



Industrie Service

Choose certainty.  
Add value.

# Verification Report

Periodic Verification of the Registered CDM Project  
“SOUTHERN NICARAGUA CDM REFORESTATION PROJECT”  
UNFCCC 3970-CDMP  
Monitoring period 1<sup>st</sup>: 04-07-2003 to 06-01-2012

Report No. 600500626

**09 November 2012**

TÜV SÜD Industrie Service GmbH  
Carbon Management Service  
Westendstrasse 199 - 80686 Munich - GERMANY



Report No.	Date of first issue	Version No.:	Revision date
600500626	07 Sep 2012	03.1	09 Nov 2012
<b>Subject:</b>	First Periodic Verification		
<b>Executing Operational Unit:</b>			
TÜV SÜD Industrie Service GmbH, Carbon Management Service Westendstrasse 199 - 80686 Munich, Federal Republic of Germany			
<b>Project Participant (client):</b>			
<ul style="list-style-type: none"><li>• International Bank for Reconstruction and Development as Trustee of the BioCarbon Fund (Bio CF) (client),</li><li>• Precious Woods Nicaragua SA</li><li>• Government of Canada - Ministry of Foreign Affairs and International Trade</li><li>• Government of Italy - Ministry for the Environment, Land and Sea</li><li>• Kingdom of Spain - Ministry of Environment and Rural and Marine Affairs &amp; Ministry of Economy and Finance</li><li>• Luxembourg, Ministry of Sustainable Development and Infrastructure</li><li>• Eco-Carbone S.A.S. (France)</li><li>• Japan , involved indirectly: Authorized Participants: Idemitsu Kosan Co., Ltd. ; Japan Iron and Steel Federation (JISF) ; Japan Petroleum Exploration Co., Ltd. (JAPEX) ; The Okinawa Electric Power Co., Inc. ; Sumitomo Chemical ; Sumitomo Joint Electric Power Co., Ltd. ; Suntory Holdings Limited ; The Tokyo Electric Power Co., Inc.</li></ul>			
<b>Registration number / Project Title</b>		Project 3970: "Southern Nicaragua CDM Reforestation Project"	
<b>Monitoring period:</b>		04 Jul 2003 to 06 Jan 2012	
<b>First Monitoring Report (version/date)</b>		Version 01 / 15 Feb 2012	
<b>Final Monitoring Report (version/date)</b>		Version 03 / 07 Sep 2012	
<b>Summary:</b>			
<p>TÜV SÜD Industrie Service GmbH has performed the first periodic verification of the registered CDM project: "Southern Nicaragua CDM Reforestation Project". The project consists of the reforestation of 813 ha with teak and native tree species in Southern Nicaragua. The reforestation is carried out on former pasture lands.</p> <p>The management of Precious Woods Nicaragua S.A. is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions.</p> <p>A document review, followed by a site visit was conducted to verify the information submitted by the project participant regarding the present verification period. Based on the assessment carried out, the verifier confirms the following:</p> <ul style="list-style-type: none"><li>• the project has been implemented and operated in accordance with the description given in the registered PDD (version 04, 30 Nov 2010, registration date 07 May 2011).</li><li>• the project is implemented as described in the registered PDD and the MR; deviations are described in section 3.2.</li><li>• the monitoring plan complies with the applied methodology "Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grasslands or croplands" AR-AMS0001 / Version 05 and the monitoring has been carried out in accordance with the monitoring plan.</li></ul>			



The essential equipment used for measuring GHG removals and emission reductions are reliably and calibrated appropriately. The project is generating GHG removals as a CDM project. The verifier confirms that the GHG removals and emission are calculated without material misstatements. Our opinion refers to the project's GHG removals and emissions reported, both determined using 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 that the implementation of the project resulted in 90,188 t CO<sub>2</sub>-e of GHG removals during the verification period from 04 Jul 2003 to 06 Jan 2012

**Assessment Team Leader:**

Sebastian Hetsch

**Verification Team Members:**

Hubertus Schmidtke, Martin Opitz, Luis Miguel Aparicio Alczar

**Trainees:**

---

**Technical Review:**

Karin Wagner, Martin Seitz

**Certification Body responsible:**

Thomas Kleiser



## Abbreviations

<b>AR</b>	Afforestation / Reforestation
<b>ACM</b>	Approved Consolidated Methodology
<b>CAR</b>	Corrective Action Request
<b>CDM</b>	Clean Development Mechanism
<b>CDM-EB</b>	CDM Executive Board
<b>CER</b>	Certified Emission Reduction
<b>CMP</b>	Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol
<b>CO<sub>2</sub>e</b>	Carbon dioxide equivalent
<b>CR / CL</b>	Clarification Request
<b>DBH</b>	Diameter at Breast Height
<b>DNA</b>	Designated National Authority
<b>DOE</b>	Designated Operational Entity
<b>EIA / EA</b>	Environmental Impact Assessment / Environmental Assessment
<b>ER</b>	Emission Reduction
<b>FAR</b>	Forward Action Request
<b>FSR</b>	Feasibility Study Report
<b>GHG</b>	Greenhouse Gas(es)
<b>GIS</b>	Geographic Information System
<b>GPS</b>	Global Positioning System
<b>GWP</b>	Global Warming Potential
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>IRL</b>	Information Reference List
<b>KP</b>	Kyoto Protocol
<b>MP</b>	Monitoring Plan
<b>MR</b>	Monitoring Report
<b>PDD</b>	Project Design Document
<b>PP</b>	Project Participant
<b>QA/QC</b>	Quality Assurance / Quality Control
<b>SOP</b>	Standard Operational Procedure
<b>TÜV SÜD</b>	TÜV SÜD Industrie Service GmbH
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change
<b>VVM</b>	Validation and Verification Manual

**Main Documents (referred to in this report)**

Methodology (name / version)	AR-AMS0001 version 05: Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grasslands or croplands.	
Scope	14	
Technical Area	14.1	
Registered PDD:	Version 04, date 30 Nov 2010	
Revised Monitoring Plan:	n.a.	
	Version	Date
Published Monitoring Report	01	15 Feb 2012
Revised Monitoring Report	03	07 Sep 2012
Project documentation link:	<a href="http://cdm.unfccc.int/Projects/DB/BVQI1283980227.35/view">http://cdm.unfccc.int/Projects/DB/BVQI1283980227.35/view</a>	

**Table of Contents****Page**

1	Introduction .....	5
1.1	Objective .....	5
1.2	Scope .....	5
1.3	GHG Project Description .....	5
2	Methodology .....	6
2.1	Verification Process .....	6
2.2	Verification Team .....	7
2.3	Review of Documents .....	7
2.4	On-site Assessment and follow-up Interviews .....	8
2.5	Quality of Evidence to Determine Emission Reductions .....	8
2.6	Resolution of Clarification and Corrective and Forward Action Requests .....	8
2.7	Internal Quality Control .....	9
3	Verification Results .....	10
3.1	FARs from Validation / Previous Verification .....	10
3.2	Project Implementation in accordance with the registered Project Design Document .....	10
3.3	Compliance of the Monitoring Plan with the Monitoring Methodology .....	10
3.4	Compliance of the Monitoring with the Monitoring Plan .....	10
3.5	Assessment of Data and Calculation of Greenhouse Gas Emission Reductions .....	13
4	Summary of Findings .....	13
5	Verification Statement .....	16

Annex 1: Verification Protocol

Annex 2: Information Reference List

Annex 3: Appointment Certificate



## 1 INTRODUCTION

### 1.1 Objective

The International Bank for Reconstruction and Development as a trustee of Biocarbon Fund has commissioned an independent verification by TÜV SÜD Industrie Service GmbH (TÜV SÜD) of its registered CDM project: "Southern Nicaragua CDM Reforestation Project".

The objective of the verification work is to comply with the requirements of paragraph 62 of the 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 "Southern Nicaragua CDM Reforestation Project" Version 04, and that all physical features (newly established forest areas and required monitoring 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 CDM 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 "Simplified baseline and monitoring methodologies for small-scale afforestation and reforestation project activities under the clean development mechanism implemented on grasslands or croplands", AR-AMS0001 / Version 05.

### 1.2 Scope

The verification scope encompasses an independent and objective review and ex-post determination of the monitored GHG removals and 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 CMP and the EB and any other information and references relevant to the project activity's resulting GHG removals. These documents are reviewed against the requirements of the Kyoto Protocol, the CDM Modalities and Procedures and related rules and guidance.

Based on the requirements in the VVM, 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 GHG removals and 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 GHG Project Description

Project activity: "Southern Nicaragua CDM Reforestation Project"

UNFCCC registration number: 3970

Project Participants:

- International Bank for Reconstruction and Development as Trustee of BioCarbon Fund (BioCF) (client),
- Precious Woods Nicaragua SA.



- Government of Canada - Ministry of Foreign Affairs and International Trade
- Government of Italy - Ministry for the Environment, Land and Sea
- Kingdom of Spain - Ministry of Environment and Rural and Marine Affairs & Ministry of Economy and Finance
- Luxembourg, Ministry of Sustainable Development and Infrastructure
- Eco-Carbone S.A.S. (France)
- Authorized Participants from Japan: Idemitsu Kosan Co., Ltd. ; Japan Iron and Steel Federation (JISF) ; Japan Petroleum Exploration Co., Ltd. (JAPEX) ; The Okinawa Electric Power Co., Inc. ; Sumitomo Chemical ; Sumitomo Joint Electric Power Co., Ltd. ; Suntory Holdings Limited ; The Tokyo Electric Power Co., Inc.´

Location of the project:	Finca la Pimienta	N 11.17	W 85.67
		N 11.21	W 85.62
	Finca Javalina	N 11.14	W 85.42
		N 11.16	W 85.38
	Finca Esperanza	N 11.11	W 84.52
		N 11.09	W 84.56

*The exact location of the project activity is as defined in the documents presented for the validation.*

Date of registration: 07 May 2011  
 Starting date of the crediting period: 04 Jul 2003  
 Crediting period (fixed): 04 Jul 2003 – 03 Jul 2033

The project consists of the reforestation of 813 ha with teak and native tree species in Southern Nicaragua. The reforestation is carried out on former pasture lands. The harvesting cycle is expected to vary between 18 and 30 years, depending on site quality and silvicultural requirements of species. It is foreseen to replant trees or use coppice system to maintain forest cover on the area.

