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**Verification Assessment**  
Report for:

**EcoPlanet Bamboo Group LLC**  
in  
**El Rama and Kukra Hill, RAAS, Nicaragua**

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# ECOPLANET VCS VERIF 14

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<b>Work Carried Out By</b>	William Arreaga

<b>Summary:</b>	
<p>The verification process started on March 13, 2014 when the project proponent submitted the Monitoring Report 2014 and supporting documents such as the calculation spread sheets and the risk assessment of non-permanence. The field visit took place on March 17-21, 2014. The auditor visited the bamboo plantation projects, interviewed key stakeholders, staff and other related experts, and also reviewed the PD, and supporting documents. The purpose of the visit was to determine the conformance of the project with respect to the VCS Version 3 standard, the validated Monitoring Plan and the validated PD. The scope of the verification was to assess the conformance of EcoPlanet Bamboo Group LLC afforestation project in El Rama and Kukra Hill, RAAS, Nicaragua, against the Verified Carbon Standard.</p> <p>The auditor submitted to the project proponent a draft report on May 19<sup>th</sup>, 2014 in which no non-conformances were reported. Following the revision of the report by the project proponent, a draft final report was created where the Rainforest Alliance auditor has found that with reasonable level of assurance, the project is in conformance with the VCS v3 standard and verified that the project has resulted in net GHG benefits (removals) of 37,952 tCO<sub>2</sub>e; also, the buffer of 10% was approved based on the new risk assessment of non-permanence. VCU's to be issued after the buffer deduction are 34,156.</p>	
Project Proponent	EcoPlanet Bamboo Group LLC

Monitoring Period	June 1 <sup>st</sup> 2011 – February 1 <sup>st</sup> 2014
Crediting Period	June 1 <sup>st</sup> 2011 – May 31 <sup>st</sup> 2031 (20 years)
Project area (ha.)	1,235.6 hectares: Rio Siquia and Rio Kama farms (original validated area) 1,126 hectares: Rio Siquia ERF and San Jose ERF farms (new Project Activity Instances) 2,361.6 hectares: New total project area
Methodology and Version	Consolidated afforestation and reforestation baseline and monitoring methodology AR-ACM0001 “Afforestation and reforestation of degraded land” (Version 5.2).
Estimated VCUs	34,156. tCO <sub>2</sub> equivalent (according to the scope of the current monitoring event, the estimated VCUs come from the original validated area, only).
Estimated GHG reduction/removal	Verified from original project activity instances: 37,952  New adjusted long term average in 2014: 1,536,555.2 tCO <sub>2</sub> e
VCS Buffer Allocation (%)	3,795.2 tCO <sub>2</sub> equivalent
Additional Project Roles (Funder, Developer)	N/A

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## 1. INTRODUCTION

Rainforest Alliance certification and auditing services are managed and implemented within its RA-Cert Division. All related personnel responsible for audit design, evaluation, and certification/verification/validation decisions are under the purview of the RA-Cert Division, hereafter referred to as Rainforest Alliance or RA. Rainforest Alliance is an ANSI ISO 14065:2007 accredited validation and verification body; additionally, Rainforest Alliance is a member of the Climate, Community, and Biodiversity Alliance (CCBA) standards, and an approved verification body with a number of other forest carbon project standards. For a complete list of the services provided by the Rainforest Alliance, see [http://www.rainforest-alliance.org/climate.cfm?id=international\\_standards](http://www.rainforest-alliance.org/climate.cfm?id=international_standards).

Dispute resolution: If Rainforest Alliance clients encounter organizations or individuals having concerns or comments about Rainforest Alliance and our services, these parties are strongly encouraged to contact the local Rainforest Alliance regional office or the RA-Cert Division headquarters directly. Formal complaints or concerns should be sent in writing.

### 1.1 Objective

The purpose of this report is to document the conformance of EcoPlanet Bamboo Central America project with the requirements of the Verified Carbon Standard (VCS). The project was developed by EcoPlanet Bamboo Group LLC, hereafter referred to as “Project Proponent”. The report presents the findings of qualified Rainforest Alliance auditors who have evaluated the Project Proponent’s systems and performance against the applicable standard(s).

### 1.2 Scope and Criteria

**Scope:** The scope of the audit is to assess the conformance of EcoPlanet Bamboo Central America Afforestation project in El Rama and Kukra Hill, RAAS, Nicaragua against the Verified Carbon Standard. The objectives of this audit included an assessment of the project’s conformance with the standard criteria. In addition, the audit assessed the project with respect to the baseline scenarios presented in the project design document. The project covers an area of 1,235 hectares to be verified for the initial project activity instances, and 1,126 hectares to be validated as new project activity instances through this verification of the grouped project. The land is privately owned. The information supporting the GHG assertion is historical in nature. The project has a lifetime of 20 years, and has calculated a GHG reduction and/or removal of 37,952tCO<sub>2</sub>e over the course of the monitoring period with 34,156 VCU to be issued.

**Standard criteria:** Criteria from the following documents were used to assess this project:

- Verified Carbon Standard Program Guide Version 3.5;
- Verified Carbon Standard Version 3.4;
- Verified Carbon Standard Agriculture, Forestry and Other Land Use (AFOLU) Requirements Version 3.4;
- Verified Carbon Standard AFOLU Non-Permanence Risk Tool Version 3.2;
- Verified Carbon Standard Program Updates (please see VCS website for the latest updates); and as applicable,
- The VCS approved methodology/modules used by the project.

**Materiality:** All GHG sinks, sources and/or reservoirs (SSRs) and GHG emissions equal to or greater than 5% of the total GHG assertion for VCS projects (<300,000tCO<sub>2</sub>e/year). All GHG sinks, sources and/or reservoirs (SSRs) and GHG emissions equal to or greater than 1% of the total GHG assertion for VCS large projects (>300,000tCO<sub>2</sub>e/year)

Materiality threshold: 5%  or 1%

### 1.3 Level of assurance

The assessment was conducted to provide a reasonable level of assurance of conformance against the defined audit criteria and materiality thresholds within the audit scope. Based on the audit findings, a positive evaluation statement reasonably assures that the project GHG assertion is materially correct and is a fair representation of the GHG data and information.

### 1.4 Summary Project Description

From the PD Version IV:

*“The proposed project activity is an AFOLU ARR, specifically a reforestation project, utilizing native bamboo, Guadua aculeata, for the regeneration of degraded pasture lands on the Atlantic coast of Nicaragua. Guadua aculeata has the potential to not only address global climate change through its fast sequestration rate of atmospheric carbon, but if combined with value added*

*processing has the potential to address the global trend of deforestation through the provision of a sustainable alternative to traditional timber sources.*

*The reforestation project activity has the following climate objectives:*

- Bamboo's fast growth enables it to sequester significant amounts of carbon dioxide (CO<sub>2</sub>) in a relatively short time period. Grown on land that has inherently low and decreasing biomass, a managed bamboo plantation can represent a significant sink for long term storage of this carbon.*
- The ecology of bamboo as a grass means that the harvesting of selective culms does not kill the plant but rather stimulates further growth and therefore further sequestration, not only above ground but below ground in the intricate rhizome system, and through increased soil carbon levels. Thus some of the permanence issues associated with traditional sequestration projects are overcome, and the climatic benefits greater.*
- 20 -25% of global greenhouse gas emissions currently come from land use change -in particular deforestation and degradation. EcoPlanet Bamboo is growing Guadua aculeata for high end markets such as flooring, construction and structural products. Such markets traditionally rely on species harvested from natural forests, therefore contributing to such deforestation, as well as the continued trend towards endangered status for many of these species. EcoPlanet Bamboo's plantation development of timber bamboo will offer a sustainable source of timber for these markets. The proposed project activity will therefore not only have high sequestration benefits, but will indirectly reduce greenhouse gas emissions from deforestation and degradation of natural forests.*

