'089 hectares have been planted since the project began in 1997. The two main species being planted are eucalyptus (<i>Eucalyptus saligna</i>, <i>E.globules</i>, and <i>E.camadulensis</i>) and pine (<i>Pinus patula</i>). The area planted is less than the area of the plan. This is mainly caused by requirements of the FSC. All planted areas are inside the original perimeter. <u>Corrective Action Request No 1</u> During field visit it was found, that the actual planted areas do not coincide with the information in the GIS and maps. All areas shall be updated and calculations to be adopted accordingly. For completion of the verification of the project boundary, provide the DOE with digital data on	MR, onsite, 3, 31	CAR 1	☒

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Checked Item	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.																																												
	project area and high-resolution satellite images. (see also checklist section 3.1: parameters on boundary monitoring)																																															
Baseline Strata	Two baseline strata were identified, grassland with scattered trees and riverine vegetation. No monitoring of baseline strata is needed.	MR, onsite 3, 31	☒	☒																																												
Project Strata	Different strata were distinguished, based on the year of planting and the species used (9 strata in total):<table><tr><th>Strata</th><th>Uchindile</th><th>Mapanda</th><th>Total</th></tr><tr><td>Pine 1997-1999</td><td>273.8</td><td>0</td><td>273.8</td></tr><tr><td>Pine 2000-2002</td><td>99.6</td><td>0</td><td>99.6</td></tr><tr><td>Pine 2003-2005</td><td>340.7</td><td>57.4</td><td>398.1</td></tr><tr><td>Pine 2006-2008</td><td>424.2</td><td>1233.5</td><td>1657.7</td></tr><tr><td>Eucalyptus 1997-1999</td><td>161.2</td><td>129.7</td><td>290.8</td></tr><tr><td>Eucalyptus 2000-2002</td><td>112.1</td><td>97.5</td><td>209.6</td></tr><tr><td>Eucalyptus 2003-2005</td><td>326.1</td><td>148.5</td><td>474.6</td></tr><tr><td>Eucalyptus 2006-2008</td><td>566.5</td><td>97.1</td><td>663.6</td></tr><tr><td>Thinned Eucalyptus 2008</td><td>21.3</td><td>0</td><td>21.3</td></tr><tr><td>Total</td><td>2325</td><td>1764</td><td>4089</td></tr></table> Actual plantation areas are measured using GPS before planting and visibly marked in the field. For older plantations also recent (2005) geometrically referenced satellite images are used to determine the boundary of the planted areas. Additionally geometrically adjustments were conducted from GRL, which is considered adequate. However, this process of adequate delineation is not completed yet. For example in compartment 1, a gully is not yet excluded from the project area. (see also Corrective Action Request No 1 Corrective Action Request No 2	Strata	Uchindile	Mapanda	Total	Pine 1997-1999	273.8	0	273.8	Pine 2000-2002	99.6	0	99.6	Pine 2003-2005	340.7	57.4	398.1	Pine 2006-2008	424.2	1233.5	1657.7	Eucalyptus 1997-1999	161.2	129.7	290.8	Eucalyptus 2000-2002	112.1	97.5	209.6	Eucalyptus 2003-2005	326.1	148.5	474.6	Eucalyptus 2006-2008	566.5	97.1	663.6	Thinned Eucalyptus 2008	21.3	0	21.3	Total	2325	1764	4089	MR, I 2, 31	CAR 2	☒
Strata	Uchindile	Mapanda	Total																																													
Pine 1997-1999	273.8	0	273.8																																													
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Checked Item	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
	The satellite images used for the delineations of strata shall be referenced in the monitoring report. (SPOT V data for Mapanda and Google earth data used for Uchindile.)			
Operation Status during verification				
Approvals / Licenses Land tenure and carbon rights	Land tenure and carbon rights are with the project developer. No changes have occurred since validation.	DR 2, 3, 4, 11,	☒	☒
Actual Operation Status N/A	Ongoing planting ☒ Planting finalized ☐ Out of operation ☐ Reason (when out of operation): The actual area planted is less than originally planned. One reason is that due to FSC certification buffer strips along the gullies had to be excluded from the plantation; second reason is a delay in planting activities (inter alia due to difficulties with terrain and transport of staff to plantations) <u>Corrective Action Request No 3</u> The actual status of the project planting activities shall be described in the monitoring report including reasons for delay or reduction of plantation area (see also checklist section 3.1, parameters on forest establishment).	MR, onsite 2, 33	CAR 3	☒
Remarks to Special Operational Status During the Verification Period	Less area planted than originally foreseen in the PDD (4,089 ha instead of 5,535 ha indicated in the PDD), see CARs above	2	☒	☒

1.2 Organization

Checked Item	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Project Participant (s)				

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Entity / Responsible person:	Name of responsible person for monitoring: Jakob Sandven, Peter Mussami, and Jenny Herman	MR, I 2	☒	☒
CDM Project management:	Name of responsible person for CDM Project: Jenny Henman	MR, I 2	☒	☒

1.3 Quality Management System

Checked Item	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Quality Management Manual:	All standard procedures are covered by written instructions. A list on the SOP and copies of them were provided. Also FSC requires such procedures.	I 2, 35	☒	☒
Qualification and Training:	All staff is trained according to the five year training program.	MR, I 2, 35, 36	☒	☒

1.4 Remaining FARs from previous Verifications (or forwarded issues of validation report)

Remaining Requests from Previous Verifications	Summary of project owner response	Audit team conclusion
Forward Action Request No. 1: It shall be reconfirmed at verification that the title deed is still fully held by the project participant.	The title deed was presented and reviewed during the onsite visit of the audit team.	The title deed was checked during the verification and found to be in consistent with VCS requirements. Thus the Forward Action Request from the validation is settled. -

2. Data Management System

2.1 Description

Structure of data management							
Describe all the different data collection systems							
Type	Name	Responsible	Procedures	Comments	MoV* Ref.	Draft Conc.	Final Conc.
Inventory data from sampling	n/a	No person is assigned for	No procedure for	All relevant data is kept and stored. The digital datasets are kept at a central	I, DR 1, 2, 3	CAR 4	☒

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plots	(inventory sheets)	being responsible for inventory data	handling inventory data is available	server. Back-ups from the server are conducted periodically. <u>Corrective Action Request No 4</u> Provide the DOE with a written description for data management procedures (raw data archiving, protection, data transfer, and data processing) for inventory data and list the person(s) responsible.			
GPS data	GPS device Garmin etrex	No person is assigned for being responsible for inventory data	No procedure for handling inventory data is defined	<u>Corrective Action Request No 5</u> Provide the DOE with a written description for data management procedures (raw data archiving, protection, data transfer, and data processing) for GPS data and list the person(s) responsible in the project.	I, DR 1, 2, 3	CAR 5	☒
GIS	ESRI ArcGIS 9.3 is used	No person is assigned for being responsible for inventory data	No procedure for handling inventory data is defined	<u>Corrective Action Request No 6</u> Provide the DOE with a written description for data management procedures (raw data archiving, protection, data transfer, and data processing) for GIS data and list the person(s) responsible in the project.	I, DR 1, 2, 3	CAR 6	☒

2.2 Raw Data Archiving and Protection measures

Name	Description of data archiving and protection measures	Risks and comments	MoV* Ref.	Draft Conc.	Final Conc.
Inventory data from sampling plots	No description on archiving and protecting inventory data is provided.	See CAR 4	I 1, 2, 3	CAR 4	☒
GPS data	No description on archiving and protecting GPS data is provided.	See CAR 5	I 1, 2, 3	CAR 5	☒

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GIS	No description on archiving and protecting GIS data is provided.	See CAR 6	I 1, 2, 3	CAR 6	☒
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2.3 Data transfer

Description of data transfer from raw data archiving to calculation tool

Name	Description and responsibilities	Risks and comments	MoV* Ref.	Draft Conc.	Final Conc.
Inventory data from sampling plots	No procedure for transfer of inventory data and the responsible person(s) was provided.	See CAR 4 <u>Corrective Action Request No 7</u> Protection measures in the calculation tool are needed to avoid unintentional errors or data losses	I, 2, 35	CAR 4 CAR 7	☒
GPS data	No procedure for transfer of GPS data and the responsible person(s) was provided.	See CAR 5	I 1, 2, 35	CAR 5	☒
GIS	No procedure for transfer of GIS data and the responsible person(s) was provided.	See CAR 6	I 1, 2, 35	CAR 6	☒

2.4 Data Processing

Description of data processing from transferred data to final results in the calculation tool

Step	Description	Risks and comments	MoV* Ref.	Draft Conc.	Final Conc.
Consistency	Data from paper sheets used in the field, entered into an Excel table.	Volume was calculated using stand volume tables with basal area and dominant height as entry data. See CAR 4, 5 and 6	DR, I, 2, 3, 30	CAR 4, 5, 6	☒
Calculation Tool description	The results of the calculations are presented in the monitoring report. The	A MS Excel file with the calculations was provided. Calculation of basal area and average dominant	MR, I,	CAR 4, 5, 6	☒