## 2 METHODOLOGY

### 2.1 Verification Process

The verification process is based on the approach depicted in the 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 direct 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" before submission to the CDM-EB.

## 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 ER achieved by the project activity in the relevant monitoring period for this verification.

The CB TÜV SÜD operates the following qualification levels for team members that are assigned by formal appointment rules:

- Assessment Team Leader (ATL);
- Verifier (V);
- Verifier Trainee (T);
- Technical Experts (TE).

The verification team consisted of the following members:

Name	Qualification	Coverage of scope	Coverage of technical area	Coverage of financial aspect	Host country experience
<b>Sebastian Hetsch</b>	<b>ATL</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Hubertus Schmidtke*	V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Martin Opitz*	V	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Luis Miguel Aparicio Alcázar*	TE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

\* onsite

Technical reviewer:

- Karin Wagner (Technical Reviewer)
- Martin Seitz (support for coverage of respective TA)

## 2.3 Review of Documents

The Monitoring Report version 01 submitted by the PP was made publicly available on the UNFCCC website before the verification activities started. The published MR was assessed based on all the relevant documents as listed above. 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 sample design and plot layout for measuring the GHG removals, 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 GHG removals and 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

During 13-03-2012 until 18-03-2012, TÜV SÜD performed a physical site inspection and on-site interviews with project stakeholders to:

- confirm the implementation and operation of the project,
- 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,
- check the monitoring equipment against the requirements of the PDD and the approved methodology,
- review the calculations and assumptions used to obtain the GHG data and ER,
- 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 Quality of Evidence to Determine GHG removals and Emission Reductions

Among several evidence items submitted, the following relevant and reliable evidence material have been used by the audit team during the verification process:

- External data (e.g. scientific publications / IPCC LULUCF 2003) (IRL 18, 30)
- Quality assurance documents (IRL 28)
- Physical observations of project implementation by the audit team (IRL 29)
- Re- measurement of sample plots (IRL 29)

Sufficient evidence covering the full verification period in the required frequency is available to validate the figures stated in the final MR. The evidence are discussed in chapter 3 of this report. Specific cross-checks have been done in cases that further sources were available. The monitoring report's figures were checked by the audit team against the raw data. The data collection system meets the requirements of the monitoring plan as per the methodology.

## 2.6 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 removals and emission reduction. The findings raised as Forward Action Requests (FARs) (if any) 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.

Concerns raised in the desk review, the on-site audit assessments and the follow up interviews and the responses provided for the raised concerns are documented in Annex 1 (verification protocol) 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 ER;
- 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 request.

## **2.7 Internal Quality Control**

As a final 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. If the documents have been satisfactorily approved, the Request for Issuance is submitted to the CDM-EB along with the relevant documents.

### 3 VERIFICATION RESULTS

In the following sections, the results of the verification are stated. The verification results relate to the project performance as documented and described in the final PDD and Monitoring Report (Version 03, dated 07 Sep 2012). The verification findings for each verification subject are presented below.

#### 3.1 FARs from Validation / Previous Verification

No FARs have been presented in the validation report.

#### 3.2 Project Implementation in accordance with the registered Project Design Document

The project is implemented according to the description presented in the registered PDD and the MP. Minor changes in project implementation in line with EB 63, Annex 27 is the reduction in planted area by 124.08 ha. Of these 124.08 ha, 59.02 ha will be replanted in 2013, while 65.06 ha will not be replanted due to poor soil condition and high mortality in this area. The audit team inspected the areas and discussed the issue on site with the responsible personnel. The audit team found the change to be in accordance with EB guidelines (EB 63, Annex 27), as they can be identified as minor in nature.

The values in net anthropogenic GHG removals is lower (90,188 t CO<sub>2</sub>-e) than estimated in the PDD (157,509 t CO<sub>2</sub>-e), due to the reduction in planted area and less increment than expected at project design.

The verifier confirms, through the visual inspection that all physical features of the proposed CDM project activity including data collecting systems and storage have been implemented in accordance with the registered PDD.

The project activity is operational and the same has been confirmed on-site.

#### 3.3 Compliance of the Monitoring Plan with the Monitoring Methodology

The monitoring plan is in accordance with the approved methodology, AR-AMS0001 / Version 05, applied by the proposed CDM project activity. Neither a revision nor a deviation to the monitoring plan has been requested to the CDM Executive Board.

#### 3.4 Compliance of the Monitoring with the Monitoring Plan

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD. All parameters were monitored and determined as per the Monitoring Plan. The verification of the parameters required by the monitoring plan is provided as follows:

Parameters to be monitored:

<b>Data / Parameter:</b>	Project boundary (Name of parameter as per methodology: "Location of the area")
<b>Data unit:</b>	
<b>Description:</b>	Boundary of the project verified at the start of the project and at time of each field measurement
<b>Source of data used:</b>	Project map and GPS locating (IRL 16)
<b>Means of</b>	The boundaries have been verified by the audit team by using GPS devices.

verification/Comments:	The data obtained in the field have been compared with the data provided by the client
Cross-check	NA

<b>Data / Parameter:</b>	Area of stratum (Name of parameter as per methodology: “ $A_i$ – Size of the areas[...] for each strata”)
Data unit:	ha
Description:	Actual area of each stratum
Source of data used:	Stratification map and data (IRL 16)
Means of verification/Comments:	The audit team assessed the GIS shape files provided and verified the boundaries of the project area by using GPS devices. The data obtained in the field have been compared with the data provided by the client.
Cross-check	NA

<b>Data / Parameter:</b>	Plot location
Data unit:	Degrees, minutes and seconds latitude longitude projection (Datum WGS84)
Description:	Geographic location of each permanent sample plot
Source of data used:	Project and plot map and GIS files (IRL 17)
Means of verification/Comments:	The plot locations have been verified during the onsite visit by the audit team by using GPS devices. The data obtained in the field have been compared with the data provided by the client.
Cross-check	N/A

<b>Data / Parameter:</b>	Diameter at breast height (DBH)
Data unit:	cm
Description:	Diameter of each tree inside of the plot at 1.30 m height
Source of data used:	Plot measurement of the PP and data sheets from measurement of sample plot (IRL 13, 14)
Means of verification/Comments:	During onsite visit the DBH of the trees on sample plot were re-measured and compared with the actual measurements of the PP (IRL 29)
Cross-check	Scientific studies indicating growth of diameter of trees (IRL 18)

Additional parameters to be monitored, not defined in the methodology, but in the MP:

<b>Data / Parameter:</b>	Trees species
Data unit:	Scientific name
Description:	Identification of the species of each tree measured
Source of data used:	Plot measurement of the PP and data sheets from measurement of sample plot (IRL 13, 14)
Means of verification/Comments:	During onsite visit the audit team verified the information by identifying the trees species on the sample plots (IRL 29)
Cross-check	N/A

<b>Data / Parameter:</b>	Age of plantation
Data unit:	Years
Description:	Age of the plantation, counted since planted year
Source of data used:	Plot measurement of the PP and data sheets from measurement of sample plot (IRL 13, 14)
Means of verification/Comments:	During onsite visit the audit team verified the information by assessing the age of the plantation (IRL 29)
Cross-check	NA

<b>Data / Parameter:</b>	Number of trees
Data unit:	Number
Description:	Quantity of trees included in the sample plots
Source of data used:	Plot measurement of the PP and data sheets from measurement of sample plot (IRL 13, 14)
Means of verification/Comments:	The number of trees per plot were assessed during the onsite visit of the audit team (IRL 29)
Cross-check	NA

<b>Data / Parameter:</b>	Above ground biomass
Data unit:	m <sup>3</sup> /ha <sup>-1</sup>
Description:	Dry matter contained in each tree over the ground
Source of data used:	Field measurements of DBH (IRL 13, 14) and respective calculations (IRL 19)
Means of verification/Comments:	The audit team assessed the calculations provided and verified the sources of applied values and equations
Cross-check	Scientific studies indicating growth of diameter of trees (IRL 18)

The parameter on **leakage monitoring** are not applicable, as no leakage occurs in this project activity, as described in the PDD and Validation Report, as well as in the MR (Section E.3) and confirmed during this verification.

The **following parameters are not required by the applied methodology**, but were included in the Monitoring Plan. However they do not need to be monitored, only recorded before project start. Respective information is presented in the Monitoring report and was assessed by the audit team:

- Stratum ID
- Sub-stratum ID
- Confidence level
- Precision level
- Standard deviation of each Stratum
- Number of sample plots
- Sample plot ID
- Carbon fraction

The **following parameters are mostly not required by the applied methodology**, but were included in the Monitoring Plan. In line with EB 63, Annex 26, only data and parameters obtained from field measurement are required to be monitored; and monitoring is not required for data, parameters, or variables appearing as intermediate values in calculation steps and those taken from existing sources:

- Carbon stock in above ground biomass
- Carbon stock in below ground biomass
- Mean carbon stock in above ground biomass per stratum and per species
- Mean carbon stock in below ground biomass per stratum and per species
- Total carbon stock change / Total CO<sub>2</sub>

Hence the parameters listed above were not explicitly listed in the Monitoring Report.