*The proposed project activity falls within the Afforestation, Reforestation, Revegetation (ARR) category within the AFOLU section of the VCS. In particular, it is a human assisted reforestation activity, carried out through direct planting on land that was cleared of primary forest ecosystem more than 10 years prior to the project start date. The proposed project activity includes selective harvesting within its management plan. The project is a Grouped Project, with an additional area of approximately 1,500ha with unique boundaries to be added between 2012 and 2015."*

*After the validation, the project had added two new project instances representing the completed addition of instances to the grouped project.*

## 2. VALIDATION PROCESS, FINDINGS AND CONCLUSION

Note: If at the time of verification, the audit team has also undertaken a gap validation of the project, or has validated a new methodology and/or project description deviation, and/or inclusion of a new project activity instance in a grouped project, the relevant validation sections below should be completed in detail. In absence of these activities, the validated PDD must still be reviewed in detail to ensure validated project activities have continued without significant changes. Any non-conformances or observations identified during the field audit are noted in this section, and specific NCR and OBS tables are included in section 5 of this report for each identified non-conformance and observations. All findings related to audit team review of additional evidence submitted by the Project Proponent following the issuance of the Draft Audit Report by Rainforest Alliance, is included within section 5 of this report.

### 2.1 Validation Process

#### 2.1.1 Audit Team

Overview of roles and responsibilities:

Auditor(s)	Responsibilities							
	Lead	Desk Review	On-site visit	Climate Specialist	Biodiversity Specialist	Social Specialist	Report	Senior Internal Review
Galia Selaya	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Willilam Arreaga	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adolfo Lemus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Auditor qualifications:

Auditor(s)	Qualifications
William Arreaga, Rainforest Alliance Verification Services Coordinator Mesoamerica  <i>Lead auditor</i>	Guatemalan forester from San Carlos de Guatemala University, and M.Sc. from CATIE, Turrialba, Costa Rica. He is also involved in a MBA program on Financial Administration in Guatemala. William serves as a lead auditor for FSC Forest Management, and Chain-of-Custody. He has developed two biomass allometric equations in natural forests and plantations in Guatemala. Moreover, he had received formal training in Environmental Services, including Carbon issues at Winrock International; as well as he had developed a great experience with Carbon issues by his participation in the field for CCB validations in Mexico, Nicaragua, Costa Rica, Panama and Ecuador; VCS validations in Guatemala, Honduras, Panama, Mexico, and Uruguay; Carbon Fix verifications in Panama; and VCS verifications in Guatemala. He had received formal training as carbon validator in Vermont, and as lead auditor against ISO 14001 in Guatemala. Nowadays, he is the Verification Services Coordinator in Rainforest Alliance Mesoamerica Region.
Galia Selaya, <i>Audit team member</i>  <i>Contact info:</i> <a href="mailto:gselaya@yahoo.com">gselaya@yahoo.com</a>	Interdisciplinary approach for environmental management and climate change adaptation; Application of best management practices and eco-efficiency in forest and agroforestry sectors; Monitoring and verification of carbon stocks and forest environmental services conservation; Environmental perturbations and land use changes impacts on forest succession pathways and biodiversity; Scaling up species specific biomass allocation and carbon dynamics to canopy structure and species assembly in response to environmental changes.

#### 2.1.2 Description of the Audit Process

Location/Facility	Date(s)	Length of Audit	Auditor(s)
Administrative office in El Rama, RAAS	August 27 - 29, 2012	8 hours	G.Selaya, W.Arreaga



Rio Siquia Farm, Comarca Calderón and Esperanza, RAAS	August 27, 2012	8 hours	G.Selaya, W.Arreaga
Rio Kama Farm, Comarca La Fonseca, RAAS	August 28, 2012	One full day	G.Selaya, W.Arreaga
Stakeholder consultation: Bluefields and El Rama	August 29, 2012	One full day	G.Selaya, W.Arreaga
Stakeholder consultation: El Rama and Chontales	August 30, 2012	One full day	G.Selaya, W.Arreaga
Stakeholder consultation in Managua	August 31, 2012	4 hours	G.Selaya, W.Arreaga
Administrative office in Managua	August 31, 2012	4 hours	G.Selaya, W.Arreaga

### 2.1.3 Review of Documents

The following documents were viewed as a part of the field audit:

Ref	Title, Author(s), Version, Date	Electronic Filename
1	EPB Group LLC, Forest management plan Rio Siquia, 2012	EPB Rio Siquia Management Plan 05-16-12.pdf
2	EPB Group LLC, Forest management plan Rio Kama, 2012	EPB Rio Kama Management Plan 05-16-12.pdf
3	EPB Group LLC, VCS additionality report, 2012	VCS Additionality Report EPB CA.doc
4	EPB Group LLC, Carbon calculations, 2012	EPB CA carbon calculations – spreadsheets.xls
5	EPB Group LLC, Project Document V1, 2012	EPB CA VCS PD V1.doc
6	EPB Group LLC, Risk report, 2012	VCS Non-Permanence Risk Report EPB CA.pdf
7	EPB Group LLC, Forest management plan Kama, 2012	PlandemanejoKAMA.doc
8	EPB Group LLC, Forest management plan Siquia, 2012	PlandeManejoSiquiaFINAL.doc
9	EPB Group LLC, Informe interpretacion de análisis de suelos y foliares finca Río Siquia, 2012	Report Rio Siquia.pdf
10	EPB Group LLC, Informe interpretacion de análisis de suelos y foliares finca Río Kama, 2012	Report Rio Kama.pdf
11	EPB Group LLC, KML polygons, 2012	Rio Siquia ex post project strata.kml
12	EPB Group LLC, KML polygons, 2012	Rio Siquia ex ante project strata.kml
13	EPB Group LLC, KML polygons, 2012	Rio Siquia 2011 land cover.kml
14	EPB Group LLC, KML polygons, 2012	Rio Kama ex post project strata.kml
15	EPB Group LLC, KML polygons, 2012	Rio Kama ex ante project strata.kml
16	EPB Group LLC, KML polygons, 2012	Rio Kama 2011 land cover.kml
17	EPB Group LLC, KML polygons, 2012	Project Boundary Locations.kml
18	EPB Group LLC, KML polygons, 2012	Project Area Boundary.kml
19	EPB Group LLC, Financial model, 2012	VCS Plantation Financial Model EPB CA.xls
20	EPB Group LLC, Project Document (1), 2012	EPB CA VCS PD (1).pdf
21	EPB Group LLC, Carbon calculations, 2012	CarbonCalculationtoVCS.xls
22	EPB Group LLC, Project Document V2, 2012	EPB CA VCS PD V2.pdf

### 2.1.4 Interviews

The following is a list of the people interviewed as part of the audit. The interviewees included those people directly, and in some cases indirectly, involved and/or affected by the project activities.