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	calculation and intermediate steps are executed in a separate Excel-file.	height will shift from SAS to Excel. The procedures in SAS as well as in Excel were demonstrated and considered correct. See CAR 4, 5 and 6	2, 3, 30		
Transformation from transferred data to useable data and input data for further calculation		See CAR 4, 5 and 6	2, 3, 30	CAR 4, 5, 6	☒
Elimination of not plausible data	Description of procedure to eliminate non-plausible data (usage of conservative default values and assumptions)	Yearly measurements of the DBH prevent not plausible data. <u>Clarification Request 1.</u> Provide reference to the procedure for elimination of non-plausible data	1 2, 3, 30	CR 1	☒
Default parameter & ex-ante data	Default parameter & ex-ante data are presented in 3.1.	See CAR 21, 22 and CR 2	MR, 2, 3, 30	CR 2, CAR 21, CAR 22	☒
Rounding functions	Regular rounding functions for all calculations were used	n/a	DR 2, 3, 30	☒	☒
Calculation tool changes and protection measures	n/a Computers are used for calculation, see 2.2. for archiving	n/a	DR 2, 30	☒	☒

2.5 Protocol Algorithms and Results

Description of data processing from transferred data to final results in the calculation tool					
Step	Description	Risks and comments	MoV* Ref.	Draft Conc.	Final Conc.
Methodology	Formulas that should be used are given in the	<u>Corrective Action Request No 8</u>	MR	CAR 8	☒

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formulae	methodology: Ex-post net anthropogenic GHG removal by sinks = actual net GHG removal by sink – net baseline GHG removals by sinks – leakage M.31 (p. 66 AR-AM0005 V03) CER calculations: M.32 – M.37 (p. 66-67 AR-AM0005 V03) Ex-post actual net GHG removal by sink = Carbon stock changes – GHG emission by sources M.3 – M.26 (p. 44-52 AR-AM0005 V03) Leakage: M.27 – M.30 (p. 61-63 AR-AM0005 V03)	Provide reference in the MR to the formulae of the methodology for all ex-post calculations (the parameters that need to be calculated are listed in checklist section 3.1. and the monitoring plan of the PDD).	2, 30																																																						
Describe the use and results of each formula in the calculation tool	Ex-post actual net GHG removal by sink: Results for total carbon stock per strata is presented in the MR table C.2.1: <table><tr><th>Strata</th><th>Total Carbon Stock per Strata</th></tr><tr><td>Pine 1997-1999</td><td>48,425.4</td></tr><tr><td>Pine 2000-2002</td><td>10,971.9</td></tr><tr><td>Pine 2003-2005</td><td>11,012.5</td></tr><tr><td>Pine 2006-2008</td><td>0</td></tr><tr><td>Eucalyptus 1997-1999</td><td>38,856.7</td></tr><tr><td>Eucalyptus 1997-1999 MFP</td><td>30,122.4</td></tr><tr><td>Eucalyptus 2000-2002</td><td>44,115.1</td></tr><tr><td>Eucalyptus 2003-2005</td><td>9,216.3</td></tr><tr><td>Eucalyptus 2006-2008</td><td>0</td></tr><tr><td>Eucalyptus Harvest</td><td>4,223.7</td></tr><tr><td>Total</td><td>196,944</td></tr></table> Project Emission: Table D.3.1 shows non-transport fuel emissions for Mapanda <table><tr><th>YEAR</th><th>Non-Transport Emissions (tCO2e)</th><th>Fuel Mapanda</th><th>Non-transport Fuel Mapanda (tCO2e)</th></tr><tr><td>1997</td><td>118.530.921</td><td></td><td>199.7</td></tr><tr><td>1998</td><td>155.197.908</td><td></td><td>199.8</td></tr><tr><td>1999</td><td>145.713.234</td><td></td><td>199.9</td></tr><tr><td>2000</td><td>27.881.736</td><td></td><td>200</td></tr><tr><td>2001</td><td>35.062.448</td><td></td><td>200.1</td></tr><tr><td>2002</td><td>73.721.832</td><td></td><td>200.2</td></tr></table>	Strata	Total Carbon Stock per Strata	Pine 1997-1999	48,425.4	Pine 2000-2002	10,971.9	Pine 2003-2005	11,012.5	Pine 2006-2008	0	Eucalyptus 1997-1999	38,856.7	Eucalyptus 1997-1999 MFP	30,122.4	Eucalyptus 2000-2002	44,115.1	Eucalyptus 2003-2005	9,216.3	Eucalyptus 2006-2008	0	Eucalyptus Harvest	4,223.7	Total	196,944	YEAR	Non-Transport Emissions (tCO2e)	Fuel Mapanda	Non-transport Fuel Mapanda (tCO2e)	1997	118.530.921		199.7	1998	155.197.908		199.8	1999	145.713.234		199.9	2000	27.881.736		200	2001	35.062.448		200.1	2002	73.721.832		200.2	Corrective Action Request No 9 Provide details for each step in the calculation for <i>ex-post actual net GHG removal by sink</i> , as indicated in equations in the methodology (M.31-M.37). Provide data by strata. (The parameters that need to be calculated are listed in checklist section 3.1. and the monitoring plan of the PDD). Carbon captured in the baseline is not included in the calculations leading to table C.2.1. (see equation M.5 of the Methodology) Corrective Action Request No 10 Provide units for Table C.2.1 in the MR Corrective Action Request No 11 Follow steps given in the methodology to calculate project emissions (M.19 – M.25) Provide data on project emission per strata, including Uchindile as requested in Corrective Action Request No 24. Corrective Action Request No 12 Provide details for each step in the calculation	MR, I 1, 2, 30	CAR 9, 10, 11, 12, 13	☒
Strata	Total Carbon Stock per Strata																																																								
Pine 1997-1999	48,425.4																																																								
Pine 2000-2002	10,971.9																																																								
Pine 2003-2005	11,012.5																																																								
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YEAR	Non-Transport Emissions (tCO2e)	Fuel Mapanda	Non-transport Fuel Mapanda (tCO2e)																																																						
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1999	145.713.234		199.9																																																						
2000	27.881.736		200																																																						
2001	35.062.448		200.1																																																						
2002	73.721.832		200.2																																																						

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	2003	53.982.942	200.3	for ex-post leakage, as indicated in the methodology (The parameters that need to be calculated are listed in checklist section 3.1.). <u>Corrective Action Request No 13</u> Calculations on accuracy are missing. Calculations on accuracy have to be conducted and inserted in the MR			
	2004	55.558.884	200.4				
	2005	6.302.993	200.5				
	2006	56.398.852	200.6				
	2007	6.352.406	200.7				
	Ex-post net anthropogenic GHG removal by sinks: In table D.4.1. an overview table for the entire project is given, stating a number of 186,256 tonnes CO ₂ e.						
Report any additional calculation use to obtain values use in the formulae	Review all the steps follow from the emission reduction result to the raw data and include any further calculation use as intermediate formulae to obtain a parameter included in the methodology formulae example			See CAR 8-13	MR 2, 30	CARs above	☒

3. Monitoring Plan Implementation

3.1 List of Parameter to be monitored

ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
Project boundary						
E.1.1.01.			Project ID <u>Corrective Action Request No 14</u> Provide information on the variables concerning the project boundary, as defined in the monitoring plan <u>Corrective Action Request No 15</u> The boundaries of the compartments, in particular in Mapanda, are not consistent with the boundaries as found onsite (see Corrective Action Request No 1). Especially changes of the borders as consequences of FSC rules were not yet taken into account. The boundaries have to be adopted in the report and new area values used for the calculations of carbon sinks.	MR 2, 32	CAR 14 CAR 15	☒
E.1.1.02.			Project location, see Corrective Action Request No 14 and CAR 1	MR 2, 32	CAR	☒

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
E.1.1.03.			Compartment ID, see Corrective Action Request No 14	MR 2, 32	CAR	☒
E.1.1.04.			Beacon ID, see Corrective Action Request No 14 and CAR 1	MR 2, 32	CAR	☒
E.1.1.05.			Bearing, see Corrective Action Request No 14	MR 2, 32	CAR	☒
E.1.1.06.			Distance, see Corrective Action Request No 14	MR 2, 32	CAR 14	☒
E.1.1.07.			Natural ID, see Corrective Action Request No 14	MR 2, 32	CAR	☒
Forest establishment						
E.1.2.01			Compartment ID <u>Corrective Action Request No 16</u> Provide information on the variables on forest establishment, as defined in the monitoring plan	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.02			Compartment location, see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.03			Compartment size, see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.04			Compartment composition, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.05			Marking of planting spots, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
E.1.2.06			Areas cleaned (screefed), see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.07			Volume of pit, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.08			Height of seedlings, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.09			Area weeded, see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.10			Area slashed, see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.11			Area planted per stratum is given in section B2 of the MR. See CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.12			Number of trees survived, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.13			<i>Survival rates</i> are listed in annex 3 <u>Corrective Action Request No 17</u> Provide information on survival rates of planted trees by strata	MR 2, 5, 6, 31, 32	CAR 17	☒
E.1.2.14			Stock count, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.15			Stocking rate, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
E.1.2.16			Area of fireline and fire breaks, see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.17			biomass stock per unit area before slash and burn, see CAR 1, 15, 16	MR	CAR 1,	☒