### 3.5 Assessment of Data and Calculation of Greenhouse Gas removals and Emission Reductions

All data has been available and all the parameters have been monitored in accordance with the registered monitoring plan.

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

The verifier confirms that the methods and formulae used to obtain the baseline, project and leakage GHG removals and emissions are appropriate. The same has been done in accordance with the methods and formulae described in the registered monitoring plan and applicable methodology.

The verifier confirms that the monitoring report includes all parameters and the monitored data at the intervals required by the methodology and PDD.

The verifier confirms that all the default values (ex-ante values from PDD) have been correctly justified. All the default values are explicitly mentioned in the monitoring report, no emission factors were applied as per the applied methodology.

## 4 SUMMARY OF FINDINGS

The verifier confirms that the published MR and related documents are complete and verifiable in accordance with the CDM requirements. All the findings that were raised by the verification team, the responses by the PPs and the conclusion from the team are presented in Annex 1. The means of verification and resulting changes in the MR or related documents are identified in the following table:

<b>CAR 1:</b> The PP shall ensure that the total GHG removals by sink in the project area are calculated correctly, using the correct values for area per stratum (see also CAR 2).
<b>CAR 1, means of verification</b>
The PPs provided revised calculations and adjusted the MR respectively. The audit team assessed the calculations provided and checked the adjustments conducted in the MR.
<b>CAR 1, changes in the MR or related documents</b>
Calculations have been revised. The emissions reductions have been adjusted in relevant sections of the monitoring report

<b>CAR 2:</b>
<ul style="list-style-type: none"> <li>• The PP shall provide the correct boundary of the project strata.</li> <li>• The PP shall ensure that the area of each strata is determined correctly.</li> </ul>
<b>CAR 2, means of verification</b>
The PPs provided revised GIS shape files of the project area. The audit team assessed the GIS shape files and cross-checked the correctness of the boundaries of the strata and planted area.
<b>CAR 2, changes in the MR or related documents</b>
GIS shape files have been revised, the project area was reduced. The change in project area is in line with EB 63 Annex 27 §3 n. Maps in the MR have been adjusted accordingly



<b>CR 1:</b> The PP shall clarify the extent of the ploughed area
<b>CR 1, means of verification</b>
The PPs provided calculations of fertilizer use and GIS shape files of the ploughed area. The audit team assessed the calculations of fertilizer use and the GIS shape files of the ploughed area ensuring compliance with the checking compliance with applied methodology respectively the applicability conditions of the methodology
<b>CR 1, changes in the MR or related documents</b>
No changes needed

<b>CR 2:</b> The PP shall clarify what are the specific QA/QC procedures for the monitoring including allowed level of error of field measurements and respective correction measures obliged in case of not acceptable errors
<b>CR 2, means of verification</b>
The PPs provided project specific QA/QC procedures. The Audit team assessed the documents ensuring compliance with good practice and its correct application for the internal QA/QC monitoring of the project by the PPS
<b>CR 2, changes in the MR or related documents</b>
Project specific QA/QC procedures have been provided determining allowed levels of errors of the different parameters measured in the field and respective correction measures obliged in case of unacceptable errors

<b>CAR 3:</b> As per guidelines for Monitoring Report, the PP shall include a line diagram showing all relevant monitoring points
<b>CAR 3, means of verification</b>
The PPs provided project specific diagram showing all relevant monitoring points/steps. The Audit team assessed the line diagram comparing it with corresponding documents provided by the PPs and its notes taken during onsite visit
<b>CAR 3, changes in the MR or related documents</b>
A respective line diagram showing all relevant monitoring points/steps was included in the MR

<b>CAR 4:</b> The PP shall identify the correct number of sample plots inside each stratum, considering changes in boundary of project strata (see CAR 2).
<b>CAR 4, means of verification</b>
On basis of the adjusted project area (CAR 2) the PPs provided a revised MR. The audit team assessed the MR by checking compliance with the project specific GIS shape files
<b>CAR 4, changes in the MR or related documents</b>
Numbers of sample plots per strata have been adjusted in the MR

<b>CAR 5:</b> As per CAR 2, the PP shall provide correct information on project area
<b>CAR 5, means of verification</b>
On basis of the adjusted project area (CAR 2) the PPs provided a revised MR. The audit team assessed the MR checking compliance with the project specific GIS shape files
<b>CAR 5, changes in the MR or related documents</b>
Figures in Section D of the MR have been revised according to CAR 2





<b>CR 3:</b> Clarify why Carbon Fraction is listed in the Monitoring Plan as parameter to be monitored
<b>CR 3, means of verification</b>
In compliance with the methodology the monitoring report of the MR has been revised. The Audit team assessed the revised MR checking compliance with the methodology applied
<b>CR 3, changes in the MR or related documents</b>
Carbon Fraction was removed from section D2 of the MR

<b>CAR 6:</b> The PP shall revise the calculations according to the revision the project strata.
<b>CAR 6, means of verification</b>
On basis of the adjusted project area (CAR 2) the PPs provided revised calculations. The Audit team assessed the calculations checking compliance with the project specific GIS shape files
<b>CAR 6, changes in the MR or related documents</b>
CER Calculations have been revised

<b>CAR 7:</b> The PP shall ensure to calculate the precision level in a correct manner, in particular the correct degrees of freedom.
<b>CAR 7, means of verification</b>
In compliance with the formula applied the variance calculations have been adjusted taking into account the project specific degrees of freedom. The Audit team assessed the variance calculations checking compliance with the formulas applied
<b>CAR 7, changes in the MR or related documents</b>
Variance Calculations have been revised





Industrie Service

## 5 VERIFICATION STATEMENT

TÜV SÜD Industrie Service GmbH has performed the first periodic verification of the CDM project: "Southern Nicaragua CDM Reforestation Project". The verification is based on the currently valid documentation of the UN Framework Convention on Climate Change (UNFCCC). The management of Precious Woods Nicaragua S.A. is responsible for the preparation of the GHG removals and emissions data and the reported GHG emission reductions on the basis set out within the project's Monitoring Plan indicated in the registered PDD version 04, dated 30 Nov 2010 and the applied methodology AR-AMS0001 version 05.

The verifier confirms that:

- the development and maintenance of records and reporting procedures are in accordance with the registered monitoring plan;
- the project is operated as planned and described in the project design document approved by the EB;
- the monitoring practices being essential for measuring GHG removals by sinks and emission reduction is reliable and appropriate;
- the monitoring system is in place to allow measurements of data of GHG removals by sink;
- the GHG removals and emissions are calculated without material misstatements;
- the monitoring plan in Monitoring Report is as per the PDD and monitoring plan approved by the EB;
- the monitoring plan in the approved PDD is as per the applied methodology.

Our opinion is based on the project's GHG removals and emissions reported, 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:

Reporting period: From 04 Jul 2003 to 06 Jan 2012

Verified GHG removals and emissions in the above reporting period:

Baseline GHG removals:	0	t CO <sub>2e</sub>
Project emissions:	0	t CO <sub>2e</sub>
Leakage emission:	0	t CO <sub>2e</sub>
Net anthropogenic GHG removals:	90,188	t CO <sub>2e</sub>

Munich, 09 November 2012

Certification Body "climate and energy"  
TÜV SÜD Industrie Service GmbH

Munich, 09 November 2012

Assessment Team Leader



## Annex 1

### Verification Protocol of the AR-CDM Project: “Southern Nicaragua CDM Reforestation Project”

#### AR-CDM Verification: Requirements Checklist for AR-AMS0001 / Version 05

##### 1. Project implementation in accordance with the registered project design document

VVM §195: The DOE shall identify any concerns related to the conformity of the actual project activity and its operation with the registered project design document.

Means of verification

196. The DOE shall, by means of an on-site visit, assess that all physical features of the proposed CDM project activity proposed in the registered PDD are in place and that the project participants has operated the proposed CDM project activity as per the registered PDD. If an on-site visit is not conducted, the DOE shall justify the rationale of the decision.

197. *If the DOE identifies that the implementation or operation of CDM project activity does not conform with the description contained in the registered PDD, the DOE shall conduct an assessment on the potential impacts due to these changes following the relevant guidelines established by the CDM Executive Board and based on this assessment, the DOE shall submit a notification or a request for approval of changes from the project activity as described in the registered PDD prior to the conclusion of the verification/certification for the corresponding monitoring period*