Audit Date	Name	Title
27-31/08/12	John Vogel	Principal Manager EcoPlanet Bamboo Nicaragua S.A.
27-31/08/12	Bernard Vogel	Vicepresident
27-31/08/12	Camille Rebelo	Partner, Co-Founder
27-31/08/12	Troy Wiseman	CEO, Co-Founder
27-31/08/12	Chase Wiseman	Vicepresident

27-31/08/12	Juan Carlos Camargo	Consultant, bamboo expert
02/11/12	David Cox	Partner, Financial responsible
27/08/12	Ricardo Fernández Martínez	Former owner, Comunidad La Esperanza
27/08/12	Dr. José Andrés Fernández	Former owner, Comunidad El Calderón
27/08/12	Lester Iván Ortega Sequeira	Oficina de Educación del Sector Río Kama Comunidad Carlos Fonseca
28/08/12	Carlos Agustín Miranda Larios	Major, Comunidad Kukra Hill
28/08/12	Jorge Palacios Campos	Regional office INTA-RAAS, Comunidad Kukra Hill
28/08/12	Antonio Suárez	Union President Nicabambú, Comunidad el Fonseca
28/08/12	Joanna Schwartz Saúl Reyes	Environmental división, MARENA Bluefields
28/08/12	Javier Balmaceda	Planning director, Major office, El Rama
28/08/12	Alejandro Balmaceda	Taxes office, Major office, El Rama
30/08/12	Yader Guzmán	Director MAGFOR
28/08/12	Pedro Jose Guidel	Priest of Fonseca Community
28/08/12	Cecilio Lazo	Priest at Samuel Lago community
28/08/12	Máximo López	Priest at Comarca Pichinga
27-31/08/12	Norma Elizabeth Morataya Vázquez	Legal department
27-31/08/12	Walter Antonio Manzanares Huembes	Accountant associate
27/08/12	Maritza Tenorio	Field Supervisor at Siquia Farm
27/08/12	Yasiri Duarte Zenteno	Storage facilities responsible
27/08/12	Nora Ester Gonzales	Field Supervisor Zone 1
27/08/12	Lenin Arquim Mayorga	Support technician zone 1
27/08/12	María Jose Gonzales	Field Supervisor Zone 3
27/08/12	Pedro Odel Mendoza	Chofer
27/08/12	María Luisa Miranda	Chief at Siquia Farm
27/08/12	Andres Santana	Nurse
28/08/12	Pedro Jose Guidel	Priest of Fonseca community
28/08/12	Cecilio Lazo	Priest at Samuel Lago community
28/08/12	Máximo López	Priest Comarca Pichinga
28/08/12	Felix Rocha Garcia	Field supervisor Zone 1 Kama Farm
28/08/12	Julio Mendoza Lazo	Field supervisor Zone 2
28/08/12	José Lopez	Support field
28/08/12	Elder Andres Pérez	Field supervisor Zone 3
28/08/12	Erick Joaquín Orozco	Fire prevention responsible
28/08/12	Antonio Suárez	Union Nicabambu President
29/08/12	Olga Smith Luis Gaitán Lorenzo Quinto	CRASS representative environment and indigenous groups
29/08/12	Joanna Schwartz Saúl Reyes	Environmental Division MARENA Bluefields
30/08/12	María Nelis Mora	INAFOR, El Rama
30/08/12	Alvaro Lopez Vargas	Social Security Director, El Rama
30/08/12	Jarvin Brenez Jimenez	Social Security Inspector, El Rama
30/08/12	Zelmira Guamán	Ministerio de Trabajo, Chontales
31/08/12	Bismark Morales	Climate Change Office, Managua
31/08/12	Edilberto Duarte	Biodiversity Division Officer, Managua
31/08/12	Francisco bolaños	Ministerio de Trabajo, Managua
31/08/12	Lucia Flores	Ministerio de Trabajo, Managua

## 2.2 Validation Findings

**2.2.1 Gap Validation**

Identify, discuss and justify conclusions regarding the additional project description (and any supporting documents) produced in accordance with the VCS rules on participation under approved GHG programs.

Findings from Verification Field Audit			
The project has not added additional project description in the PDD nor in supporting documents. Therefore the validated PD is still accurate and reflects the current situation. A gap validation is not necessary at this point on time.			
Conformance	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
NCR/OBS	None		

**2.2.2 Methodology Deviations**

Identify, discuss and justify conclusions regarding any methodology deviations applied to the project. Note this includes any applicable deviations from the methodology as well as deviations in monitoring report from the validated monitoring plan.

Findings from Verification Field Audit			
In the updated version of the monitoring report, the proponent does not claim any methodology deviation. The auditor did not notice a methodology deviation either. Being so, the proponent used the methodology “AR-ACM0001 Afforestation and Reforestation on degraded land (version 5.2.0) during the monitoring event.			
Conformance	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
NCR/OBS	None		

**2.2.3 Project Description Deviations**

Identify, discuss and justify conclusions regarding any project description deviations.

Findings from Verification Field Audit			
In the updated version of the monitoring report, the proponent does not claim any project description deviation. The auditor did not notice a project description deviation either.			
Conformance	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
NCR/OBS	None		

**2.2.4 New Project Activity Instances**

For grouped projects, identify, discuss and justify conclusions regarding the following:

- Number of new project activity instances included in the project at this monitoring/verification event.
- Quality and completeness of evidence, data and documentation of new project activity instances
- Eligibility of new project activity instances
- Sampling process for validation of new project activity instances

Findings from Verification Field Audit			
As it was planned from the design of the project step, by the first (current) verification of the project, the proponent expected to add more project activities instances. These new instances are validated through the current verification process. The new instances include the Rio Siquia ERF farm and the San Jose ERF farm. Both farms were visited during the verification. The proponent submitted evidence of conformance for both new project instances with the eligibility criteria predefined in the PD.			
The Rio Siquia ERF farm is actually an extension of the Rio Siquia farm (already validated). A total of 406.65 ha are recently reforested (from a total of 455.61 ha) in this new project activity instance. The San Jose ERF farm is located within the designated geographic area and strategically located to facilitate the commercialization of finished products; this project activity instance has 739.2 ha of recently planted area.. The auditor received a good impression of the health and density of the plantations in both farms during the field visit, indicating implementation of the project activity in the new instances. The proponent is not seeking verification of ex-post emissions reductions for these new instances at this time. Consultation with employees and the national forest service representative also confirmed the observations in the field.			
The following is the set of the general requirements established in the validated PD:			
<ul style="list-style-type: none"> <li>• Within proximity to the initial project instances (as defined by the map in Figure 1 of the validated PD)</li> <li>• Accessibility by river and road</li> <li>• Within proximity to Port Arlen Siu which represents the shipping route to the United States for harvested bamboo product</li> <li>• Relatively close to infrastructure (electricity/roads) to reduce capital costs</li> <li>• Correct climatic conditions (2,500 - 4,000mm rainfall/year)</li> </ul>			

- Large quantities of properties with legal titles/documents
- Areas of extreme poverty and communities most vulnerable to the impacts of climate change, representing considerable potential for social impact
- Areas of land that underwent deforestation more than 20 years ago and currently represent degraded land with low inherent biomass levels
- Current land use is that of the baseline scenario defined within this document

The first seven criteria are defined based on the company commercial strategy while the others are referring to more technical aspects of the plantation project. The deforestation pattern was demonstrated by using remote sensing and GIS information. The degradation of the land was demonstrated by sampling the soil to determine the level of compaction.