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
				2, 5, 6, 31, 32	15, 16	
E.1.2.18			Amount of organic fertilizer N applied per unit area: Data on use of fertilizer is provided in the MR (separate for Mapanda and Uchindile) in tables D.2.1 and D.2.2 <u>Corrective Action Request No 18</u> Provide information on amount of fertilizer N applied by unit area and strata	MR 2, 5, 6, 31, 32	CAR 1, 15, 18	☒
E.1.2.19			area of land with N applied, see CAR 1, 15, 16	MR 2, 5, 6, 31, 32	CAR 1, 15, 16	☒
E.1.2.20			Amount of organic fertilizer N applied, see Corrective Action Request No 16	MR 2, 5, 6, 31, 32	CAR 16	☒
Forest Management						
E.1.3.02			Area of thinning <u>Corrective Action Request No 19</u> Provide information on the variables on forest management, as defined in the monitoring plan.	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.03			Biomass stock lost per ha during thinning, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.04			Harvesting location, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.05			Area of harvest, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.06			Volume harvested, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.07			Area replanted, see and CAR 1 and 19	MR 2, 5, 6, 31, 32	CAR 1, 19	☒

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
E.1.3.08			Area allowed to regenerate/re-sprout, see CAR 1 and 19	MR 2, 5, 6, 31, 32	CAR 21	☒
E.1.3.09			Area affected by diseases and pest, see CAR 15, Corrective Action Request No 19 and Corrective Action Request No 32	MR 2, 5, 6, 31, 32	CAR 15, 19, 32	☒
E.1.3.10			Area burnt by fire, see CAR 15, 19, 32	MR 2, 5, 6, 31, 32	CAR 15, 19, 32	☒
E.1.3.11			Location burnt, see CAR 19, 32	MR 2, 5, 6, 31, 32	CAR 19, 32	☒
E.1.3.12			Volume of biomass lost due to fire, see Corrective Action Request No 19 and Corrective Action Request No 32	MR 2, 5, 6, 31, 32	CAR 19, 32	☒
E.1.3.13			Area re-growth after fire, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.14			Area of fire breaks , see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.15			Amount of diesel used for fire protection, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.16			Amount of diesel consumed in machinery use for site prep, thinning or logging (excluding transportation) , see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.17			amount of gasoline consumed in machinery used for site prep, thinning or logging(excluding transportation) , see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.18			Emission factor for diesel, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒
E.1.3.19			Emission factor for gasoline, see Corrective Action Request No 19	MR 2, 5, 6, 31, 32	CAR 19	☒

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E.1.3.20			Emission from fossil fuel (excluding from transportation) use within project boundary: <u>Corrective Action Request No 20</u> Only general figures for diesel and petroleum emissions are given in table D.2.3. Specify according to the parameters defined in the monitoring plan.	MR 2, 5, 6, 31, 32	CAR 20	☒
Baseline net GHG removals (if required)						
Not required				DR	☒	☒
Actual net GHG removal by sinks						
2.1.1.01			Stratum ID <u>Corrective Action Request No 21</u> Provide information on the variables on actual net GHG removals, as defined in the monitoring plan (most variables are needed by stratum)	MR 2, 5, 6, 31, 32	CAR 21	☒
2.1.1.02			Sub-stratum ID, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.03			A confidence level of 95% is used in the ex-post carbon stock calculations (see MR C.3.2), see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.04			Accuracy, see Corrective Action Request No 21 and CAR 13	MR 2, 29, 30, 32	CAR 21, 13	☒
2.1.1.05			Standard deviation of each stratum, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.06			Number of sample plots are provided in table C.1.1 of MR,	MR 2, 5, 6, 29, 30, 32	☒	☒
2.1.1.07			Sample plot ID, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒

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2.1.1.08			Plot location, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.09			Tree species, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.10			Age of plantation, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.11			Number of trees, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.12			Diameter at breast height (DBH) is measured on sample plots, see checklist section 3.3 and Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.13			Mean DBH, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.14			Tree height is measured on sample plots und found imprecise during onsite visit, see checklist section 3.3 and Corrective Action Request No 30	MR 2, 5, 6, 29, 30, 32	CAR 30	☒
2.1.1.15			Mean tree height, see Corrective Action Request No 30 and Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.16			Merchantable (Standing) volume, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
2.1.1.17			<i>Wood Density</i> was determined on a sample base for the two major tree species: <i>Pinus patula</i> and <i>Eucalyptus saligna</i>. <i>P.patula</i>: 0.323 (based on 6 sample trees) <i>E. saligna</i>: 0.387 (based on 15 sample trees) The results are lower than (more conservative) than values in literature for the species. For the calculation, the default values were taken <u>Corrective Action Request No 22</u> GHG default values for wood densities shall be indicated in the MR and used in the calculations.	MR 2, 5, 6, 29, 30, 32	CAR 22	☑
2.1.1.18			<i>Biomass expansion factors</i> were determined on a sample base for the two major tree species: <i>Pinus patula</i> and <i>Eucalyptus saligna</i>. <i>P.patula</i>: 1.65 (based on 15 sample trees) <i>E. saligna</i>: 1.55 (based on 36 sample trees) <u>Clarification Request 2.</u> <u>BEF</u> has to be sustained with evidence.	MR 2, 5, 6, 29, 30, 32	CR 2	☑
2.1.1.19			Carbon fraction: IPCC default value: 0.5	MR 2, 5, 6, 29, 30, 32	☑	☑
2.1.1.20			<u>Corrective Action Request No 23</u> Root shoot ratio: R 0.25 for all strata was used. This is considered not adequate. Application of GPG default table values is requested and referred to. Or other R shall be used and sustained with evidence.	MR 2, 29, 30, 32	CAR 23	☑
2.1.1.21			Carbon stock in above-ground biomass of plots, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☑
2.1.1.22			Carbon stock in below-ground biomass of plots, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☑

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
2.1.1.23			Carbon stock in above-ground biomass of plots, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.23			Carbon stock in below-ground biomass of plots, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.25			Mean Carbon stock in aboveground biomass per unit area per compartment per species, see Corrective Action Request No 21	MR 2, 29, 30,	CAR 21	☒
2.1.1.26			Mean Carbon stock in belowground biomass per unit area per compartment per species, see Corrective Action Request No 21	MR 2, 29, 30,	CAR 21	☒
2.1.1.27			Area of compartment, see CAR 1 and Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 1, 21	☒
2.1.1.28			Carbon stock in aboveground biomass of compartment per species, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.29			Carbon stock in belowground biomass of r compartment per species, see Corrective Action Request No 21	MR 2, 5, 6, 29, 30, 32	CAR 21	☒
2.1.1.30			Carbon stock change in aboveground biomass of compartment per species, see Corrective Action Request No 21	MR 2, 29, 30	CAR 21	☒
2.1.1.31			Carbon stock change in belowground biomass of compartment per species, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
2.1.1.32			Total carbon stock change is not provided, see Corrective Action Request No 21	MR 2, 29, 30, 32	CAR 21	☒
GHG emission within the project						
2.1.2.01			Amount of diesel consumed in machinery use for site prep, thinning or logging (excluding transportation fuel) is provided in tables D.2.3 of the MR.	MR 2, 29,	☒	☒

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ID-PDD	ID-Meth.	ID-Internal	Description	MoV* Ref.	Draft Conc.	Final Conc.
				30, 32		
2.1.2.02			Amount of gasoline consumed in machinery use for site prep, thinning or logging (excluding transportation fuel) <u>Corrective Action Request No 24</u> Provide information on the variables on GHG emission within the project, as defined in the monitoring plan	MR 2, 29, 30, 32	CAR 24	☒
2.1.2.03			Emission factor for diesel, see Corrective Action Request No 24	MR, 2	CAR 24	☒
2.1.2.04			Emission factor for gasoline, see Corrective Action Request No 24	MR, 2	CAR 24	☒
2.1.2.05			Emission of fossil fuel (excluding transportation fuel) use within project boundary, see Corrective Action Request No 24	MR 2	CAR 24	☒
2.1.2.10			Carbon fraction, see Corrective Action Request No 24	MR 2	CAR 24	☒
2.1.2.16			Total Amount of synthetic fertilizer N applied per year see Corrective Action Request No 24	MR, 2	CAR 24	☒
2.1.2.17			Total Amount of organic fertilizer N applied per year see Corrective Action Request No 24	MR 2	CAR 24	☒
2.1.2.19			Total Amount of synthetic fertilizer N applied per year, is provided in table D.2.1 of MR	MR, 2	☒	☒
2.1.2.20			Total Amount of organic fertilizer N applied per year, is provided in table D.2.1 of MR	MR, 2	☒	☒
2.1.2.25			Total increase in GHG emission, see Corrective Action Request No 24	MR 2	CAR 24	☒
Leakage						
n/a				DR		☒

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3.2 Monitoring Instrumentation

3.2.1 Inventory devices

	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Instrumentation Information				
Instrumentation Information	<u>Corrective Action Request No 25</u> Provide information in the monitoring report on all different instruments used during monitoring period. (Manufacturer Model Nr, Measurement Range, Measurement Unit, Calibration, Uncertainty Level)	I 1, 2	CAR 25	☒
Inspection Results During Verification	The measuring principles applied are according to scientific standards and good practice. A millimetre-calliper is used; the DBH measurements are taken in 1.3 m height. This height is marked with paint on the trees. The PSP are measured every year. Installation: The sample plots are randomly chosen in the office, using a grid in the office. The plots were installed obviously randomly using a GPS receiver. Manner of execution: three teams of each three people are conducting the measurements, supervised by Dr. Musami. Functionality: The PSP are functionally complete in order to get the data required for monitoring. Quality assurance: On person in each team is dedicated to be team leader and in charge of the quality of data.	I, onsite 1, 2	☒	☒