CHECKLIST QUESTION	Ref	PDD description	Monitoring Report	Ver. Find.	Final Concl.
<b>A. General Description of the Project Activity</b>					
<b>A.1. Brief description of the project activity</b>					
Is a description of the project activity presented in this section, including: 1. Purpose of the project activity and the measures taken to remove greenhouse gases; 2. Brief description of the installed technology (tree species);	2, 3	<ul style="list-style-type: none"> <li>Reforestation of 813 ha with teak and native tree species.</li> <li>Contribute to the improvement of living conditions by providing job opportunities.</li> <li>FSC certified since 2007</li> </ul>	<ul style="list-style-type: none"> <li>Information is provided as in PDD.</li> <li>The size and species planted per farm are listed</li> <li>Date of first planting and overall duration of initial planting phase is mentioned</li> </ul>	<b>CAR</b>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref	PDD description	Monitoring Report	Ver. Find.	Final Concl.
3. Relevant dates for the project activity (e.g. planting date, maintenance, harvest.). 4. Total GHG removal achieved in this monitoring period?		<ul style="list-style-type: none"> <li>Harvesting cycle of 18-30 years depending on the growth performance</li> </ul>	<p>The calculation of total GHG removals by sink is not correct, as the stratification was found to be incorrect during the onsite visit (see also sections below)</p> <p><b><u>Corrective Action Request 1.</u></b></p> <p>The PP shall ensure that the total GHG removals by sink in the project area are calculated correctly, using the correct values for area per strata (see also CAR 2).</p>		
<b>A.2 Project Participants</b>					
Are project participants listed in MR in line with PDD? If no, are respective procedures followed to change PPs?	2, 3	PPs listed: <ul style="list-style-type: none"> <li>Precious Woods Nicaragua SA</li> <li>International Bank for Reconstruction and Development as a trustee of Biocarbon Fund</li> <li>Canada</li> </ul>	PPs listed in MR: <ul style="list-style-type: none"> <li>Precious Woods Nicaragua SA</li> <li>International Bank for Reconstruction and Development as a trustee of Biocarbon Fund</li> <li>Canada</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.3. Location of the project activity</b>					
Is complete information of the location of the project activity provided, including town, city, country and GPS coordinates?	2, 3, 16, 17	Information provided in the PDD	Information provided in PDD and GIS files submitted	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are GIS files of the project boundary provided, or other means for identification of the project boundary?	2, 3, 16, 17		<p>GIS files are submitted showing the project boundary.</p> <p>Concerning the stratification of the area it was found that some areas were overlapping. Hence some strata were too large.</p> <p><b><u>Corrective Action Request 2.</u></b></p> <ul style="list-style-type: none"> <li>The PP shall provide the correct boundary of the project strata.</li> <li>The PP shall ensure that the area of each stratum is determined correctly.</li> </ul>	<b>CAR</b>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref	PDD description	Monitoring Report	Ver. Find.	Final Concl.
<b>A.4. Technical description of the project</b>					
Is a description of the technology applied in the project activity included?	2, 3, 8, 9	A description on: <ul style="list-style-type: none"> <li>• Planting</li> <li>• Tending</li> <li>• Thinning and Harvesting</li> <li>• Fire prevention</li> <li>• Biodiversity</li> </ul> is provided.	In the MR the same description is provided as in the PDD. Due to discussion of change in project area, the audit team re-assessed the total extension of the ploughed area of the project (as applicability condition of the project area). The methodology requires that the project area affected by side preparation does not exceed 10% of the project area eligible for the A/R CDM project activity (AR-AMS0001 (Version 05) Section I 1 d)  <b><u>Clarification Request 1.</u></b> The PP shall clarify the extent of the ploughed area	CR	<input checked="" type="checkbox"/>
<b>A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity</b>					
Is the complete reference of the methodology applied and tools included in the MR?	2, 3	Methodology applied is : AR-AMS0001 version 05	Methodology applied is : AR-AMS0001 version 05	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.6. Registration date of the project activity</b>					
Is the registration date included, in line with UNFCCC project database?	2, 3, 4	n/a	Registration date is included in line with the UNFCCC project database	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>A.7. Crediting period of the project activity and related information (start date and choice of crediting period):</b>					
Is the start date and crediting period included in line with the registered PDD?	2, 3, 4	PDD indicates 04 July 2003 as start of project and start of crediting period	Project start was 04 July 2003 when the first planting took place.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
When applicable, the description shall also include changes to the start date of the crediting period post-registration that have been accepted by the Board		-	n/a		
<b>A.8. Name of responsible person(s)/entity(ies)</b>					
Are contact information of the person(s)/entity(ies) responsible for completing the monitoring report form	2, 3	Precious woods Central America will be in charge	Victor Arce. Maderas Preciosas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

# PERIODIC VERIFICATION



Industrie Service

CHECKLIST QUESTION	Ref	PDD description	Monitoring Report	Ver. Find.	Final Concl.
(CDM-MR) included?					
<b>B. Implementation of the project activity</b>					
<b>B.1. Implementation status of the project activity</b>					
Is the <u>starting date</u> of operation of the project activity indicated?	2, 3	Project start was 04 July 2003. The project is fully implemented	Project start was 04 July 2003. The project is fully implemented. There was no delay in project implementation compared to the registered PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Does the report clearly describe the <u>status of implementation</u> and starting date of operation for each site? (for project activities that consist of more than one site)	2, 3, 7, 9	Planting phases for each year are included in the PDD	Planting phases for each year are included in the MR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Does the verification report describe the reasons and present the expected implementation dates if there is a phased-implementation delay?		-	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Does the report indicate the progress of the proposed CDM project activity achieved in each phase? (for CDM project activities with phased implementation)	2, 3, 7, 9, 15	-	The project area was planted as foreseen in the registered PDD	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Does the report contain information regarding actual <u>operation of the project activity</u> during this monitoring period?  Is information on special events included, in particular losses in carbon stock such as fire, pest and disease etc?	2, 3, 7, 9, 15	-	No abiotic events occurred that lead to a loss of carbon stock. During the onsite visit nothing contrary could be observed. The actual carbon stock is lower than its forecast due to the overestimation of the growing potential of parts of the project area and negative interactions between existing vegetation and the species planted.	<input checked="" type="checkbox"/>	
Is a brief description of events or situations included, that occurred during the monitoring period, which may impact the applicability of the methodology? How were the issues resulting from these events or situations addressed?	2, 3	-	No events occurred which impacted the applicability of the methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all relevant licences obtained? (e.g. environmental licences)	2, 3, 15	-	Respective documents of INAFOR (Instituto nacional forestal of Nicaragua) have been provided during onsite visit and revised by the auditing team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



CHECKLIST QUESTION	Ref	PDD description	Monitoring Report	Ver. Find.	Final Concl.
Are land titles and carbon rights hold by the PP? In case not all land was under control at validation, is it ensured that 100% of the land is under control of the PP?	2, 3, 22, 24, 25, 26, 27	-	Respective documents of the "Republica de Nicaragua" have been provided during onsite visit and revised by the auditing team.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Is the monitoring of forest establishment and forest management carried out in line with MP and methodology?	2, 3, 8, 11, 12, 17, 21	<i>Not required by methodology and not included in PDD</i>	Not applicable, however forest management plan provides respective information.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.2. Revision of the monitoring plan</b>					
Indicate whether the monitoring plan has been revised. Include the date of approval, if revised.		-	Not indicated in MR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.3. Request for deviation applied to this monitoring period</b>					
Indicate any deviation applied to this monitoring period. Include the reference number, if any deviation applied.		-	Not indicated in MR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>B.4. Notification or request of approval of changes</b>					
Indicate any notification or request of approval of changes from the project activity as described in the registered CDM-PDD. Include the date of approval, if applicable.		-	Not indicated in MR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## 2. Compliance of the monitoring plan with the monitoring methodology

VVM §199: The monitoring plan of the proposed CDM project activity shall comply with the applied methodology.

Means of verification

200. The DOE shall verify that the validated monitoring plan is in accordance with the approved methodology applied by the proposed CDM project activity.



201. *If during verification, the DOE concludes that the monitoring plan is not in accordance with the monitoring methodology, the DOE shall request a revision to the monitoring plan prior to concluding its verification and making its certification decision. The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval by the CDM Executive Board.*
202. *For monitoring aspects that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency), the DOE is encouraged to bring to the attention of the CDM Executive Board issues which may contribute in enhancing the level of accuracy and completeness of the monitoring plan.*

### 3. Compliance of monitoring with the monitoring plan

VVM § 204. Monitoring of reductions in GHG emissions to result from the proposed CDM project activity shall be implemented in accordance with the monitoring plan contained in the registered PDD or the accepted revised monitoring plan

Means of verification

205. The DOE shall confirm that:

- (a) The monitoring plan and the applied methodology have been properly implemented and followed by the project participants;
- (b) All parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions have been sufficiently monitored and updated as applicable, including:
  - (i) Project emission parameters;
  - (ii) Baseline emission parameters;
  - (iii) Leakage parameters;
  - (iv) Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan.
- (c) The accuracy of equipment used for monitoring is in accordance with the relevant guidance provided by the CDM Executive Board and is controlled and calibrated in accordance with the monitoring plan;
  - (i) Monitoring results are consistently recorded as per approved frequency;
  - (ii) Quality assurance and quality control procedures have been applied in accordance with the monitoring plan.