The set of eligibility criteria are also explained in the Project Description and by this verification the proponent has shown compliance through the following analysis:

1. Location of new project instances. Both new project activity instances are located in the designated geographic area planned in the PD, which includes the area between the previously validated farms. The auditor checked coordinates to make sure the location. The accuracy of the project area is demonstrated through maps and also the internal stratification (eligible –reforested- and non-eligible area).
2. Applicability conditions. The methodology applicability conditions are met by both new project instances: the land is degraded; the project activity does not occur on organic soils or wetlands;
3. Evidence of historical deforestation. A series of maps of every new project instance is shown in the monitoring period. Here, it is easy to see how the natural and secondary forest has dramatically experienced deforestation during the last 10 or more years (period of analysis 1978, 1992, 1999, and 2010). The auditor verified this onsite through direct observations and consultation with local stakeholders and neighbours. The area of the new project instances specifically meets the requirements around historical deforestation.
4. Evidence of degraded land. After using the appropriate tool (Tool for evidence of degraded and degrading land), the proponent has demonstrated the land of the new project instances is already degraded. Documented evidence was gathered and analysed by the proponent, but also compared with samplings (Eijkelkamp penetrometer). Soil degradation and chemical deterioration were used as indicators of degradation of the soils. The auditor reviewed the data of compaction and also confirmed potential triggers of it with stakeholders. The overgrazing in the area appears to be the most reasonable cause of compaction and further deterioration. Visit to the site of the new instances visually confirmed degradation.
5. Application of technology. The auditor could establish that the new plantation projects are managed under the same system and techniques, applied by trained people. FSC principles were taken into consideration as well.
6. Baseline approach. The “pre-project land use of continued deforestation and degradation due to low intensity cattle grazing and subsistence farming” approach was considered applicable, same as the previous instances. It was clear to the auditor that in the absence of the Ecoplanet Bamboo project, both areas would have continued to undergo loss of tree carbon stocks leading to the continuation of land degradation.
7. Barriers to implementation. The auditor confirmed that the new project instances face the same barriers of implementation. The analysis was done, indirectly, during the design of the project in general. As such, some of the barriers examples are: investment barriers, institutional barriers (for a private enterprise in Nicaragua), barriers to potential legal framework changes; lack of enforcement of forest; technological barriers; and barriers related to markets. As the new project activity instances are directly adjacent to, or very close to the original instances, and have similar ownership, levels of degradation, baseline land use, etc. the barriers to implementation are identical and the additionality is clear. Existence of barriers was evaluated through interviews and observations in the field.

In addition to the demonstration of conformance of the new instances to the general requirements of the methodology and the eligibility criteria defined in the PD for new instances, the proponent has also submitted further calculations as evidence during the verification. The documents were reviewed to confirm that both new instances can officially be included in the scope of the grouped project. No material errors were identified in the ex ante estimations of emissions reductions of the new instances in the PD or supporting documentation.

Finally, as per the PD describes, the proponent does not intend to add more new instances in the upcoming verification invents. However, during the current verification a consultation was raised to potentially acquire more eligible land and add it to the grouped project as new instances. If this is the case, the future Verification Body should require the proponent to update the PD (project monitoring deviation).

As a result of the inclusion of the new project activity instances, the new scope of the certification is as follows:

Rio Siquia and Rio Kama farms (original validated area): 1,235.6 hectares

Rio Siquia ERF and San Jose ERF farms (new Project Activity Instances)

New total project area: 2,361.6 hectares			
New adjusted long term average following 2014 verification audit: 1,536,555.2 tCO2e			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

### 2.3 Validation Conclusion

Clearly state whether the project conforms with the validation criteria for projects, as set out in VCS Version 3, and include any qualifications or limitations. This section should include a brief description of any changes from the validated PDD, and a review of project continued conformance with the validated PDD.

Findings from Verification Field Audit			
The PD has not changed since the validation visit. During the verification visit, the auditor observed no significant changes occurred from the validated PD.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

## 3. VERIFICATION PROCESS

### 3.1 Method and Criteria

Describe the method and criteria, including the sampling plan, used for undertaking the verification.

### 3.2 Audit Team

Overview of roles and responsibilities:

Auditor(s)	Responsibilities							
	Lead	Desk Review	On-site visit	Climate Specialist	Biodiversity Specialist	Social Specialist	Report	Senior Internal Review
William Arreaga	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Campbell Moore	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Auditor qualifications:

Auditor(s)	Qualifications
William Arreaga, Senior Associate, Verification Services RA-Cert Mesoamerica  <i>Lead auditor</i>  Contact info: <a href="mailto:warreaga@ra.org">warreaga@ra.org</a>	Guatemalan; Ing. Agr. RNR from San Carlos de Guatemala University, and M.Sc. from CATIE, Costa Rica. He is also involved in a MBA program on Financial Administration in Guatemala. William serves as lead auditor for FSC Forest Management, Chain-of-Custody, and legality services in Mesoamerica. His experience on carbon projects includes: the developing of two biomass allometric equations in Guatemala (natural forest and teak plantation); participation as a fellow at Winrock International (Norman Borlaug fellowship program) and as lead auditor in more than twenty validations and verifications (VCS, CFS, CCBA) in USA, México, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Ecuador and Uruguay. He had received formal training as carbon validator in Vermont, and as lead auditor against ISO 14001 in Guatemala. As Senior Associate of Verification Services (RA-Cert staff), he has been the point of contact of the carbon services in Mesoamerica Region Office, but also provides technical assistance to South America Region Office.
Campbell Moore	Campbell is a forester and carbon expert with professional experience in Africa and Southeast Asia. In his role as Carbon Technical Specialist with Rainforest Alliance he conducts audits against six forest carbon standards, supervises methodology assessments, manages RA accreditation, and acts as technical expert on carbon for RA-Cert globally. Campbell has participated in more than 25 AFOLU carbon audits. Previous professional experience includes consulting work for GIZ Philippines performing carbon stock assessments of different forest types including agroforestry and plantation systems, as well as work centered on

	<p>reforestation in Sri Lanka for the Environmental Leadership and Training Initiative, and working with Climate Focus on LULUCF policy issues. Campbell received his Master of Forestry from the Yale University School of Forestry and Environmental Studies. Prior to his time at Yale, Campbell worked in The Gambia for over two years as a Peace Corps Volunteer designing and implementing a wide variety of forestry, agroforestry, and agricultural projects. In addition to his Master of Forestry degree, he holds a B.A. in Environmental Studies from St. Mary's College. Campbell is fluent in Pulaar and Wolof and has experience with Spanish.</p>
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### 3.3 Review of Documents

The following documents were viewed as a part of the field audit:

Ref	Title, Author(s), Version, Date	Electronic Filename
1	File Data collection forms: includes CrecimientoFormato.pdf, CarbonForm.pdf, BiomasaFormato.pdf, BaselineSampling.pdf	Data Collection forms file
2	File Data Spreadsheets: includes FieldDataYougand Old.xls, CulmsYoung.xls, CulmsOld.xls, CarbonDataMonitoring.xls, CarbonForm audit (1).xls, Carbon Calculation ERF Farms.xls, BaseLine.xls	Data Spreadsheet file
3	File Sample Plot Maps: includes Siquia_Location_SamplingPlots_Strata.pdf, Kama_Location_SamplingPlots_Strata.pdf, ERFSiquia_Location_SamplingPlots_Strata.pdf, ERFSanJose_Location_SamplingPlots_Strata	Sample plot maps file
4	EPB CA Monitoring Report v1. EPB version 1.	EPB CA Monitoring Report v1.doc
5	EPB CA Monitoring Report v2. EPB version 2.	EPB CA Monitoring Report v2.doc
	EPB CA Monitoring Report v3. EPB version 3, 23 May 2014	EPB CA Monitoring Report v3.doc
6	CarbonDataMonitoring spreadsheet. EPB.	CarbonDataMonitoring.xls
7	VCS Non-Permanence Risk Report EPB CA V2 2014. EPB version 2.	VCS Non-Permanence Risk Report EPB CA V2 2014.pdf
	VCS Non-Permanence Risk Report EPB CA V3 2014. EPB version 3. July 17 <sup>th</sup> , 2014 **New version of this report issued as a result of an error discovered during the registration process in which the proponent had used the wrong version of the risk report.	VCS Non-Permanence Risk Report EPB CA V3 2014.pdf
8	EPB CA PLantation Model Update 2-17-14. EPB (sensitive information)	EPB CA PLantation Model Update 2-17-14.xls
9	Simple Breakdown - VCS V.2. EPB version 2.	Simple Breakdown - VCS V.2.xls

### 3.4 Interviews

The following is a list of the people interviewed as part of the audit. The interviewees included those people directly, and in some cases indirectly, involved and/or affected by the project activities.

Audit Date	Name	Title
18-21 march	John Vogel	President
18-21 march	Bernardt Vogel	Vicepresident
18-21 march	Juan Carlos Camargo	Director of Research and Monitoring; bamboo expert, monitoring crew coordinator
18-21 march	Sergio Sánchez	Forestry Manager
18 march	Luis Gómez	San José ERF farm former owner
18 march	José Andrés Fernández	Siquia ERF farm former owner
19 march	Felix Rocha, Ariel Dávila, Julio Mendoza	Rio Kama farm monitoring crew
20 march	Nery Espinosa, Mario Rodríguez, Elvin García, Luis Ruíz, Ever Toruño, Maria Luisa Lira	Rio Siquia farm monitoring crew
20 march	Bayardo Galagarza	Rio Siquia farm neighbor
20 march	Giovani Sambrano	Rio Siquia farm neighbor, community leader

20 march	Santos Sequeira, David Avendaño, Officer Omar Sánchez, Marisa Martínez, Polo Espinoza, Marta Brenes, Francisco Arteaga	Rio Siquia farm neighbors in a group meeting
20 march	Elder Pérez, Pedro Odel, Zeneida Alvarez, Nery Espinosa, Elvin García, Mario Gonzáles, Wilder Martínez, Tania Toruño, Abigail Sandino, Javier Rivera	Rio Siquia farm, EPB employees in a group meeting
21 march	Lester Canales	Forestry Inspector, INAFOR El Rama

### 3.5 Description of the Audit Process and Site Inspections

Location/Facility	Date(s)	Length of Audit	Auditor(s)
EcoPlanet Bamboo administrative office	17 march 2014	6 hours	William Arreaga
Rio Kama farm	18 march 2014	10 hours	William Arreaga
Rio Siquia farm Rio Siquia ERF farm	19 march 2014	10 hours	William Arreaga
San José ERF farm	20 march 2014	4 hours	William Arreaga
EcoPlanet Bamboo central office	21 march 2014	4 hours	William Arreaga

### 3.6 Resolution of Material Discrepancy

Based on the desk review of the Monitoring Report, validated PD, Non-Permanence Risk Report, supporting documentation, and the observations made during the field audit, the auditor did not identify material errors or discrepancies during the verification. As a result, no process of resolution was necessary.

## 4. VERIFICATION FINDINGS

### 4.1 Project Implementation Status

Identify, discuss and justify conclusions with respect to the following:

- Implementation status of the project activity(s), including any material discrepancies between the project and the project description.
- Implementation status of the monitoring plan and the completeness of monitoring, including any material discrepancies between the project and the project description.
- Any remaining issues from previous validation or verification.

#### 4.1.1 Project title, Purposes and Objectives

Identify any changes in the project title, purpose or objectives since the project validation or the last verification.

Findings from Verification Field Audit			
<p>The EcoPlanet Bamboo Central America project has not been modified in its purpose and objectives. The project title remains the same. The only significant change has been registered in the scope of the project by adding two new farms to the VCS grouped project, as additional project activity instances. These two farms are getting ready to be included in the FSC certification as well. Moreover, the San Jose ERF farm was acquired following the commercial strategy of the company which is to have a close access to the international harbour so the company can export the finished products directly to the US. The plantation project is also managed in conformance to the CCBA standard, validation achieved by 2012.</p> <p>In general, the project activity has been implemented according to the internal SOP; all the farms have completed the reforestation in the eligible area and the monitoring has taken place accordingly. The monitoring report mentions the following two practices implemented since validation: weeding and fertilisation and amendments. Training events have been developed in all farms regarding maintenance, management and monitoring.</p> <p>Additionally, the monitoring was implemented as described in the Monitoring Plan in the validated PD.</p>			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

#### 4.1.2 Stratification of Baseline and Project Areas

Identify any changes in baseline or project area stratification. Review application of stratification in GHG calculations.

Findings from Verification Field Audit			
According to the validated PDD, it is assumed that changes in carbon stock of above-ground and below-ground biomass of non-tree vegetation, and also in litter and dead wood may be conservatively assumed to be zero for all strata in the baseline scenario. This is an approved approach in the relevant CDM methodology, provided that the proponent does not incorporate pre-project trees in carbon stock monitoring, which the proponent has demonstrated. Therefore, stratification of the baseline is not necessary. The project area was divided into 5 strata based on a combination among pre-project tree density and planted bamboo spacing as follows:			
	<b>Strata</b>	<b>Trees (ha<sup>-1</sup>)</b>	<b>Tree density</b>
	1	0	Without trees
	2	1 -50	Low
	3		
	4	> 50	Moderate
	5		
The monitoring event was done without changes regarding the number of strata. No subdivisions or mergers of strata occurred. The same stratification system is implemented in the new project instances. The auditor reviewed the carbon calculations and confirmed the stratification system was taken into account.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.1.3 Ownership/Proof of Title/Right of Use**

Identify any changes in project area land ownership/demonstration of right of use as identified in the validated PDD.

Findings from Verification Field Audit			
The land ownership and carbon right of use has experienced no changes, the PP is the sole owner of the land and has the right of use of the GHG benefits generated in the plantation project. The auditor confirmed this through interviews with the PP and employees and this was investigated in depth during the previous validation audit.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.1.4 Double counting and whether the project participated in another emission trading programme**

Identify if the project has participated in other emission trading programmes.

Findings from Verification Field Audit			
The auditor confirmed that the EcoPlanet Bamboo plantation project is not participating in another emission trading programme. Other common voluntary and regulatory carbon standards were consultant via internet research to confirm that the project is not registered with another program, including CDM, CarbonFix Standard, Plan Vivo. This link was consulted for CDM <a href="http://cdm.unfccc.int/Projects/projsearch.html">http://cdm.unfccc.int/Projects/projsearch.html</a>			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.1.5 Conformance with PDD Monitoring Protocol**

Evaluate project activity conformance with the validated PDD Monitoring Plan. Review each step outlined within the monitoring plan in the findings box below.