3.2.2 GPS

	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Instrumentation Information				
Instrumentation Information	Garmin etrex GPS is used.	I 1, 2	☒	☒
Inspection Results During Verification	The GPS instruments use the WGS84 coordinate system. The first measurement of the sample centres was made using the 1960 coordinate system. The	I 1, 2	☒	☒

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	instruments are state of the art. Accuracy was compared to GPS devices from the auditor team and found correct.			
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3.3 Sampling Information

3.3.1 Sample Plots for Monitoring of Project Activity

	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Monitoring & Calculation				
Sampling Principle:	Random sampling is carried out to determine the parameters needed for further calculation. The area was stratified according to the monitoring plan depending on species and planting year. For each stratum the number of PSP was determined ex-ante to get the demanded accuracy of 10% with 95% confidential level. The sample plots are randomly chosen in the office using a grid. The plots were identified in the field by using a GPS receiver. Manner of execution: three teams of three people each are conducting the measurements. They are supervised by Dr. Musami. No bias was found in the installation of the PSP. The centers of the PSP are permanently marked. The numbering of the trees is clockwise. The original numbering beginning from the nearest tree was changed. The installation is considered according good practice. <u>Corrective Action Request No 26</u> Include a description of the sample approach and how sample points where chosen in the MR	MR, I 1, 2, 30, 32	CAR 26	☒
Methodology of Sampling:	The methodology provides guidance for sampling methodology. Calculation for sampling design is given in the methodology: M.1 – M.2 (p. 42 AR-AM0005 V03). The sampling design was applied according to the methodology. See Corrective Action Request No 26 The samples were established visible. The centre of each sample is marked with a wooden post and a information sheet fixed to it. All trees of the sample are marked with paint at 1.3 m. The audit team visited sample plots recently thinned. In all cases the sample plots were treated in the same way as the whole stand (thinning).	MR, I 1, 2, 30, 32	CAR 26	☒

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	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
	Therefore the visibility of the sample plots is considered not as a problem.			
Frequency of Sampling:	The frequency of sampling is not indicated in the MR. All sample plots are measured every year. This information shall be included in the MR <u>Corrective Action Request No 27</u> Provide information on the frequency of sampling in the MR (see also Corrective Action Request No 26 and section 3.1)	MR, I 1, 2, 30, 32	CAR 27	☒
Training of Sampling Personnel:	There are guidelines to conduct the field inventories. The team leaders were trained under the supervision of Dr. Musami.	MR, I 1, 2, 30, 32		☒
Sample Analysed for / Data to be Measured	Different parameter that are measured in each sample plot are outlined also in section 3.1	MR, I 1, 2, 30, 32	☒	☒
Sample Analysed by:	The leaders of the inventory teams were Dr. Musami, Jakob Sandven, and Peter Nguyeie. Calculations were made by Jakob Sandven <u>Corrective Action Request No 28</u> Provide information on persons who conducted the measurements and subsequent calculations in the MR	MR, I 1, 2, 30, 32	CAR 28	☒
Certification of Analyser/ Laboratory:	n/a	MR, I 1, 2, 30, 32		☒
Analysis Principle/Methodology of Sample Analysis:	Only the standing timber volume was calculated but no sampling error (accuracy). The estimation of accuracy remains to be conducted and results to be insert into the MR, see Corrective Action Request No 13.	MR, I 1, 2, 30, 32	CAR 13	☒
Measurement Unit	See section 3.1	MR, I 1, 2, 30, 32		☒
Measurement Range	See section 3.1	MR, I 1, 2, 30, 32		
Uncertainty Level	<u>Corrective Action Request No 29</u> Provide information on uncertainty levels, see also CAR 13	MR, I 1, 2, 30, 32	CAR 29	☒

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	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Archiving of Raw Data:	See section 2.2	MR, I 1, 2, 30, 32		☒
Inspection Results During Verification: Operation of Sampling				
Documentation	All data on sampling and inventory work is available on the original paper forms and in digital form.	MR, I 1, 2, 30, 32	☒	☒
Representativity	The sampling was conducted according to the monitoring plan. Strata on species and age were determined and the number of PSP needed for each stratum was calculated.	MR, I 1, 2, 30, 32	☒	☒
Reproducibility	Data are archived on paper and digitally. The PSP were marked in the field and could be found easily. All trees of the PSP verified could be identified and remeasured. The exact measurement height at 1.3m was marked with paint. Therefore the DBH measurements could be reproduced accurately by audit team during the onsite visit: DBH measurements: On four PSP's (PSP 2, 21, 26, 38) all trees were remeasured in the presence of the auditor. 174 trees were remeasured. In total, 7 DBH measurements deviated 1-2 cm and 2 measurements deviated 2-3cm, which is considered acceptable and sufficiently accurate quality for DBH measurement. Tree height measurements: On four PSP's the tree heights were remeasured in the presence of the audit team.	MR, I 1, 2, 30, 32	CAR 30	☒

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	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.																																																																																																				
	<table border="1"> <thead> <tr> <th colspan="5">tree height measurement control</th> </tr> <tr> <th>old m</th><th>new m</th><th>delta m</th><th>delta %</th><th></th></tr> </thead> <tbody> <tr> <td>16.8</td><td>14.4</td><td>2.4</td><td>14</td><td>border</td></tr> <tr> <td>13.6</td><td>13.5</td><td>0.1</td><td>1</td><td></td></tr> <tr> <td>14.9</td><td>13.3</td><td>1.6</td><td>11</td><td>border</td></tr> <tr> <td>14.4</td><td>14.8</td><td>-0.4</td><td>-3</td><td></td></tr> <tr> <td colspan="5"> </td></tr> <tr> <td>24.2</td><td>25.7</td><td>-1.5</td><td>-6</td><td></td></tr> <tr> <td>28.7</td><td>29.8</td><td>-1.1</td><td>-4</td><td></td></tr> <tr> <td>31.5</td><td>31.1</td><td>0.4</td><td>1</td><td></td></tr> <tr> <td colspan="5"> </td></tr> <tr> <td>7.4</td><td>8</td><td>-0.6</td><td>-8</td><td></td></tr> <tr> <td>7.6</td><td>9.1</td><td>-1.5</td><td>-20</td><td>not tolerable</td></tr> <tr> <td>8.7</td><td>8.4</td><td>0.3</td><td>3</td><td></td></tr> <tr> <td>8.4</td><td>6.7</td><td>1.7</td><td>20</td><td>not tolerable</td></tr> <tr> <td colspan="5"> </td></tr> <tr> <td>8.2</td><td>8.8</td><td>-0.6</td><td>-7</td><td></td></tr> <tr> <td>7.1</td><td>7.5</td><td>-0.4</td><td>-6</td><td></td></tr> <tr> <td>8.7</td><td>8.2</td><td>0.5</td><td>6</td><td></td></tr> <tr> <td>8.2</td><td>7.7</td><td>0.5</td><td>6</td><td></td></tr> </tbody> </table> <u>Corrective Action Request No 30</u> The tree height measurements in some PSPs were significantly imprecise. Re-measurements of all tree heights in PSPs are required.	tree height measurement control					old m	new m	delta m	delta %		16.8	14.4	2.4	14	border	13.6	13.5	0.1	1		14.9	13.3	1.6	11	border	14.4	14.8	-0.4	-3							24.2	25.7	-1.5	-6		28.7	29.8	-1.1	-4		31.5	31.1	0.4	1							7.4	8	-0.6	-8		7.6	9.1	-1.5	-20	not tolerable	8.7	8.4	0.3	3		8.4	6.7	1.7	20	not tolerable						8.2	8.8	-0.6	-7		7.1	7.5	-0.4	-6		8.7	8.2	0.5	6		8.2	7.7	0.5	6				
tree height measurement control																																																																																																								
old m	new m	delta m	delta %																																																																																																					
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3.4 Accounting information

	Verification Summary & Comments	MoV* Ref.	Draft Conc.	Final Conc.
Accounting Information: Sale of wood products				
Description of Accounted Component:	<u>Corrective Action Request No 31</u> Provide information on timber sold from the project area (amount)	DR, I 2	CAR 31	☒
Account Credible / in Line with PDD:	See CAR above	DR, I 2		☒

3.5 External Data

Not applicable

3.6 Others

Not applicable

4 Data Verification

4.1 Internal Review

See section 1.3

4.2 Usage of default values

See section 3.2

4.3 Reproducibility

See section 3.3.1

4.4 Peculiarities

Description of Peculiarities and unexpected Events during the verification period					
	Description	Comments and Results	MoV* Ref.	Draft Conc.	Final Conc.
Performance	See also annex 3 on survival rates	<u>Corrective Action Request No 32</u> A statement about peculiarities if occurred, e.g. fire, floods, insect outbreaks, etc. shall be insert in the MR and about consequences to emission reduction.	MR, I 2, 29, 32	CAR 32	☒

4.5 Reliability and Plausibility

Description of crosschecks and plausibility checks					
	Description	Comments and Results	MoV* Ref.	Draft Conc.	Final Conc.
Performance	Are the data in the calculation tool plausible (e.g. negative values, high/low values, implausible sequences of constant values)? Describe general the means of assessment. Are there any crosschecks applied to verify the provided emission reductions and/or the key parameter (e.g. mass balance)?	During onsite visit, the field sheets form the sample plots were reviewed and a random selection of sample plots re-measured by the audit team. Further, the Excel calculation sheets with the input data from the sample plots were provided by the PP and reviewed by the audit team. Thus the intermediate and final results of the ex-post net anthropogenic GHG removal were verified. See checklist section 3.3.1 (CAR 29, 30)	MR, I 2, 30	CAR 29, 30	☒