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
<b>C. Description of the monitoring system</b>					
Is a description of the monitoring system included in the MR?	2, 3, 21	The monitoring system is described in the PDD.	A brief description of: <ul style="list-style-type: none"> <li>• Ex post stratification</li> <li>• Calculation of the number of sample plots</li> <li>• Sample size</li> <li>• Permanent sample plot location</li> <li>• Data record</li> <li>• QA/QC Procedures</li> <li>• Organizational structure</li> <li>• Roles and responsibilities</li> </ul> are provided in the monitoring report.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Data collection procedures</b>					
Are data collection procedure described for: <ul style="list-style-type: none"> <li>• Data generation (<i>see also section D for individual parameters</i>)</li> </ul>	2, 3, 11, 12	SOPs and respective training is mentioned in the PDD.	SOPs for field measurement have been provided, the measurements observed have been conducted in line with company own SOPs.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Data handling (aggregation, recording, calculation and reporting), in particular transcribing field data to digital calculation sheets (<i>see also section D for individual parameters</i>)</li> </ul>	2, 3, 11, 12, 13,14	-	Transcription of field data into digital data is described in the MR. The data entry has been checked by the auditing team during onsite-visit, no errors could be observed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• Data storage, including back-up of the field sheets and digital data</li> </ul>	2, 3, 13,14	Verification measures and data storage is described in the PDD.	Data storage, maintenance and archiving is described in the MR. Data will be stored physically and digitally for at least 5 years after verification.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> <li>• QA/QC procedures (e.g. re-check of data measurement, data entry, etc - <i>see also section D for individual parameters</i>)</li> </ul>	2, 3, 21	-	Data will be verified on several stages. <ul style="list-style-type: none"> <li>• Data will be collected according to SOPs; staff in charge has to pass training courses on field measurement</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
			<ul style="list-style-type: none"> <li>Plausibility checks will be held while digitalizing the field data</li> <li>Field data will be verified by remeasurement of a certain amount of sample plots</li> </ul> <p>See also CAR 4</p>		
<b>Quality assurance and quality control system</b>					
Is a quality assurance and quality control system employed by the project activity?	2, 3, 21	QA/QC is summarized in the PDD (section B.8.2.)	<p>The PDD does not contain specific information on the level of error allowed for the field measurements when conducting QA/QC procedures</p> <p><b><u>Clarification Request 2.</u></b></p> <p>The PP shall clarify what are the specific QA/QC procedures for the monitoring including allowed level of error of field measurements and respective correction measures obliged in case of not acceptable errors</p>	<b>CR</b>	<input checked="" type="checkbox"/>
<b>Organizational structure</b>					
Is the organization structure explained, including roles and responsibilities of personnel, and emergency procedures for the monitoring system?	2, 3	Monitoring will be carried out by a trained tam lead by director of research of Precious Woods Central America Financial Results are reported according to IAS 41	<p>Organization structure is provided in the MR. Personnel in charge is named and listed.</p> <p>Office manager: Victor Arce Monitoring: Dennis Martinez Audit Section: Mario Espinoza</p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Is a line diagrams included showing all relevant monitoring points?	2, 3	-	<p>No line diagram is included in the MR as required by the MR template.</p> <p><b><u>Corrective Action Request 3.</u></b></p> <p>As per guidelines for Monitoring Report, the PP shall include a line diagram showing all relevant monitoring points.</p>	<b>CAR</b>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
<b>Sample design</b>					
Are sample plots laid out as per Monitoring Plan?	2, 3, 12, 16, 17,	The plots are located systematically with a random start prior to establishment with the GIS program, geo-referenced and marked in the field. Series number, stratum and GPS coordinates are registered in a database.	The plots are located systematically with a random start and allocation over a grid laid over the area. All plots are geo-referenced and marked in the field. Series number, stratum and GPS coordinates are registered in a database.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are the locations of the sample plot selected on an unbiased basis?	2, 3, 12, 16, 17,		Permanent sample plots are laid out, located systematically with a random start. Sample plots circular, 500m2 with 12.62 m radius. See also comments above	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Stratification</b>					
Is the ex-post stratification carried out in line with the MP and Methodology?	2, 3, 12, 16, 17,	Stratification is carried out based on planting year and species planted	Stratification is carried out based on planting year and species planted. Further, stratification into marginal, poor, average and high growth conditions has been conducted. SOPs for ex-post stratification has been provided and found to be in line with good forestry praxis.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>D. Data and parameters</b>					
D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors					
Are all parameters "not monitored" listed as per PDD and applied methodology?	2, 3, 12	The monitoring plan lists the parameters as per methodology.	Applied methodology does not explicitly list parameters that do not need to be monitored. Nevertheless parameters not monitored and determined at validation as well as default values and factors are listed.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all data and parameters "available at validation" described using the CDM table format?	2, 3, 12	Additional parameter are defined in this category, which is however not	The CDM table format has been used.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.														
		a requirement by the methodology, but voluntarily defined by the PP in the MP.																	
Parameters not required by the methodology, but defined in the Monitoring Plan																			
Parameter Stratum ID (V.1) Is the parameter included as per PDD and methodology?	2, 3, 12, 16	Parameter is not required by the methodology, but was included in the monitoring plan.	Information listed in the MR are in line with the monitoring plan	☑	☑														
Parameter Sub-Stratum ID (V.2) Is the parameter included as per PDD and methodology?	2, 3, 12, 16	Parameter is not required by the methodology, but was included in the monitoring plan.	Information listed in the MR are in line with the monitoring plan  As basis for the stratification the species, planting year and performance of growth The following strata have been identified: <table><tr><td>N03A</td><td>T04M</td></tr><tr><td>N04A</td><td>T05A</td></tr><tr><td>N05A</td><td>T05M</td></tr><tr><td>N06A</td><td>T06M</td></tr><tr><td>T03H</td><td>T06P</td></tr><tr><td>T03M</td><td>T13M</td></tr><tr><td>T03P</td><td></td></tr></table> N: Native species T: Teak OX: Planting year M: Marginal P: Poor A: Average H: High	N03A	T04M	N04A	T05A	N05A	T05M	N06A	T06M	T03H	T06P	T03M	T13M	T03P		☑	☑
N03A	T04M																		
N04A	T05A																		
N05A	T05M																		
N06A	T06M																		
T03H	T06P																		
T03M	T13M																		
T03P																			
Parameter Confidence level (V.3) Is the parameter included as per PD and methodology?	2, 3, 12, 19, 27	Parameter is not required by the methodology, but was included in the monitoring plan. A confidence level of 95% has been chosen at the time of validation.	Information listed in the MR is in line with the methodology and the PDD. The confidence level has been lowered from 95% to 90% which is in line with EB decision EB 63/Annex	☑	☑														

# PERIODIC VERIFICATION



Industrie Service

Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
			26		
<i>Parameter Precision level (V.4)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 19, 27	Parameter is not required by the methodology, but was included in the monitoring plan. A precision level of 5% has been chosen at the time of validation	Information listed in the MR is in line with the methodology and the PDD. The confidence level was lowered from 5% to 10% which is in line with EB decision EB 63/Annex 26	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parameter Standard deviation of each stratum (V.5)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 19, 27	Parameter is not required by the methodology, but was included in the monitoring plan.	Information listed in the MR is in line with the methodology and the PDD. Standard deviation on basis of inventory measurements have been provided.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parameter Number of sample plots (V.6)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 17	Parameter is not required by the methodology, but was included in the monitoring plan.	Information listed in the MR is in line with the methodology and the PDD. On basis of the sub-strata identified 701 permanent sample plots have been calculated in order to meet the required precision level. Considering that the initial stratification was found to be erroneous during the onsite visit, also the calculation of precision level needs to be updated (See comments above)  <b><u>Corrective Action Request 4.</u></b> The PP shall identify the correct number of sample plots inside each stratum, considering changes in boundary of project strata (see CAR 2).	<b>CAR</b>	<input checked="" type="checkbox"/>
<i>Parameter Sample plot ID (V.7)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 17	Parameter is not required by the methodology, but was included in the monitoring plan.	Information listed in the MR is in line with the methodology and the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parameter CF (V.15)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 30	Parameter is not listed in the methodology, but was included in	Information listed in the MR is in line with the methodology and the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
		the monitoring plan. Carbon fraction is defined by the methodology as 0.5. The value is also applied in this project activity.	An IPCC default value of 0.5 has been chosen in line with the applied methodology.		
<b>D.2. Data and parameters monitored</b>					
Are all "monitored" parameters listed as per PD and applied methodology?	2, 3, 12		Yes all monitored parameters are listed as per PD and applied methodology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all "monitoring" parameters described using the CDM table format?	2, 3, 12		The CDM table format has been used.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Parameter: " <i>Location of the areas where the project activity has been implemented</i> " Is the parameter included as per PD and methodology?	2, 3, 16	Parameter in Monitoring Plan: <i>Project Boundary (V.21)</i> The parameter in the MP is the same as in the methodology, although the names differ	Parameter in MR: <i>Project Boundary</i> The parameter is included in the MR as per MP. <ul style="list-style-type: none"> <li>• Description: Boundary of the project verified at the start of the project and at time of each field measurement</li> <li>• Source of data used: Project map and GPS locating</li> <li>• Value(s): See annex 3 and 4 MP</li> <li>• Indicate what the data are used for: This data is used to calculate the actual net GHG removals by sink</li> <li>• Monitoring equipment: GPS Garmin 76csx, accuracy +/- 3m</li> <li>• Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li> <li>• Calculation method (if applicable):-</li> <li>• QA/QC procedures applied: Yes</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Parameter: " <i>Ai - Size of the areas where the project activity has been implemented for each type of strata</i> " is the	2, 3, 16	Parameter in Monitoring Plan: <i>Area of Stratum (V.20)</i>	Parameter in MR: <i>Parameter Area of Stratum</i> . The parameter is included	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.																												
parameter included as per PD and methodology?		The parameter in the MP is the same as in the methodology, although the names differ	<p>in the MR as per MP.</p> <ul style="list-style-type: none"><li>Data unit: ha</li><li>Description: Actual Area of each stratum</li><li>Source of data used: Stratification map</li><li>Value(s):<table><tr><th>Stratum</th><th>Area ha</th></tr><tr><td>N03A</td><td>6.77</td></tr><tr><td>N04A</td><td>13.84</td></tr><tr><td>N05A</td><td>12.96</td></tr><tr><td>N06A</td><td>6.92</td></tr><tr><td>T03H</td><td>49.96</td></tr><tr><td>T03M</td><td>56.49</td></tr><tr><td>T03P</td><td>21.51</td></tr><tr><td>T04M</td><td>260.60</td></tr><tr><td>T05A</td><td>1.60</td></tr><tr><td>T05M</td><td>148.64</td></tr><tr><td>T06M</td><td>115.80</td></tr><tr><td>T06P</td><td>31.41</td></tr><tr><td>T13M</td><td>59.93</td></tr></table></li><li>Indicate what the data are used for: This data is used to calculate the actual net GHG removals by sink</li><li>Monitoring equipment: GPS Garmin 76csx, accuracy + 3 m</li><li>Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li><li>Calculation method (if</li></ul>	Stratum	Area ha	N03A	6.77	N04A	13.84	N05A	12.96	N06A	6.92	T03H	49.96	T03M	56.49	T03P	21.51	T04M	260.60	T05A	1.60	T05M	148.64	T06M	115.80	T06P	31.41	T13M	59.93		
Stratum	Area ha																																
N03A	6.77																																
N04A	13.84																																
N05A	12.96																																
N06A	6.92																																
T03H	49.96																																
T03M	56.49																																
T03P	21.51																																
T04M	260.60																																
T05A	1.60																																
T05M	148.64																																
T06M	115.80																																
T06P	31.41																																
T13M	59.93																																