Findings from Verification Field Audit	
On PD Chapter 3 the PP addressed the Monitoring through three complementary sections: 1.1. Data and parameters available at validation * 1.2. Data and parameters monitored 1.3. Monitoring plan  The main findings related to these sections are explained below. * These names correspond to the VCS monitoring report template, while table 3 of the methodology names these sections differently: A. Data and parameters to be obtained from existing sources. B. Data and parameters to be obtained from measurement.	
PDD Required Monitoring Procedures	Findings
Data and parameters available at validation	The proponent submitted all the information during the validation event. Some of the data and parameters during the validation were taken from existing sources. The monitoring report includes the following variables: carbon stock in litter and soil organic carbon.



<p>Data and parameters monitored</p>	<p>All the applicable data and parameters were actually monitored by the proponent during the monitoring event.</p> <p>The auditor witnessed the re measurement of 12 permanent sample plots (which represents around 25% of the total plots). The monitoring SOP was fully implemented including locating the plot using a GPS unit, identifying and measuring the basal diameter of culms; counting the number of culms per clump.</p> <p>The auditor did not notice systematic errors while measuring the basal area and other variables in the field. It was evident that the crew members are Well-trained and conform to the SOPs.</p> <p>The monitoring crew leader has outstanding experience in managing and monitoring growth and development of the native bamboo. As part of his duties with the company, he registered the measurements in the fields and the analysis of the variables was performed by him.</p> <p>The auditor also witnessed the data registry in all the plots and observed that the crew implemented specific QA/QC procedures.</p> <p>Finally the auditor compared measurements of the 12 plots against the original measurement data sheets. No inconsistencies were found.</p>		
<p>Description of the monitoring plan: 1. Sampling design</p>	<p>The monitoring report remarks that the main objective of the event is “to provide information on the bamboo plantation within project area and strata. Besides, information about growth, GHG (removals and emission) and on the project management activities will support the estimation of VCUs for the current accreditation period.”</p> <p>The sampling design is explained in detail, most importantly the criteria taken to stratify the project area into 5 strata, the size of the sample plot, the number of sample plots, the distribution of the plots, and finally the precision level expected to extrapolate the results.</p> <p>The sampling design and stratification were approved during the validation process. The audit team confirmed that all the approved criteria were implemented during the monitoring event, for instance:</p> <ul style="list-style-type: none"> <li>- Plot identification: using an alphanumeric code (K11 refers to plot 11 at Kama farm, for instance) to identify the plots.</li> <li>- Plot location: using a GPS device and GIS map. The geographical (and physical) location of the plot was verified using a GPS unit and comparing with the coordinate indicated in the monitoring field sheet.</li> <li>- Plot area: all the plots are the same area according to the stratum.</li> <li>- Strata identification and distribution of plots: stratification remains the same (5 strata) and all the plots were distributed by using the tool Hawth’s extension of the ArcMap 9.2. Siquia farm has 12 plots while Kama farm 32 plots.</li> <li>- Structure and responsibility: a monitoring crew was established and members were trained and coached by the leader onsite.</li> </ul>		
<p>2. Data collection, storage and reporting</p>	<p>Data collection of every plot was registered using spreadsheets in an electronic device (ipad). Cross control of data was implemented.</p> <p>After the GHG analysis, the information is archived electronically within the company’s professional dropbox account and hard copies as back up. It is mentioned in the monitoring report that the information will be kept at least for two years after the end of the crediting period.</p>		
<p>Conformance</p>	<p>Yes <input checked="" type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>N/A <input type="checkbox"/></p>
<p>NCR/OBS</p>	<p>None</p>		

**4.1.6 Observation of local laws and regulations**

Identify any relevant local laws and regulations and confirm project compliance with all applicable laws and regulations.

<p>Findings from Verification Field Audit</p>
<p>Section 1.11 of the PD describes all the national and international laws and regulations pertaining to the project including demonstration of compliance with the law or regulation. At the time of the 2014 verification audit, it appears that the project is in compliance with all applicable</p>

laws. This was confirmed through interviews with local stakeholders and employees.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.1.7 VCS AFOLU Requirements Section 3.1.5: Negative environmental and socio-economic impacts**

Project proponents shall identify potential negative environmental and socio-economic impacts and shall take steps to mitigate them. Additional standards such as the Climate, Community & Biodiversity Standards (CCBS) or Forest Stewardship Council (FSC) certification may be applied to demonstrate social and environmental benefits beyond GHG emissions reductions or removals. VCU's may be tagged with additional standards and certifications on the VCS project database where both the VCS and another standard are applied.

Findings from Field Audit			
Section 5 of the PD addresses the Environmental Impact. Although it is not required by law because the project has had two independent environmental impact assessments. Both documents coincide on identifying no negative effects associated with the bamboo plantation. Moreover, the biodiversity impacts are predicted to be positive. Regarding the socio-economic impacts, the PD establishes the commitment of the company to report social (and environmental) impacts over the lifetime of the project within investor reports. The FSC and CCBA also requires the project to comply with identification and mitigation of potential negative impacts.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2 Accuracy of GHG Emission Reduction or Removal Calculations**

**4.2.1 Calculation of emissions in the baseline scenario (ex-post estimate) following identified methodology and validated PDD**

Review relevant methodological equation logic for the calculation of baseline emissions as required for the relevant monitoring years. Note that the baseline calculations from some AFOLU projects must be re-validated every 10 years. Note that not all verification audits will require ex-post estimation of baseline emissions. This will be most common when baselines must be updated because the previously validated baseline scenario is no longer valid, or a significant event such as a major reversal has occurred.

Findings from Verification Field Audit			
Baseline emissions quantification step		Findings	
The validated PD identifies that the emissions in the baseline scenario can be neglected and therefore considered as zero, if the existence of the pre-project trees is monitored. The proponent has complied with this requirement and hence has maintained conformance with the applicability conditions. The auditor was able to confirm conformance to this applicability condition for the new project activity instances as well. Stratification holds the same criteria based on the density of scattered trees, however the auditor visited some places and observed less standing trees than they appear in the stratification, so it is considered a conservative measure.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.2 Calculation of stocks for all carbon pools identified in project boundary**

The quantification of carbon stocks for all relevant pools shall follow the requirements in the approved VCS methodology and shall demonstrate conformance with the Standard Operating Procedures identified by the proponent.

Findings from Field Audit			
According to the validated PD, the following are the relevant carbon pools identified ex ante, and now monitored: aboveground and belowground biomass, litter and soil organic carbon. A very specific set of SOPs for the bamboo were designed and implemented during the monitoring event. These procedures were approved during validation as the proponent demonstrated they fully comply with the VCS methodology requirements. Observation by the auditor of monitoring procedures confirms that all the farms are treated the same in growth monitoring and calculation of carbon stocks accumulation. The actual estimations of the carbon stocks for all the pools are analysed in section 4.2.3 below.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.3 Calculation of emissions from project activities (ex-post estimate) following identified methodology and validated PDD**

Review relevant methodological equation logic for the calculation of emissions for project activities as required for the relevant monitoring years. Note that emissions may be considered de minimis; refer to the validated PDD for project specific requirements in relation to project activity emissions.

Findings from Verification Field Audit			
Project scenario emissions and removals quantification		Findings	
During the land preparation, fire was not used at all; hence emissions from project activities can be neglected. This is determined by using the appropriate tool “Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity”. During the field visit the auditor verified this through direct observations and stakeholder consultation.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.4 Calculation of emissions reductions or avoided emissions due to the project (ex-post estimate) following identified methodology and validated PDD**

Review relevant methodological equation logic for the calculation of avoided emissions or removals from project activities as required for the relevant monitoring years.