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4.5 Completeness and Correctness

Description of completeness and correctness					
	Description	Comments and Results	MoV* Ref.	Draft Conc.	Final Conc.
Correctness	All data provided were found correct.	See CAR 1, 15, 22, 23, 30	I, MR 2	CAR 1, 15, 22, 23, 30	☒
Completeness	All data provided were found complete.	See CAR 1, 15, 22, 23, 30	I, MR 2	CAR 1, 15, 22, 23, 30	☒
Further Remarks: All calculations need to be revised according to CAR 1, 15, 22, 23, 30					☒

5 Additional requirements

Description of additional requirements to be checked					
	Description	Comments and Results	MoV* Ref.	Draft Conc.	Final Conc.
Environmental issues	According to the MR, no major negative impacts have been noted. In 2008 the project has been FCS certified. CCBA certification is ongoing. Environmental monitoring focuses on metrological parameters, water quality, tree diseases, biodiversity	<u>Corrective Action Request No 33</u> Provide more information in the MR on minor negative impacts on the environment also based on the FSC report. <u>Clarification Request 3.</u> Biodiversity monitoring points out that rare and threatened flora and fauna are found in the project area. Discuss how the project activity influences habitat. <u>Clarification Request 4.</u> No planting of native species was documented in the monitoring plan. Clarify if native species were planted	MR, I, 2, 7, 8, 9, 10, 12	CAR 33 CR 4 CR 5	FAR
Socio economic	Impacts are also described in	Positive community impacts have been observed during	MR, I	CAR 34	☒

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issues	discussed in the monitoring of socioeconomic parameters in the village.	interviews in the adjacent villages. Financial and material support was given for community support to the villages <u>Corrective Action Request No 34</u> Provide information on the positive socio economic impact in the MR and sustain it with evidence.	2, 7, 8,		
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Table 2: Compilation and Resolutions of CARs, CRs and FARs

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion
<u>Corrective Action Request #1:</u> During field visit it was found, that the actual planted areas do not coincide with the information in the GIS and maps. All areas shall be updated and calculations to be adopted accordingly. For completion of the verification of the project boundary, provide the DOE with digital data on project area and high-resolution satellite images. (see also checklist section 3.1: parameters on boundary monitoring)	Boundaries have been re-mapped using high resolution satellite imagery, and in the field ground truthing. Copies of new boundary shape-files are available to the DOE.	Shape files have been provided to DOE, the final area was adjusted as 4089 ha. Request closed. ☒
<u>Corrective Action Request #2:</u> The satellite images used for the delineations of strata shall be referenced in the monitoring report.	References are given. Digital Globe and Kompsat-2 DIMAP were used.	References provided in the monitoring report. Request closed. ☒
<u>Corrective Action Request #3:</u> The actual status of the project planting activities shall be described in the monitoring report including reasons for delay or reduction of plantation area (see also checklist section 3.1, parameters on forest	Planting Status is described. For the 1997-2008 time period planting has equalled planting projections in the validated VCS PDD.	Planting status is described per parcel in the GIS files and the Excel database and found to be in compliance with field observations (overall area 4089 ha). Request closed. ☒

Ref. = Reference as included to Information Reference List; MoV = Means of verification (I: Interview, DR: Document Review, MR: Monitoring Report)

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
establishment).			
<u>Corrective Action Request #4:</u> Provide the DOE with a written description for data management procedures (raw data archiving, protection, data transfer, and data processing) for inventory data and list the person(s) responsible.	Description of data management procedures are provided in the verification report.	Information on data management for field measurements of sample plots (including data collection, archiving, protection, transfer and data processing) is described in the MR. Provide evidence for re-measuring of DBH in sample plots as defined in QA/QC procedures (copies of field notes).	☑
	Description inserted based on new inventory guidelines and Jakobs QC field work in Feb 2009.	QA/QC procedures are explained and followed in the monitoring. Request covered and closed	
<u>Corrective Action Request #5:</u> Provide the DOE with a written description for data management procedures (raw data archiving, protection, data transfer, and data processing) for GPS data and list the person(s) responsible in the project.	Description of data management procedures are provided in the verification report.	Information on data management for GPS measurements (including data collection, archiving, protection, transfer and data processing) is described in the MR. Include information on data collection with GPS	☑
	Description inserted based on new inventory guidelines and Jakobs QC field work in Feb 2009. New text on GPS data collection is now inserted, and SOP.	All relevant description of data management procedures are provided to the DOE and brief summary included in the MR. Request closed.	
<u>Corrective Action Request #6:</u> Provide the DOE with a written description for data management procedures (raw data archiving, protection, data transfer, and data processing) for GIS data and list the person(s) responsible in the project.	Description of data management procedures are provided in the verification report.	Information on data management for GPS measurements (including data archiving, protection, transfer and data processing) is described in the MR.	☑
<u>Corrective Action Request #7:</u> Protection measures in the calculation tool are needed to avoid unintentional errors or data losses	These are described in the verification report in section 2.	Weekly backups are implemented to protect the digital data.	☑

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
<u>Clarification Request #1:</u> Provide reference to the procedure for elimination of non-plausible data	These are described in the verification report in section 2.	Tolerance levels for checking of inventory data is included in the MR. Provide information / evidence how this was checked (see CAR 5)	☒
	These requirements were not followed, as per CAR 5 response. However, accuracy of measurements was checked after onsite visits by the DOE, through second measurement of PSPs.	Tolerance level for re-checking monitoring parameter in teh sample plots are provide in the monitoring plan (+/- 2 cm for DBH, +/- 1 m for height) QC procedures were not followed prior to the verification. As this was noted during verification, sample plots were re-measured (see CAR 30). Request closed.	
<u>Corrective Action Request #8:</u> Provide reference in the MR to the formulae of the methodology for all ex-post calculations (the parameters that need to be calculated are listed in checklist section 3.1. and the monitoring plan of the PDD).	Formula from AR AM 05 are referenced in section 2.6.3	The formulas used are referenced. M.26 shall be referenced for actual net GHG removal calculation The formulas cited in section 2.6.2 of the MR for Pine is not in compliances with the Excel sheet (annex 1) and with the source (Malimbwi). Correct the formulae and provide the page number of the cited report. If needed adapt the Excel file.	☒
	These have been corrected	Formulae M26 is references in the MR The formulae in the MR and Excel are in compliance with the study from Malimbwi	
<u>Corrective Action Request #9:</u> Provide details for each step in the calculation for <i>ex-post actual net GHG removal by sink</i> , as indicated in equations in the methodology (M.31-M.37). Provide data by strata. (The parameters that need to be calculated are listed in checklist section 3.1. and the monitoring plan of the PDD). Carbon captured in the baseline is not included in the	This information is now included in section 2.6.3. Carbon captured in the baseline is now included in the calculation of net GHG emission reductions created by the project.	Detailed steps for calculations are provided in the respective Excel sheets and found to be in compliance with the methodology. Calculations have been carried out per strata. Baseline carbon stocks are deducted, baseline carbon stock changes are zero as assessed in the validation of the project. Emissions from biomass burning have not been considered (see CAR 11)	☒

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
calculations leading to table C.2.1. (see equation M.5 of the Methodology)	We request a deviation so that baseline carbon stocks are no longer deducted in line with new CDM EB decision. Emissions from burning are now included.	Considering latest decision in CDM EB, which is also applicable to VCS as per VCS guidelines, baseline carbon stocks from non-woody biomass can be neglected. Emissions from burning (CH ₄) are now considered in line with the methodology (included in tables 3-10 and 3-11 of the MR)	
<u>Corrective Action Request #10:</u> Provide units for Table C.2.1 in the MR	Units are provided	Units are still not indicated (for area and carbon stock). Former table C.2.1 is now table 2-4 in the new layout of the MR	☒
	Updated and included	Table updated with the values from the actual updated calculation.	
<u>Corrective Action Request #11:</u> Follow steps given in the methodology to calculate project emissions (M.19 – M.25) Provide data on project emission per strata, including Uchindile as requested in CAR 24	See tables 2.3, 2.4 and 2.5.	Data is provided per strata in the monitoring report. Include calculation of emissions from biomass burning in the ex-post net anthropogenic GHG removals	☒
	Now included	Calculations of emission from fire are included. A combustion efficiency (CE) of 50% is used, which is in line with IPCC guidance and considered appropriate.	
<u>Corrective Action Request #12:</u> Provide details for each step in the calculation for ex-post leakage, as indicated in the methodology (The parameters that need to be calculated are listed in checklist section 3.1.).	Leakage is not occurring at UFP/MFP	No leakage has occurred.	☒
<u>Corrective Action Request #13:</u> Calculations on accuracy are missing. Calculations on accuracy have to be conducted and inserted in the MR	Accuracy calculations are now included. See annex 1 for precise workings	Provide further explanation on accuracy. Accuracy assessment has to be carried out per strata considering the assumed confidence level (95% as per PDD and accuracy of 5% as per PDD). Currently the calculations are not conducted adequately and the accuracy is not to the level defined in the PDD.	☒