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
			applicable):- <ul style="list-style-type: none"> <li>QA/QC procedures applied: Yes</li> </ul> <b><u>Corrective Action Request 5.</u></b> As per CAR 2, the PP shall provide correct information on project area		
Parameter: <i>Location of the permanent sample plots</i> Is the parameter included as per PD and methodology?	2, 3, 12, 17	Parameter in Monitoring Plan: <i>Plot location (V.8)</i> The parameter in the MP is the same as in the methodology, although the names differ	Parameter in MR: <i>Plot location</i> . The parameter is included in the MR as per MP.  <ul style="list-style-type: none"> <li>Data unit: Degrees, minutes and seconds latitude longitude projection (Datum WGS84)</li> <li>Description: Geographic location of each permanent sample plot.</li> <li>Source of data used: Project and plot map and GPS locating</li> <li>Value(s): See annex # 3 MR</li> <li>Indicate what the data are used for: Used to find the permanent sample plots, during the measurements</li> <li>Monitoring equipment: GPS Garmin map 76CSx, accuracy of + 3 meters</li> <li>Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li> <li>Calculation method (if applicable):-</li> <li>QA/QC procedures applied: Yes</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Diameter of tree at breast height (1.30 m) Is the parameter included as per PD and methodology?	2, 3, 12, 13, 14	Parameter in Monitoring Plan: <i>Parameter Diameter at breast height (DBH) (V.12)</i>	Parameter in MR: <i>Parameter Diameter at breast height (DBH)</i> . The parameter is included in the MR as	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
		The parameter in the MP is the same as in the methodology, although the names differ	<p>per MP.</p> <ul style="list-style-type: none"> <li>• Data unit: cm</li> <li>• Description: Diameter of each tree inside of the plot at 1,30 m height</li> <li>• Source of data used: Plot measurement</li> <li>• Value(s): EXCEL worksheet 'TreeData'</li> <li>• Indicate what the data are used for: This data is used to calculate the actual net GHG removals by sink</li> <li>• Monitoring equipment: Stewe Diameter tape, with accuracy of +0.05 cm</li> <li>• Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li> <li>• Calculation method (if applicable):-</li> <li>• QA/QC procedures applied: Yes</li> </ul>		
<i>Height of tree</i> Is the parameter included as per PD and methodology?	2, 3, 4	The parameter was defined as "not applicable" in the monitoring plan, as the biomass is calculated with a formula using as input parameter only DBH and not height of trees. PDD and Validation Report both confirm that it is not necessary to monitor this variable.	The parameter was not included, as it was defined and discussed in the Monitoring Plan and Validation that the parameter is not applicable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Basic wood density</i> Is the parameter included as per PD and methodology?	2, 3, 4	The parameter was defined as not applicable in the monitoring plan,	The parameter was not included, as it was defined and discussed in the	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>





Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
		as the the biomass is calculated with a formula using as input parameter only DBH and not basic wood density. PDD and Validation Report both confirm that it is not necessary to monitor this variable. The value for basic wood density itself that is used in the formula comes from existing published data and so monitoring is not required.	Monitoring Plan and Validation that the parameter is not applicable.		
<i>Total CO<sub>2</sub></i> Is the parameter included as per PD and methodology?	2, 19	Parameter in Monitoring Plan: <i>Total carbon stock change</i> The parameter in the MP is the same as in the methodology, although the names differ	Parameter in MR <i>Total carbon stock change</i> . The parameter is included in the MR as per MP.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Area under cropland within the project boundary displaced due to the project activity	2, 3, 4	Not applicable, as no area under cropland was on the project area before implementation (see also registered PDD and Validation report)	Not applicable.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Number of domesticated grazing animals within the project boundary displaced due to the project activity	2, 3, 4	The number of domesticated grazing animals within the project boundary displaced due to the project activity was assessed at validation in line with the methodological requirements: parameter to be assessed "one time before project is established, but before the first verification". At the validation, the project was already established. Respective information is documented in the PDD and Validation Report. The information is also presented in the Monitoring Report and was re-	Respective information on the parameter is presented in section E.3 of the Monitoring Report. No displacement of grazing animals was observed in the project activity.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## PERIODIC VERIFICATION



Industrie Service

Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
		assessed by the audit team during verification.			
Time-average number of grazing domesticated roaming animals per hectare within the project boundary displaced due to the project activity	2, 3, 4	The time-average number of grazing domesticated roaming animals per hectare within the project boundary displaced due to the project activity was assessed at validation in line with the methodological requirements: parameter to be assessed "one time before project is established, but before the first verification". No roaming animals were present in the project area before project implementation.	Not applicable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parameters not required by methodology, but defined in the Monitoring Plan</i>					
<i>Parameter Trees species (V.9)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 13, 14	The parameter is not required by the methodology. Still it was defined as a monitoring parameter in the monitoring plan.	Parameter in MR: <i>Trees species</i> . The parameter is included in the MR as per MP. <ul style="list-style-type: none"> <li>Data unit: -</li> <li>Description: Identification of the species of each tree measured</li> <li>Source of data used: Project design map</li> <li>Value(s): See annex # 4 MR</li> <li>Indicate what the data are used for: This data is used to calculate the actual net GHG removals by sink</li> <li>Monitoring equipment: -</li> <li>Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li> <li>Calculation method (if applicable):-</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
			<ul style="list-style-type: none"> <li>QA/QC procedures applied: Yes</li> </ul>		
<p><i>Parameter Age of plantation (V.10)</i> Is the parameter included as per PD and methodology?</p>	2, 3, 12, 13, 14	The parameter is not required by the methodology. Still it was defined as a monitoring parameter in the monitoring plan.	<p>Parameter in MR: <i>Age of plantation</i>. The parameter is included in the MR as per MP.</p> <ul style="list-style-type: none"> <li>Data unit: year</li> <li>Description: Years older of the plantation, counted since planted year</li> <li>Source of data used: Plot measurement</li> <li>Value(s): See annex # 5 MR</li> <li>Indicate what the data are used for: -</li> <li>Monitoring equipment: -</li> <li>Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li> <li>Calculation method (if applicable): Age years = (Planting date – measure date)/365</li> <li>QA/QC procedures applied: Yes</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<p><i>Parameter Number of trees (V.11)</i> Is the parameter included as per PD and methodology?</p>	2, 3, 12, 13, 14	The parameter is not required by the methodology. Still it was defined as a monitoring parameter in the monitoring plan.	<p>Parameter in MR: <i>Number of trees</i>. The parameter is included in the MR as per MP.</p> <ul style="list-style-type: none"> <li>Data unit: Number</li> <li>Description: Quantity of trees include in the sample plots</li> <li>Source of data used: Plot measurement</li> <li>Value(s): 22950 Trees</li> <li>Indicate what the data are used for: This data is used to calculate the actual net GHG removals by</li> <li>sink</li> </ul>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Checklist Question / Methodology requirements	Ref	PDD / Monitoring Plan description	Monitoring Report	Ver. Find.	Final Concl.
			<ul style="list-style-type: none"> <li>Monitoring equipment: This parameter can be measured without any equipment</li> <li>Measuring/ Reading/ Recording frequency: Measuring/reading and record every 5 years</li> <li>Calculation method (if applicable):-</li> <li>QA/QC procedures applied: Yes</li> </ul>		
<i>Parameter Mean DBH</i> Is the parameter included as per PD and methodology?	2, 3, 12, 13, 14	The parameter is not required by the methodology. Still it was defined as a monitoring parameter in the monitoring plan.	Parameter in MR: <i>Mean DBH</i> . The parameter is included in the MR as per MP. Information listed in the MR is in line with the methodology and the PDD. QA/QC procedures are applied	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parameter Above ground Biomass (V.14)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 13, 14, 19	The parameter is not required by the methodology. Still it was defined as a monitoring parameter in the monitoring plan.	Information listed in the MR is in line with the methodology and the PDD. The parameter is included in the MR as per MP.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Parameter Carbon Fraction (V.15)</i> Is the parameter included as per PD and methodology?	2, 3, 12, 30	As per methodology, carbon fraction shall be 0.5. The value is also applied in the calculation. Nevertheless, the PP have defined the parameter as a monitoring parameters in their Monitoring Plan	Information listed in the MR is in line with the methodology and the PDD. The parameter is included in the MR as per MP.  <b><u>Clarification Request 3.</u></b> Clarify why Carbon Fraction is listed in the Monitoring Plan as parameter to be monitored.	<b>CR</b>	<input checked="" type="checkbox"/>



#### 4. Assessment of data and calculation of greenhouse gas emission reductions

VVM §207: GHG emission reductions achieved by/resulting from the proposed CDM project activity shall be calculated applying the selected methodology.