Findings from Verification Field Audit			
<p>The monitoring report uses the appropriate equation from the methodology to calculate changes in carbon stocks. The equations were adapted to the specific conditions of the bamboo species.</p> <p>The determination of changes in bamboo biomass was based on the measurement of 44 permanent sample plots. Sampling methods are described in the monitoring plan and were confirmed in the field to be adequately followed. Basal area, height and the number of culms per clump were used to estimate the biomass per clump, from which the biomass and carbon content were calculated.</p> <p>The change in carbon stock of bamboo biomass was estimated following the tool “estimated of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”. The aboveground biomass corresponds to bamboo biomass only, no shrubs are considered in the calculation.</p> <p>The change in carbon stock in litter biomass was estimated following the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”. Finally, the soil organic carbon in project was estimated following the “Tool for estimation of change in soil organic carbon stocks due to the implementation of project activities”.</p> <p>For ex-post estimation the company used scientific reports recently published, some of which were developed by the company’s bamboo expert (Juan Carlos Camargo Ph.D), i.e. exponential models fitted by Camargo <i>et al</i> (2011) for <i>guadua</i> plantations in Colombia. By using these models, the proponent obtained an unbiased estimation of basal diameter, and the number of culms per clump, and finally the biomass of the rammet (total biomass: culm, branches, leaves and rhizome).</p> <p>A factor of 2.92% of the total bamboo biomass was accounted for the litter carbon pool. This factor was taken from a sampling conducted in Rio Cuá, Nicaragua, the region from which seeds came from. A value of 2.93 tCO2/ha was used to estimate the change of carbon stocks in the SOC carbon pool. Both values were approved during the validation process.</p> <p>Total biomass is summed and converted to the carbon fraction using a valid factor (0.5) approved in the validated PD and based on IPCC default values. Carbon fraction of litter was taken from IPCC default value as 0.37, as a conservative measure.</p> <p>The monitoring report shows a summary of the estimations while a spreadsheet was designed and submitted for revision. A sample of PSPs have been evaluated in the excel spreadsheets and it has been confirmed in this sample that the appropriate equation, factor for determining belowground biomass, and all equations have been appropriately calculated.</p>			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.5 Calculation of emissions from leakage (ex-post estimate) following identified methodology and validated PDD**

Review relevant methodological equation logic for the calculation of emissions from leakage as required for the relevant monitoring years. Note that emissions may be considered de minimis for some projects; refer to the validated PDD for project specific requirements in relation to project activity emissions.

Findings from Verification Field Audit			
As it was demonstrated in the validation visit, there is no displacement of cattle, fuelwood production or agricultural activities from the project area to other areas. Hence, leakage is not applicable. This scenario is applicable also to the new project instances; the auditor confirmed this through direct observations and stakeholder consultations.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.6 Assessment of uncertainty following identified methodology and validated PDD**

Review methodological requirements for uncertainty calculations and confirm calculations are in conformance with all methodological requirements related to uncertainty calculations.

Findings from Verification Field Audit			
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The auditor reviewed all data and parameters used to estimate the carbon stocks. Among all the carbon pools, only the soil organic carbon used a default value, therefore the organization conducted an assessment of uncertainty by following the specific guidelines required by the methodology: "Guidelines on conservative choice and application of default data in estimation of the net anthropogenic GHG removals by sinks".  
The monitoring report shows a complete analysis of the assessment of uncertainty and therefore the auditor considers the default value used, as a conservative measure.

Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.7 Appropriate use of default values following identified methodology and validated PDD**

Review default values used for GHG calculations and confirm conformance with required values identified in the validated PDD and applicable methodology.

Findings from Verification Field Audit			
A default value was only used for the soil organic carbon. The default was approved during the validation; the auditor reviewed the carbon calculations and confirmed the proponent used the value accordingly.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.8 The assumptions made for calculating GHG emission reductions and/or removals**

Identify assumptions made when calculating GHG emission reductions and/or removals, and confirm assumptions are in conformance with those in the validated PDD. Assumptions should be clearly and transparently described within the monitoring report, and supported with verifiable evidence.

Findings from Verification Field Audit			
Some assumptions were made in the PD and were evaluated for conformance during the validation audit. These same assumptions were considered during the monitoring event. The auditor reviewed the calculations, no inconsistencies were found.			
Assumptions include the applicability of default values and calculations methods already identified in this report and which are sourced from appropriate literature, including the carbon fraction of live and dead biomass and allometric equation.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.2.9 Calculation of net VCUs to be issued (ex-post estimate) following identified methodology and validated PDD**

Findings from Verification Field Audit			
The Non-Permanence risk report includes the calculation of total VCUs. Here, the PP subtracted leakage from change in carbon stocks to obtain the net GHG benefits, and then subtracted 10% (risk rating) to obtain the GHG credits issued (VCUs). The audit team reviewed the calculations to confirm that the methodology was followed and no errors were observed.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals**

Identify, discuss and justify conclusions regarding the sufficiency of quantity and appropriateness of quality of the evidence, the reliability of the evidence, and the source and nature of the evidence (external or internal, oral or documented) for the determination of GHG emission reductions or removals.

**4.3.1 Verification of inventory equipment used to calculate emissions reduction and/or removals**

Identify the inventory techniques used to calculate project emission reductions and removals. Confirm techniques conform with those identified in the validated monitoring plan outlined within the validated PDD. Note that most PDD's include Standard Operating Procedures (SOPs) for forest inventory that detail the inventory design and process.

Findings from Verification Field Audit			
The inventory techniques used to calculate reductions and removals were defined during the validation process, taking into consideration the specific requirements of the bamboo plantation. Being so, inventory techniques were replicated from previous experiments conducted in similar conditions to Nicaragua. The proponent carbon expert has developed the SOPs for inventory design and process. An electronic calliper and a tape are used to measure the basal diameter and hight of clumps. To register the data, another electronic device (ipad) is used along with a very specific application for bamboo plantations. QA/QC procedures were established in the validated PD; the auditor confirmed the monitoring crew members implemented the appropriate procedures to avoid systematic errors.			

Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.3.2 Verification of use of GPS and remote sensing analysis following identified methodology and validated PDD**

Identify any GPS and/or remote sensing analysis conducted as part of the development of the monitoring report. Confirm all remote sensing analysis and georeferencing was conducted in conformance with the identified methodology and validated PDD.

Findings from Verification Field Audit			
During the verification the bamboo expert explained in detail the steps the proponent took to verify the project boundaries by using GPS and GIS maps. GIS software was used to design the sampling (randomly distribute the sample plots) and a GPS device was used to find the coordinates in the fields and then establish the plots. The auditor got the set of coordinates and used a risk-based assessment approach to select the sample for re-measurement. All the plots were easily found and none of them were misplaced. According to interviews with monitoring crew members, the employees receive appropriate training to use the GPS so they can make decisions in the fields.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.3.3 Implementation of sampling plan described in the PDD**

Identify any requirements within the validated PDD that describe the sampling plan and confirm conformance with the sampling plan requirements. Confirm adequate sampling intensity was completed based on calculated project area variability.