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion
	The standard error has now been calculated. Instances where the standard error is too high for a given strata then the mean is not used, rather the mean minus one standard deviation.	In order to assure the conservativeness of the calculations, a standard Error (SE) * 1.96 (α value at 95%) is deducted from the mean, in case the standard error was above 10%
<u>Corrective Action Request #14:</u> Provide information on the variables concerning the project boundary, as defined in the monitoring plan	Parameter tables in accordance with PDD are now included in the verification report	Parameters on project boundary are submitted in projected GIS files, based on GPS and cross-check during the onsite visit. The parameters reported in the monitoring plan include Project ID, Project location, Compartment ID, Beacon ID, Bearing, Distance, Natural,, Bearing, Distance, Natural ID. These information are provided in the GIS files and tables 3-1, and tab 3-2 as well as figure 3-1 and 3-2. It was verified during the onsite visit through physical inspections and comparisons with the database.
<u>Corrective Action Request #15:</u> The boundaries of the compartments, in particular in Mapanda, are not consistent with the boundaries as found onsite (see CAR 1). Especially changes of the borders as consequences of FSC rules were not yet taken into account. The boundaries have to be adopted in the report and new area values used for the calculations of carbon sinks.	Boundaries have been updated, and are now aligned with final planted area 1997-2008 (excluding areas that had to be removed due to FSC buffer)	Updated shape-files have been submitted to DOE (see also CAR 1)
<u>Corrective Action Request #16:</u> Provide information on the variables on forest establishment, as defined in the monitoring plan	Parameter tables in accordance with PDD are now included in the verification report	Monitoring parameters are include in the MR, table 3-5. The parameters reported in the monitoring plan include Compartment ID, Compartment location, Compartment size, Compartment composition, Marking of planting spots, Areas cleaned (screefed),Volume of pit, Height of seedlings, Area weeded, Area slashed, Number of trees survived, Stock count, Stocking rate, Area of fireline and fire breaks, biomass stock per unit area before slash and burn, area of land with N applied, Amount of organic fertilizer N applied. Parameters were verified during the

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
		onsite visit through physical inspections and comparisons with the database.	
<u>Corrective Action Request #17:</u> Provide information on survival rates of planted trees by strata	Survival rates per strata are included in table 3.4	Survival rates are included in the MR and respective Annex.	☒
<u>Corrective Action Request #18:</u> Provide information on amount of fertilizer N applied by unit area and strata	Fertilizer use no longer has to be monitored as a project emission, in accordance with the updated EB decisions, and validated VCS PDD.	Emissions from fertilizer are no longer included in the MP in the VCS PDD and do thus not need to be considered any longer as project emission (as also per EB decision).	☒
<u>Corrective Action Request #19:</u> Provide information on the variables on forest management, as defined in the monitoring plan	Parameter tables in accordance with PDD are now included in the monitoring report	Parameters on forest management are included in the MR in table 3-9. Include information on harvesting in the MR.	☒
	Now included	Clarify if no harvesting has occurred yet? (inconsistency with Fig 3-9 MR and table 2-2)	
	I have corrected to ensure tables say 'thinning through-out' and also inserted a clarification note that no total harvesting has taken place.	Information is added to the MR. Parameters reported in the MR include Area of thinning, Biomass stock lost per ha during thinning, Harvesting location, Area of harvest, Volume harvested, Area replanted, Area allowed to regenerate/re-sprout, Area affected by diseases and pest, Area burnt by fire, Location burnt, Volume of biomass lost due to fire, Area re-growth after fire, Area of fire breaks, Amount of diesel used for fire protection, Amount of diesel consumed in machinery use for site prep, thinning or logging (excluding transportation), amount of gasoline consumed in machinery used for site prep, thinning or logging(excluding transportation), Emission factor for diesel, Emission factor for gasoline. Parameters were verified during the onsite visit through physical inspections and comparisons with the database and literature.	
<u>Corrective Action Request #20:</u>	Fuel emissions no longer have to be monitored as a project emission, in	Emissions from burning of fossil fuels are no longer included in the MP in the VCS PDD and do thus not need	☒

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
Only general figures for diesel and petroleum emissions are given in table D.2.3. Specify according to the parameters defined in the monitoring plan.	accordance with the updated EB decisions, and validated VCS PDD.	to be considered any longer as project emission (as also per EB decision).	
<u>Corrective Action Request #21:</u> Provide information on the variables on actual net GHG removals, as defined in the monitoring plan (most variables are needed by stratum)	This information is now displayed per strata as requested in the monitoring plan.	All monitoring parameters are listed in the MR, results are presented per sample plot and strata in the annex (Excel sheet). Information on different recordings are not provided (most variables are needed to be monitored and reported annually according to the MP defined in the PDD), see CAR 27.	☒
	New text inserted in parameter tables	Information is added to the MR. Request closed.	
<u>Corrective Action Request #22:</u> GHG default values for wood densities shall be indicated in the MR and used in the calculations.	Default values are indicated in table 2.1	Wood density of 0.45 for Pinus patula and 0.8 for Eucalyptus saligna is provided in the MR and used in the calculations. Credible reference is provided for the sources.	☒
<u>Clarification Request #2:</u> <u>BEF</u> for Pinus and Eucalypt has to be sustained with evidence.	BEF are sustained with evidence – see section 2.6.3	BEF of 1.3 for Pinus patula and 2.0 for Eucalyptus saligna is provided in the MR and used in the calculations. Credible reference is provided for the sources.	☒
<u>Corrective Action Request #23:</u> Root shoot ratio: R 0.25 for all strata was used. This is considered not adequate. Application of GPG default table values is requested and referred to. Or other R shall be used and sustained with evidence.	R:S ratio is sustained with evidence – see section 2.6.3	Root-to-shoot of 0.32 for Pinus patula and 0.35 for Eucalyptus saligna is provided in the MR and used in the calculations. Credible reference is provided for the sources.	☒
<u>Corrective Action Request #24:</u> Provide information on the variables on GHG emission within the project, as defined in the monitoring plan	GHG emissions parameter tables in accordance with PDD are now included in the verification report	Emissions from biomass burning have to be included in the calculations	☒
	Emissions from burning now included	Information is added to the MR. Request closed.	

Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
<u>Corrective Action Request #25:</u> Provide information in the monitoring report on all different instruments used during monitoring period. (Manufacturer Model Nr, Measurement Range, Measurement Unit, Calibration, Uncertainty Level)	Details of instruments used in monitoring are provided in table 3.10	Information on measuring devices are provided in the MR.	☒
<u>Corrective Action Request #26:</u> Include a description of the sample approach and how sample points were chosen in the MR	This is provided in section 3.5.1	Description on sampling approach is given in section 3.5 of the MR and section E.2 of the PDD. The formulas are applied correctly. Explain more detailed how the location of PSPs is located, and how bias in selection of PSP was avoided. Provide location of PSPs in digital (GIS) format to DOE.	☒
	SE was calculated and found to be too high in certain strata. As such the mean value per strata has not been used in calculations, but rather the mean minus one standard deviation. PSP locations provided.	Location of PSPs provided is provided in GIS files to DOE. +/- 10% precision level is applied (see CAR 13)	
<u>Corrective Action Request #27:</u> Provide information on the frequency of sampling in the MR (see also CAR 26 and section 3.1)	PSPs are measured every year, although this is the first VCS verification event.	Provide information at the frequency and intensity as defined in the monitoring plan (PDD). (E.g. DBH and tree height is expected to be measured annually for 100% trees in plot, as per monitoring plan)	☒
	See annex for data of measurements taken in PSPs pre-2008. A deviation has been requested because dominant tree height has been taken in PSPs, rather than each height of each tree measured.	Frequency of sampling deviates in parts from the Monitoring Plan. This applies to the parameters "Diameter at Breast Height (DBH)", "Tree Height", and "Area of the compartment", as well as the parameters calculated based on these three parameters. However it is considered adequate to have only a measurement at the time of verification, instead of annual measurement. Therefore this deviation is acceptable in this Monitoring period, as it does not affect the accuracy of the	

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Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
		calculations of emission reductions.	
<u>Corrective Action Request #28:</u> Provide information on persons who conducted the measurements and subsequent calculations in the MR	Peter Mussami, Jakob Sandven and Peter Nguyeie	Persons in charge are included in the MR	☒
<u>Corrective Action Request #29:</u> Provide information on uncertainty levels, see also CAR 13	Information on uncertainty levels is provided in section 3.5	Uncertainty in the calculation is not properly addressed (see CAR 13)	☒
<u>Corrective Action Request #30:</u> The tree height measurements in some PSPs were significantly imprecise. Re-measurements of all tree heights in PSPs are required.	Re-measurement of tree heights has occurred. New data is presented in annex 1.	New tree heights are submitted to DOE.	☒
<u>Corrective Action Request #31:</u> Provide information on timber sold from the project area (amount)	This is provided in table 3.8 and annex 5	Include information in section 3.6 of the MR.	☒
	This is now included	Information on poles sold is included	
<u>Corrective Action Request #32:</u> A statement about peculiarities if occurred, e.g. fire, floods, insect outbreaks, etc. shall be insert in the MR and about consequences to emission reduction.	Peculiarities are discussed in section 3.3 under 'forest management'	Peculiarities are listed in section 3-3. Fires have occurred in the first monitoring period. Include the information in table 3-9, and calculate emissions from fire (see CAR 24)	☒
	Emissions from fires have now been calculated	Information is added to the MR. Request closed.	
<u>Corrective Action Request #33:</u> Provide more information in the MR on minor negative impacts on the environment also based on the FSC report.	The remaining 5 minor FSC CARs resulting from the FSC surveillance report are described in section 3.7	FSC CARs are included in the MR and the FSC report is provided to the DOE	☒