Means of verification

208. The DOE shall determine whether:

- (a) A complete set of data for the specified monitoring period is available. *If only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation prior to submitting request for issuance, if appropriate;*
- (b) Information provided in the monitoring report has been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis;
- (c) Calculations of baseline emissions, proposed CDM project activity emissions and leakage, as appropriate, have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document;
- (d) Any assumptions used in emission calculations have been justified;
- (e) Appropriate emission factors, IPCC default values and other reference values have been correctly applied.

CHECKLIST QUESTION	Ref	Verification Findings	Draft Concl.	Final Concl.
<b>E. Emission reductions / GHG removal calculation</b>				
<b>E.1. Baseline emissions / GHG removal calculation</b>				
Are baseline net GHG removals quantified correctly, and in line with the applied methodology and PD?	2, 3	Baseline net GHG removals are considered to be zero in line with the applied methodology	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Is the calculation tool in general clearly described and transparent (e.g. traceable non protected Excel file)?	2	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all formulae, intermediate steps and constants described transparently including correct units and in compliance with the methodology and the PDD?	2	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all ex-ante data listed and confirmed if they are in	2	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## PERIODIC VERIFICATION



Industrie Service

compliance with the PDD?				
Are all default parameter listed and in compliance with the PDD and the used methodology?	2	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all formulae included in the calculation tool in compliance with the PDD and methodology/tool?	2	n/a	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.2. Project emissions/removal calculation</b>				
Are project <u>actual net GHG removals by sinks</u> quantified correctly, and in line with the applied methodology and PD?	2, 3, 20	<p>Calculation are provided in Excel using the SMART software. Calculations are in line with the applied methodology and the PDD.</p> <p>As discussed in section A.3 the area per strata is subject to changes. Therefore the calculations of GHG removals needs to be updated.</p> <p><b><u>Corrective Action Request 6.</u></b></p> <p>The PP shall revise the calculations according to the revision the project strata.</p>	<b>CAR</b>	<input checked="" type="checkbox"/>
Is the required precision level met for net GHG removals?	2, 3, 20	<p>The calculations are conducted correct and in line with equations 5 to 9 of A/R Methodological Tool EB 60, Annex 13. The calculations show a precision level of 2.7% thus the required level is met.</p> <p>The number of degrees of freedom in the calculations used by the PP were not correct. (n-M, where n is total number of sample plots, and M is the total number of tree biomass estimation strata).</p> <p><b><u>Corrective Action Request 7.</u></b></p> <p>The PP shall ensure to calculate the precision level in a correct manner, in particular the correct degrees of freedom.</p>	<b>CAR</b>	<input checked="" type="checkbox"/>
Are project <u>emission sources</u> listed in line with the applied methodology and PDD?		The methodology applied in this CDM project activity does not foresee project emissions.		
Are these emission sources quantified correctly and in line with the applied methodology and PDD?		Not applicable, see above.		
Is the calculation tool in general clearly described and transparent (e.g. traceable non protected Excel file)?	2, 3, 20	The calculations are traceable and non-protected.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all formulae, intermediate steps and constants described transparently including correct?	2, 3, 20	All formulae, intermediate steps and constants are described transparently including correct units.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## PERIODIC VERIFICATION



Industrie Service

Are all ex-ante data listed and confirmed if they are in compliance with the PDD?	2, 3, 20	See section D1 and D2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all default parameter listed and in compliance with the PDD and the used methodology?	2, 3, 20	See section D1 and D2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Are all formulae included in the calculation tool in compliance with the PDD and methodology/tool?	2, 3, 20	All formulae of the calculations provided are in compliance with the methodology and the PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.3. Leakage calculation</b>				
Are sources of leakage listed in line with the applied methodology and PD?	2, 3	Leakage was assumed to be zero at validation. Provided explanation is in line with the applied methodology.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Is leakage quantified correctly, and in line with the applied methodology and PD?	2, 3	n/a		
<b>E.4. Emission reductions calculation / table</b>				
Are the net GHG emission reductions and removals quantified correctly and in line with the applied methodology and PD?	2, 3	GHG emissions reductions and removals are calculated correctly an in line with the applied methodology. Pay regard to the CARs 5. and 6.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.5. Comparison of actual emission reductions with estimates in the CDM-PDD</b>				
Does the monitoring report contain a comparison of the actual CERs claimed in the monitoring period with the estimate in the PDD?	2, 3	A table comparing actual and estimated CERs is provided in the MR.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>E.6. Remarks on difference from estimated value in the PDD</b>				
Is an explanation provided in case of any increase in the actual net anthropogenic GHG removal achieved during the current monitoring period?	2, 3	An explanation for the lower amount of actually sequestered CO <sub>2</sub> is provided. Main reasons are discussed. Main reason are to be found in the overestimation of the growth conditions of the parts of the project area due to water accumulation and the negative interaction of planted species with existing vegetation. The audit considers the explanation plausible.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Is any information (i.e. data and/or parameters) different from the registered CDM-PDD?	2, 3	Data and/or parameters presented in the MR are in line with the registered CDM-PDD.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>



Table 2: AR-CDM responses to CAR and CR

Clarifications and Corrective Action Requests	Ref. to Table 1	Summary of response	Validation conclusion
<p><b><u>Corrective Action Request 1.</u></b> The PP shall ensure that the total GHG removals by sink in the project area are calculated correctly, using the correct values for area per strata (see also CAR 2).</p>	A.1	<p><b><u>11/05/12PPs:</u></b> Calculations revised, please see attached. Emission reductions adjusted in relevant sections of the monitoring report</p> <p><b><u>12/06/12AuditTeam:</u></b> Amount of CO<sub>2</sub>e have been updated according the new calculations respectively the new project area.</p> <p style="text-align: right;"><b>Request closed</b></p>	<p style="text-align: center;">☑ <b>Request closed</b></p>
<p><b><u>Corrective Action Request 2.</u></b></p> <ul style="list-style-type: none"> <li>The PP shall provide the correct boundary of the project stratum.</li> <li>The PP shall ensure that the area of each strata is determined correctly.</li> </ul>	A.3	<p><b><u>11/05/12PPs:</u></b> Revised shape files are attached</p> <p><b><u>12/06/12AuditTeam:</u></b> Revised GIS shape files of the project have been provided. The audit team assessed the shape files and confirms that all overlaps have been erased.</p> <p style="text-align: right;"><b>Request closed</b></p>	<p style="text-align: center;">☑ <b>Request closed</b></p>
<p><b><u>Clarification Request 1.</u></b> The PP shall clarify the extent of the ploughed area</p>	A.4	<p><b><u>11/05/12PPs:</u></b> Shape files of the ploughed area are attached</p> <p>Calculations for fertilizer use are attached. As can be seen in the calculations, and as was expected in the PDD, emissions from the use of organic fertilizer are not significant compared to the emission reductions from the project. Since the methodology does not require accounting for these emissions, the information has not been reflected in the monitoring report</p> <p><b><u>12/06/12AuditTeam:</u></b> Calculations of fertilizer use have been provided. GIS shape files of the ploughed area for side preparation have been provided as requested. The provided shape files do not match the ploughed areas represented in Annex 4 of the PDD.</p>	<p style="text-align: center;">☑ <b>Request closed</b></p>





Clarifications and Corrective Action Requests	Ref. to Table 1	Summary of response	Validation conclusion
		<p>Comparing overall project area and ploughed areas (of the provided shape files) it turns out that about 22% of the project area was subject to soil preparation which is not in line with the applicability conditions of the applied methodology.</p> <p><b><u>25/06/12PPs:</u></b></p> <p>It turns out that the earlier file for Esperanza was incorrect, hence the differences with Annex 4 of the PDD. What was sent was a proposal of the areas to be mechanized. Annex 4 of the PDD contains the actually areas that were ploughed. The corrected shapefiles are attached. With this, the area ploughed is 68.51 ha which is 9.15% of the planted area (and therefore still within the requirements of the methodology)</p> <p><b><u>03/07/12AuditTeam:</u></b></p> <p>New GIS shape files of the ploughed area for side preparation have been provided. The shape files match with the ploughed areas provided in Annex 4 of the PDD. A total of 68.51 ha have been ploughed during side preparation which is 9.15% of the total project area which is in line with the applicability conditions of the applied methodology.</p> <p style="text-align: right;"><b>Request closed</b></p>	
<p><b><u>Clarification Request 2.</u></b></p> <p>The PP shall clarify what are the specific QA/QC procedures for the monitoring including allowed level of error of field measurements and respective correction measures obliged in case of not acceptable errors</p>	C	<p><b><u>11/05/12PPs:</u></b></p> <p>QA / QC procedure is attached</p> <p><b><u>12/06/12AuditTeam:</u></b></p> <p>QA/QC procedures have been provided. The procedures have been assessed by the audit team and found to be in compliance with good forestry practice.</p> <p style="text-align: right;"><b>Request closed</b></p>	<p style="text-align: center;"><input checked="" type="checkbox"/></p> <p><b>Request closed</b></p>
<p><b><u>Corrective Action Request 3.</u></b></p> <p>As per guidelines for Monitoring Report, the PP shall include a line diagram showing all relevant monitoring points.</p>	C	<p><b><u>11/05/12PPs:</u></b></p> <p>Line diagram with information flow attached and included in the MR as figure C-2.</p> <p><b><u>12/06/12AuditTeam:</u></b></p> <p>An line diagram showing all relevant monitoring points was included in the MR.</p>	<p style="text-align: center;"><input checked="" type="checkbox"/></p> <p><b>Request closed</b></p>