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Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
<u>Clarification Request #3:</u> Biodiversity monitoring points out that rare and threatened flora and fauna are found in the project area. Discuss how the project activity influences habitat.	See section 3.7 and the environmental monitoring report	No information on biodiversity are included in the MP. The information on water quality is of limited relevance as it covers only 2 points in time per year and no further analysis is provided (e.g. how time of the year influence the samples, were and how the samples were taken and analysed etc.). However this analysis is not required by CDM. As requested, provide information on biodiversity monitoring points out that rare and threatened flora and fauna are found in the project area. Discuss how the project activity influences habitat.	FAR
	Biodiversity monitoring has not been carried out to assess impacts on rare and threatened species. A new biodiversity monitoring plan is being developed currently. Ecological assessments have been carried out at the site.	As biodiversity monitoring is not a requirement of VCS, a deviation from the originally foreseen monitoring plan is acceptable. However a FAR is raised on the environmental parameters defined in the PD section F: <u>FAR 1:</u> The environmental monitoring parameter defined in the PD shall be reported and included in the next monitoring report.	
<u>Clarification Request #4:</u> No planting of native species was documented in the monitoring plan. Clarify if native species were planted	Native species were planted but have failed, so areas have been replanted now with pine and Eucalyptus	A list of tress species planted is given in table 3-13. Not all are native species (e.g. Cederalla odorate), please correct.	☒
	This has been corrected	The table is updated, now labelled Table 3-20. This table included information on native species planted 35 ha. Request closed.	
<u>Corrective Action Request #34:</u> Provide information on the positive socio economic impact in the MR and sustain it with evidence.	See section 3.7 and community support tables	Surveys on socio-economic data had been conducted. Payments to support some community projects have been made. However not all parameters as outlined in the PD are included and were monitored. As these parameters are defined by the project and are not a requirement from VCS or the methodology, it can be reported at the subsequent verification:	FAR 3

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Corrective Action Requests by Audit Team	Summary of Project Owner Response	Audit team Conclusion	
		<u>FAR 2:</u> The socio-economic monitoring parameter defined in the PD shall be reported and included in the next monitoring report.	

Table 3 VCS Risk Assessment Checklist

The risk assessment is based on the initial risk assessment at the validation. Further details are therefore discussed in the validation report.

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conclusion	Final Conclusion
General risk factors					
1. Risk assessment in general					
Are all risk factors listed in General AFOLU Guidance are considered? Was the significance x likelihood approach applied? If yes, is a comprehensible documentation provided? (details shall be provided in the respective section)	2	DR, I	All risk factors are listed in the Annex B The significance *likelihood approach was not chosen, but the general approach. This is considered adequate with exception of the fire risk. For the fire risk the significance x likelihood approach was applied.	☒	☒
2. Project risk					
a) Risk of unclear land tenure and potentials for disputes?	2, 11, 22	DR, I	Described in question 8	☒	☒ low-medium risk
b) Risk of financial failure?	2	DR, I	Described in question 10 and 12	☒	☒ low risk
c) Risk of technical failure?	2, 5, 6	DR, I	Described in question 9	☒	☒ low risk
d) Risk of management failure?	2, 5, 6	DR, I	Described in question 11	☒	☒ low risk
3. Economic risk					
What is the risk of land opportunity costs to endanger the future viability of the project?	2	DR, I	Described in question 13	☒	☒ low risk
4. Risk of political failure					

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conclusion	Final Conclusion
Has political stability in the project region increased or decreased in the last 5 years? Is this reflected by the political stability indicator in the database of world wide governance indicators provided by the World Bank? (http://www.govindicators.org) Are there similar carbon forestry projects in the region? If yes, have they suffered any problems with the political authorities so far?	2	DR, I	see also question 14	☒	☒ low-medium risk
5. Risk of social instability					
How can the social-structures in the region be described? Will they be affected by the project? Is migration a common phenomenon in the region? To which extent are local people organised in forms of groups /societies, community institutions? Will local people / groups be involved in the project development, implementation and maintenance? If yes to which extent? Will the local communities benefit from the project? If, yes in which way?	2	DR, I	Social Structures are described appropriately in the MR, as well as migration processes and political structures in the adjacent villages. Villagers were involved in the process through PRA. Community benefits are listed in the MR and PD. Main benefits are employment. Further GRL has been supporting the building of a primary school as also confirmed during the onsite visit of the audit.	☒	☒ low risk
6. Natural disturbance risk				medium	
a) What is the probability of fire occurring in the project area?	2, 18, 29	DR, I,	Fire is a major risk mostly caused by illegal hunters. Fire stripes around the plantations, watchtowers, trained and well equipped fire brigades are the main	☒	☒ low risk class (16%)

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conclusion	Final Conclusion
			counter measures. The final risk rating by DOE is: Likelihood : 0.333, Significance= 3 (damage possible leading to (almost) complete failure) Mitigation strategies =3 Risk Mitigation Management=2 Resulting in an overall low risk class of 0.62		
b) What is the probability of incidence of pests and disease attack?	2	DR, I	A descriptive explanation on pests and diseases as well as countermeasures is given in the MR. No significant pests have been recorded in the plantations over the last 10 years. However, no evidence (studies, scientific literature) was provided. The overall risk is considered low-medium	☒	☒ low-medium risk
c) What is the probability of extreme climatic events (e.g. floods, droughts, winds, frost) occurring?	2	DR, I	Extreme climatic events are discussed based on IPCC. Evidence for Eucalypt to withstand long drought seasons is given. Further descriptive explanation is given. However, the species planted are not likely to have "wide genetic base", since the seeds from nurseries are expected to come from similar genetic pool. During onsite visit, it was found that some soils in the project area had a solid layer in the upper part, and thus trees could not easily develop deep roots, which also limits drought	☒	☒ low-medium risk

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conclusion	Final Conclusion		
			resistance. The overall risk is considered low-medium				
d) Is there a geological risk (e.g. volcanoes, earthquakes, landslides)?	2	DR, I	Based on the information provided the geological risks can be classified as low	☒	☒ low risk		
ARR specific risk factors							
7. Project longevity / Commitment Period					High	Medium	Low
					☐	☒	☐
Is the project designed to be short-, medium- or long-term?	2, 3, 5, 6	DR	The project is designed to be long term. Project lands are under 99 year lease.	☒	☒		
Is harvesting of trees planned?	2, 5, 6	DR, FV	Yes harvest is planned. The expected lifetime of the project is 99 years with option prolongation. Therefore the risk can be classified as “medium” according to the VCS guideline (30% in the ARR context in the ARR context)	☒	☒		
8. Land ownership type				Medium or low	High	Medium	Low
					☐	☒	☐
Who is the owner of the project land?	2, 11, 22	DR, IV	Land is under 99 year lease from the national and local governments by GRL. There is no private land ownership in Tanzania possible. The 99 year lease is considered equal to private ownership by GRL. The audit team concluded that based on the project setting of title deeds the overall risk class is medium for this item.	☒	☒		
Who has user rights?	2, 11	DR, I	The user rights are with GRL.	☒	☒		
9. Technical capability					High	Medium	Low

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conclusion	Final Conclusion		
					☐	☐	☒
Have the chosen techniques been successfully implemented in this region before?	2, 3, 5, 6	DR, I	Experience in plantation establishment is available in the region.	☒	☒		
Have they successfully implemented in regions with similar growth conditions?	2, 3, 5, 6	DR, I	N/A	☒	☒		
10. Financial capacity					High	Medium	Low
					☐	☐	☒
Has the project external financing? If yes, from whom?	2, 21	DR, I	The Project is backed by private sector investors; parent company is well capitalized and has access to other sources of finance for expansion. Loans from IFC and Norfund under final negotiations. Financial capacities are presented and additional documents provided to sustain the statements. Evidence shows that backing from financial institutions such as Phaunos Timber Fund and private equity is provided. Therefore the risk is considered as low	☒	☒		
11. Management capacity					High	Medium	Low
					☐	☐	☒
Has the project management experience from previous carbon forestry projects? If yes, how many projects have they managed?	2, 5, 6	DR, IV	The Project is in operation since 1998. The on-site management team is in place since 1997. The company policy is to employ predominantly senior local management with a proven track record in planting, forestry and carbon operations. Evidence for management capacities are provided and sustained with the CV of the persons. Substantial project experience	☒	☒		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Conclusion	Final Conclusion		
			was proven for several people involved in project management. Therefore the overall risk is classified low				
Will there be an on-site management team?	2	DR, I	Yes, a management team and a technical team are permanently engaged.	☒	☒		
12. Future income					High	Medium	Low
					☐	☐	☒
Is the management plan taking into consideration future income and costs from the project?	2, 3, 5, 6	DR, IV	Yes, a management plan is in place.	☒	☒		
13. Future / current opportunity costs					High	Medium	Low
					☐	☐	☒
Is the project competing with other land uses? If yes, will other land uses become more attractive in the future?	2, 3	DR, IV	Past and likely alternative use is unmanaged grassland – with no related income. This is further elaborated in the baseline study for VCS/CDM project development, where alternative land uses are discussed.	☒	☒		
14. Endorsement of project or land-use activity by local or national political establishment					High	Medium	Low
					☐	☒	☐
Is the project endorsed by the national or local political establishment? If yes, is this subject to change in the future?	2, 3, 20	DR, IV	Bottom to top process is used in Tanzania with approval starting from the Village elders to the President. The 99 years lease contract was signed by the government. Stakeholder participation processes were conducted during CDM/VCS project development as well as during FSC-Certification procedure.	☒	☒		

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Table 4: Unresolved CAR / CR / FAR

Forward Action Request No 1:

The environmental monitoring parameter defined in the PD shall be reported and included in the next monitoring report.

Forward Action Request No 2:

The socio-economic monitoring parameter defined in the PD shall be reported and included in the next monitoring report.

Annex 2: Information Reference List

Reference No.	Document or Type of Information																																						
1.	On-site interviews at the offices and the project site of the “Reforestation in grassland areas of Uchindile, Kilombero, Tanzania & Mapanda, Mufindi, Tanzania”, performed between 09-16 December 2008: Validation team on site: Hubertus Schmidtke Auditor, TÜV SÜD Industrie Service GmbH Sebastian Hetsch Auditor, TÜV SÜD Industrie Service GmbH Interviewed persons: <table border="1"> <thead> <tr> <th>Name</th><th>Organisation</th></tr> </thead> <tbody> <tr><td>Peter Nguye</td><td>Inventory Officer, Green Resources Limited (GRL)</td></tr> <tr><td>Jakob Sandven</td><td>Mapping and Inventory Manager, GRAS</td></tr> <tr><td>Nina Lande</td><td>Carbon Certification Associate, GRL.</td></tr> <tr><td>Aziz A Abisu</td><td>Environmental Officer</td></tr> <tr><td>Mashambah Philipo</td><td>Soil and Site Analyst Officer</td></tr> <tr><td>Zawjia Omary</td><td>Ecology and Documentation Officer</td></tr> <tr><td>Samson Msilu</td><td>Community Development Officer, GRL</td></tr> <tr><td>Kazaula Geofrey</td><td>Project Surveyor, GRL</td></tr> <tr><td>Dr. P.M. Mussami</td><td>Researcher and Monitoring Officer, GRL</td></tr> <tr><td>Kisondela A.A</td><td>GIS + Mapping Manager, GRL</td></tr> <tr><td>Dr. Moses Ngegba</td><td>Carbon Certification Manager Tanzania, GRL</td></tr> <tr><td>Peter Myegeta</td><td>Chief GIS and Mapping Officer, GRL</td></tr> <tr><td>Hamza Omary</td><td>Monitoring Officer, GRL</td></tr> <tr><td>Eliya Mtupile</td><td>CCBA Officer, GRL</td></tr> <tr><td>Victor Kimey</td><td>FSC Officer, GRL</td></tr> <tr><td>Jenny Henman</td><td>Carbon Certification Manager, GRAS</td></tr> <tr><td>Aloyce Kimaryo</td><td>Mapanda Project Manager</td></tr> <tr><td>Sylvester Luwagile</td><td>Uchindile Project Manager, GRL</td></tr> </tbody> </table> In Uchindile and Mapanda some further interviews were carried out by the auditors with representatives of local villages. In Uchindile the interviewed included among others: - Mr. Shabari Juma Mgaya, Ward Executive Officer - Mr. Charles Anton Ngondaghi. Ward Education Coordinator	Name	Organisation	Peter Nguye	Inventory Officer, Green Resources Limited (GRL)	Jakob Sandven	Mapping and Inventory Manager, GRAS	Nina Lande	Carbon Certification Associate, GRL.	Aziz A Abisu	Environmental Officer	Mashambah Philipo	Soil and Site Analyst Officer	Zawjia Omary	Ecology and Documentation Officer	Samson Msilu	Community Development Officer, GRL	Kazaula Geofrey	Project Surveyor, GRL	Dr. P.M. Mussami	Researcher and Monitoring Officer, GRL	Kisondela A.A	GIS + Mapping Manager, GRL	Dr. Moses Ngegba	Carbon Certification Manager Tanzania, GRL	Peter Myegeta	Chief GIS and Mapping Officer, GRL	Hamza Omary	Monitoring Officer, GRL	Eliya Mtupile	CCBA Officer, GRL	Victor Kimey	FSC Officer, GRL	Jenny Henman	Carbon Certification Manager, GRAS	Aloyce Kimaryo	Mapanda Project Manager	Sylvester Luwagile	Uchindile Project Manager, GRL
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Reference No.	Document or Type of Information
2.	Monitoring Report, first version (01), dated Nov 23 2008, final version (07) dated 25 May 2010
3.	Final VCS PD, version 06, dated 2 July 2009
4.	TÜV SÜD VCS validation report, 17 July 2009
5.	Forest Management Plan for Mafinga Forest Project (Draft), January 2005 - December 2009, First Edition, 2004, Revised By: V. G. Nambombe and Dr. P.M. Mussami, dated 2007. (MAPANDA)
6.	Forest Management Plan for Kilombero Forest Project (KFP) January 2005 - December 2009, Revised Edition, 2005, Prepared By: V. G. Nambombe, dated 2007 (UCHINDILE)
7.	Assessment of the Environmental Impact of the forest plantation project at Uchindile and lugala villages in Kilombero district, Tanzania, Prepared for the Kilombero Forests Limited by Orgut consulting Tanzania branch, August 1999
8.	Environmental Impact Assessment on proposed Mafinga and Idete forest projects in Mufindi district, Iringa region, Tanzania submitted to: National Environment Management Council, Dar es salaam- Tanzania; prepared by: Environmental association of Tanzania (ENATA), Dar es salaam, October 2006
9.	Ecological survey in the Kilombero forest project at Uchindile Kilombero District Tanzania, prepared for Green Resources Limited, Tanzania by Prof. Pkt Munishi Faculty of forestry and nature conservation, Department of forest biology, Sokoine University of Agriculture, Morogoro, Tanzania, June 2006
10.	Report On Botanical Survey, C.K. Ruffo and L.O.N. Uronu, Tanzania Tree Seed Agency, Morogoro, Tanzania, February, 2006, on behalf of Green Resources Limited (covering sites Uchindile, Mapanda, Iringa)
11.	Title deeds: a) for Mapanda sites, copy of certificate dated 2004, title on the name of GRL Ltd, forest plantation as landuse; and b) Title on Uchindile site, on the name of Escarpment Forestry Company LTD, agriculture as land use, incl. letter confirming wrong land use indications by the Ministry of Lands Housing and Human Settlements, dated 23 Oct 2006.
12.	Guidelines for execution of environmental monitoring plan for Mapanda: Mafinga and Idete Forest Projects (MFP & IFP), Green Resource Limited, Aug 2006.
13.	Guidelines for execution of environmental monitoring plan for Uchindile: Kilombero Forest Project (KFP), Green Resource Limited, Aug 2006.
14.	Monitoring activities report for Mafinga Forest Project, by Dr. Mussami, Aug, 2006.
15.	Monitoring activities report for KFP, by Dr. Mussami, Aug, 2006.
16.	GRL – Work Instructions for nursery and plantation operations, Green Resource Ltd. Nambombe and Mussami, Nov 2005.
17.	Change of land-use, Approval of Variation of Conditions of a Right of Occupancy, 08 July 2006
18.	Fire protection plan, Green Resource Ltd., Nambombe and Mussami, Oct 2004.
19.	Health and safety code of practice, Green Resource Ltd., Nambombe and Mussami, Okt 2004.
20.	Questionnaire used for interviews with stakeholders (template), without date, submitted during onsite visit.
21.	Financing GRL Forest project in Tanzania, CRDB Bank request, Apr 2008.
22.	Certificate of occupancy, Farm No. 308. Registered 26.9.2000.
23.	Baseline study, Annex 3 to the VCS PD

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Reference No.	Document or Type of Information
24.	IPCC GPG LULUCF, 2003
25.	Teobaldelli et al, 2009, Generalized functions of biomass expansion factors for confers and broadleaved by stand age, growing stock and site index, Forest Ecology and Management VOI 257 pp1004-1013
26.	The Commercial Timbers of Tanzania' by J.M.Bryce revised edition of 1999.
27.	Inventory Guideline for Green Resources AS. Prepared by Endre Hansen, Inventory Manager, April 24th 2008
28.	Term Loans – Forestry Project, FBME Bank Ltd, Apr 2008.
29.	Calculation of GHG emissions from fire: "Fire Records _methane UFP 2 3 10.xls" and "Fire Records _methane MFP 2 3 10.xls", dated 02 March 2010
30.	Calculation of GHG removals: "Annex 1 VER_Calculations_UFP MFP 3 2 10 JH.xls", final version dated 02 March 2010
31.	Monitoring the Planted Area Boundary, Survival Checking and Planting Density - Standard Operating Procedure, dated March 2010
32.	GIS files of actual boundaries and strata: "MFP_planted_98_08.shp", "UFP_Planted_1997_2008.shp", dated 17 April 2009
33.	Field notes and pictures by audit team during onsite assessment, 09-16 December 2008
34.	Statement on double counting, by Mads Asprem, Managing Director GRAS, dated 30 June 2009
35.	Green Resources Limited: Standard Operating Procedures. Revised version 2007.
36.	STAFF TRAINING PROGRAMME FOR GREEN RESOURCS LTD. 2008 – 2012