Clarifications and Corrective Action Requests	Ref. to Table 1	Summary of response	Validation conclusion
		<b>Request closed</b>	
<b><u>Corrective Action Request 4.</u></b> The PP shall identify the correct number of sample plots inside each stratum, considering changes in boundary of project strata (see CAR 2).	D	<b><u>11/05/12PPs:</u></b> New number of sample plots within the project area is 648. Table included in section C to show these numbers  <b><u>12/06/12AuditTeam:</u></b> Numbers of sample plots was updated in all relevant documents. <b>Request closed</b>	<input checked="" type="checkbox"/> <b>Request closed</b>
<b><u>Corrective Action Request 5.</u></b> As per CAR 2, the PP shall provide correct information on project area	D	<b><u>11/05/12PPs:</u></b> Figures in the MR have been revised to be consistent with the changes made in response to CAR 2  <b><u>12/06/12AuditTeam:</u></b> Figures in Section D have been revised according to CAR 2 <b>Request closed</b>	<input checked="" type="checkbox"/> <b>Request closed</b>
<b><u>Clarification Request 3.</u></b> Clarify why Carbon Fraction is listed in the Monitoring Plan as parameter to be monitored.	D	<b><u>11/05/12PPs:</u></b> Carbon fraction was included in both section D1 and section D2. This has been corrected and it has been removed from section D2.  <b><u>12/06/12AuditTeam:</u></b> Carbon Fraction was removed from section D2 which is in line with the applied methodology <b>Request closed</b>	<input checked="" type="checkbox"/> <b>Request closed</b>
<b><u>Corrective Action Request 6.</u></b> The PP shall revise the calculations according to the revision the project strata.	E	<b><u>11/05/12PPs:</u></b> Calculations revised (see attached)  <b><u>12/06/12AuditTeam:</u></b> Calculations have been revised according the new project area <b>Request closed</b>	<input checked="" type="checkbox"/> <b>Request closed</b>
<b><u>Corrective Action Request 7.</u></b>	E	<b><u>11/05/12PPs:</u></b>	<input checked="" type="checkbox"/>

## PERIODIC VERIFICATION



Industrie Service

Clarifications and Corrective Action Requests	Ref. to Table 1	Summary of response	Validation conclusion
The PP shall ensure to calculate the precision level in a correct manner, in particular the correct degrees of freedom.		<p>Variance calculation revised to reflect new calculations (see attached). Degrees of freedom adjusted to reflect new number of sample plots. New number is 635 (648 plots – 13 strata)</p> <p><b><u>12/06/12AuditTeam:</u></b> Degrees of freedom have been adjusted in line with the methodology applied.</p> <p><b>Request closed</b></p>	<b>Request closed</b>



## Annex 2

### Information Reference List

Ref. No.	Author/Editor/ Issuer	Title, Type of Document		Date	Additional Information	
1.	TÜV SÜD	Interviews		13 – 18 Mar 2012		
			<b>Name</b>			<b>Position, Organisation</b>
		1.	Stephanie Tam			Project Manager, World Bank
		2.	Victor Arce Ledezma			Manager PyDPrecious Woods
		3.	Jaime Mendoza			Head of Ecoservices, Precious Woods
2.	Precious Woods	Monitoring Report Version 1 Monitoring Report Version 3		15 Feb 2012 07 Sep 2012		
3.	Precious Woods	Project PDD		30 Nov 2010		
4.	Bureau Veritas	Validation Report Version 6		10 Feb 2011		
5.	Precious Woods	Plan General de Manejo (La Jabalina / La Pimienta / La Esperanza); checked onsite		13-18 Mar 2012		
6.	Precious Woods	Maps (Strata/Plots); checked onsite		13-18 Mar 2012		
7.	Precious Woods	Implementation Protocols; checked onsite		13-18 Mar 2012		
8.	Precious Woods	SOPs Fire prevention/protection				
9.	Precious Woods	Implementation record / digital record / accounting data base; checked onsite		13-18 Mar 2012		
10.	SGS	FSC report		17 May 2007		
11.	Precious Woods	Procedures for monitoring of boundary (Protocolo de medicion de areas de plantacion 2012)		09 Dez 2011		
12.	Precious Woods	Protocolo de medicion e instalacion de parcelas permanentes y disenio de mapas de crecimiento en plantaciones forestales 2012		09 Dez 2011		
13.	Precious Woods	Field sheets plot measurement; checked onsite		13. – 18. Mar 2012		

# PERIODIC VERIFICATION



Industrie Service

Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date	Additional Information
14.	Precious Woods	Data base entry field data; checked onsite	13. – 18. Mar 2012	
15.	INAFOR (Insituto national forestal)	Licenses for plantations and clearings in Nicaragua; checked onsite	13. – 18. Mar 2012	
16.	Precious Woods	GIS file boundary	9 May 2012	
17.	Precious Woods	GIS file sample plots	9 May 2012	
18.	Kanninen and Prerez (2003)	Allometric equation Teak Volume estimation	2003	
19.	Precious Woods	Carbon Calculation	9 May 2012	
20.	Precious Woods	Informe Final de Auditoria de Medicion de Parcelas Permanentes. Fincas “La Esperanza”, “La Pimienta”, “La Jabalina”, Nicaragua.	24 Feb 2012	
21.	IPCC	Guidelines for National Greenhouse Gas Inventories.	2006	Reference to the PDD/MR chapter or CDM requirement
22.	UNFCCC	Approved methodology AMS0001/Version 5	EB42/Sept 2008	
23.	Republica de Nicaragua	Escritura Pública – Compraventa de bien inmueble a plazo e hipoteca. Finca 11196; checked onsite	July 2003	Esperanza property
24.	Republica de Nicaragua	Escritura Pública– Compraventa de bien inmueble. Finca 27742. ; checked onsite	July 2003	Part of Jabalina property
25.	Republica de Nicaragua	Escritura Pública– Compraventa de bien inmueble. Finca 28829 and Finca 28883. ; checked onsite	July 2003	Part of Jabalina property
26.	Republica de Nicaragua	Escritura Pública Compraventa de bien inmueble. Finca 515. ; checked onsite	July 2003	Pimienta property
27.	Precious Woods	Precision calculation	9 May 2012	
28.	Precious Woods	PROCEDIMEINTO DE GARANTIA DE CALIDAD Y CONTROL DE CALIDAD EN EL PROCESO DE VERIFICACION DEL PROYECTO DE MDL (QA/QC Procedures)	9 May 2012	

## PERIODIC VERIFICATION



Industrie Service

Ref. No.	Author/Editor/ Issuer	Title, Type of Document	Date	Additional Information
29.	TÜV SÜD	Field Sheets of the audit team during the onsite visit, assessing project implementation, boundary and sample plot re-measuring	13-18 Mar 2012	
30.	IPCC	Good Practice Guidance for Land Use, Land Use Change and Forestry (LULUCF)	2003	



## **Annex 3**

### **Appointment Certificates**



Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Hetsch, Sebastian, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	23.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.11	23.03.11	23.03.11		

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	23.03.11				
Financial Expertise					
Date	23.03.11				

Qualification in technical areas	
Technical Area	Date
14.1_Forestry	23.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0006/02.

Date	Signature
23.03.12 Extension of Validity	<i>Thomas Kleiser</i>





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr. Hubertus Schmidtke, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	05.05.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		05.05.11	05.05.11			

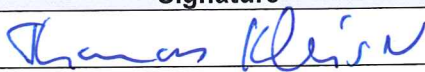
Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	05.05.11				
Financial Expertise					
Date	05.05.11				

Qualification in technical areas	
Technical Area	Date
14.1_Forestry	05.05.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0053/02.

Date	Signature
05.05.12 Extension of validity	



Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr. Opitz, Martin, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	20.05.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.07.12	20.08.12			20.05.11

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	20.05.11				
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
14.1_Forestry	20.05.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0059/04.

Date	Signature
20.05.2012 Extension of Validity	
23.07.2012	
20.08.2012	





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Luis Miguel Aparicio Alcázar, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	08.08.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	24.11.11					24.11.11

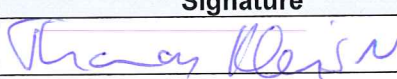
Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date		08.08.11			
Further countries					
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
14.1_Forestry	24.11.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0066/03.

Date	Signature
08.08.12 Extension of Validity	



Industrie Service

# CERTIFICATE OF APPOINTMENT

Ms Wagner, Karin, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	23.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		23.03.11	23.03.11	23.03.11	23.03.11	

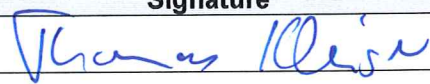
Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	23.03.11				
Financial Expertise					
Date	23.03.11				

Qualification in technical areas	
Technical Area	Date
1.2_Energy generation from renewable energy source	23.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0015/02.

Date	Signature
23.03.12 Extension of Validity	





Industrie Service

# CERTIFICATE OF APPOINTMENT

Mr Seitz, Martin, fulfills the requirements of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH to participate in audits.

Qualification applicable to						
Standard	CDM	JI	GS	VCS	VER	Other
Date	23.03.11					

Qualification as						
Status	Trainee	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date		01.03.12	01.03.12			23.03.11

Other qualification					
Country Expertise					
Region	1	2	3	4	5
Date	23.03.11				
Financial Expertise					
Date					

Qualification in technical areas	
Technical Area	Date
14.1_Forestry	23.03.11

This appointment is valid for 1 year from its date of signature below and is bound by internal requirements of the Management System of the Certification Body "climate and energy" of TÜV SÜD Industrie Service GmbH.

In case of loss of validity of this certificate as per result of an assessment according internal procedures or due to any other reason, it will be properly communicated to you.

Your Certificate has the internal reference No. CMS-Z-0020/03.

Date	Signature
23.03.2012 Extension of Validy	