Findings from Verification Field Audit			
The sampling plan considered the establishment and measurement of 44 plots adequately distributed among the five strata. The design and implementation of the plan was widely discussed with the bamboo expert and other employees. The auditor did not find any inconsistencies between the sampling plan and the implementation.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.4 Management and Operational System**

Identify, discuss and justify conclusions regarding the suitability of the management system for monitoring and reporting (ie, organisational structure, responsibilities, competencies, non-conformance handling, internal audits and management review).

Findings from Verification Field Audit			
The proponent designed the monitoring plan and based on this, the internal protocols to implement the plan. It is evident that all the key workers are fully involved in the monitoring events including training, measuring, archiving and reporting. QA/QC procedures are considered sufficient for identifying, reviewing and handling inconsistencies. All the monitoring crew members and other workers participated in the re-measurement of the plots; all of them showed understanding and commitment to comply with the validated monitoring plan. In the monitoring report there is a specific section called "Addressing Non Conformities" in which it is established that the proponent management team and plantation managers will deal with field and documentation and reporting non conformities.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.4.1 Monitoring roles and responsibilities identified**

Identify any changes in the monitoring roles and responsibilities from the validated PDD. Confirm project staff competency for conducting applicable tasks as designated.

Findings from Verification Field Audit			
During the validation process it was established that the monitoring crew were going to be composed by a coordinator, a field technician and a data analyst. This structure was kept during the monitoring event. The coordinator of the monitoring crew is the bamboo expert of the company, and the other crew members are staff employees well trained by the coordinator. The auditor confirmed competency of all people involved in the monitoring.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.4.2 Inventory quality management systems (including both field and remote sensing as applicable)**

Identify quality management systems (QMS) required by the project methodology and/or described within the validated PDD. Confirm project has implemented QMS effectively, and inventory accuracy thresholds if applicable are met.

Findings from Verification Field Audit			
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The QA/QC procedures were established at validation and were approved by the audit team. The auditor interviewed the monitoring crew members and reviewed the implementation during the re measurement of the plots. No inconsistencies were found. The monitoring plan/report defines QA/QC procedures to be implemented and collecting, managing and archiving data and parameters that come from the measurement of the plots.

Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.4.3 Data transcription quality management systems**

Identify data management systems required by the project methodology and/or described within the validated PDD. Confirm project has implemented data management systems, and data transcription from field inventory to electronic records is accurate. Audit team should complete a sample of data transcription accuracy from original field data sheets.

Findings from Verification Field Audit

The monitoring plan/report includes the data management system (collecting, registering, transcription and archiving) the proponent implemented. The use of electronic records from the field by using an ipad and an specific application is a very efficient way to avoid systematic errors and improves accuracy of the data. The auditor confirmed onsite that no errors were registered while taking notes in the re measurement event.

Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.4.4 Data management and archival systems**

Identify data management and archival systems required by the project methodology and/or described within the validated PDD. Confirm project has implemented data archival systems and can demonstrate effective retrieval of archived data for the period of time defined within the validated PDD (note the VCS requires at a minimum the storage of all relevant data for 2 years following the end of the project crediting period).

Findings from Verification Field Audit

The proponent explained that all the records related with the validation and verification of the plantation project is managed by key staff personnel only. Copies are stored in safe places with both physical and electronic documents in the administrative office in Managua and El Rama. The proponent is aware that the storage of all relevant data will persist at least two years following the end of the project crediting period.

Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**Non-permanence Risk Assessment**

Note: Risk factors are determined through a qualitative analysis conducted, following the guidance of the VCS AFOLU Non-Permanence Risk Tool. As stated in Section 1.1.3 “Project proponents shall clearly document and substantiate the risk analysis covering each risk factor applicable to the project. During the analysis, the validation/verification body shall evaluate the risk assessment undertaken by the project proponent and assess all data, rationales, assumptions, justifications and documentation provided by the project proponent to support the non-permanence risk rating.”

**4.3.1 VCS AFOLU Non-Permanence Risk Tool Section 2.2.4.4: Projects with tree harvesting**

For ARR and IFM projects with harvesting, project longevity may include the length of time the activities that maintain carbon stocks will continue, either through the continuation of the project activity or by replanting or re-growth of the trees after the last harvest in the project crediting period. Such commitment to continue the management practice, or to replant or allow re-growth shall be demonstrated through evidence such as certification of sustainable forest management under Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC) or other internationally recognized schemes, or contractual agreements for timber supply beyond the last harvest in the project crediting period. Re-growth may be considered only where project areas, after harvesting, will be managed for regeneration (naturally or with assistance), maintaining the current species mix and allowing trees to re-grow to an age equivalent to at least the age at which trees were harvested, as demonstrated in management plans.

<b>Findings from Review on Field Audit</b>			
The bamboo plantation project was designed to experience partial harvesting (thinnings) or final cuts when the commercial cycle comes to an end (for instance, thinning at year 8 <sup>th</sup> ). Moreover, the project longevity was defined to be of 85 years while the crediting period consists of 20 years. Certification of sustainable forest management under FSC and under CCBA is maintained.			
Conformance	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
NCR/OBS	None		

**4.3.2 VCS AFOLU Non-Permanence Risk Tool Section 2.1.1: Risk analysis**

Projects shall prepare a non-permanence risk report in accordance with VCS document AFOLU Non-Permanence Risk Tool at both validation and verification. In the case of projects that are not validated and verified simultaneously, having their initial risk assessments validated at the time of VCS project validation will assist VCU buyers and sellers by providing a more accurate early indication of the number of VCUs projects are expected to generate. The non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template, which may be included as an annex to the project description or monitoring report, as applicable, or provided as a stand-alone document.

The potential transient and permanent losses in carbon stocks shall be assessed over a period of 100 years from the start of the current monitoring period, unless otherwise specified in Sections 2.2 to 2.4 of the VCS AFOLU Non-Permanence Risk Tool, to determine the appropriate risk rating.

Risk Factor	Self Assessment Risk Rating	Findings (including description of any mitigation activities as required per VCS AFOLU Non-Permanence Risk Tool Section 2.1.2.2)	NCR/OBS
<b>Internal Risks (VCS AFOLU Non-Permanence Risk Tool Section 2.2):</b>			
Project Management: Shall be assessed using Table 1 of VCS AFOLU Risk Tool.	-4	<ul style="list-style-type: none"> <li>- The species planted is native to Nicaragua.</li> <li>- Physical boundaries surround all the project lands already. The properties are managed under strict control over illegal activities.-</li> <li>- The project is permanently supervised by local experts, field workers and also is technically supported by a bamboo expert.</li> <li>- Management team maintains a continuous presence over the project site.</li> <li>- Mitigation: Management team includes professional personnel and partners with more than five years of experience in AFOLU projects.</li> <li>- Mitigation: There is in place an effective</li> </ul>	None

		adaptive management plan which is updated with incomes from FSC certification and other schemes. Lessons learned are compiled and shared with employees in terms of training sessions.	
Financial viability: Shall be assessed using Table 2 of VCS AFOLU Risk Tool.	2	<ul style="list-style-type: none"> <li>- The project cash flow breakeven point, where annual income consistently exceeds annual outgoings occurs in 2020, this is 6 years from the current risk assessment. The audit team discussed key details with the PP regarding the cash in and cash out used to create the cash flow in which is demonstrated where the breakeven point is reached.</li> <li>- Since validation in 2012 the project has currently secured 86% of the cash flow required until the project breakeven point in 2020. After the field visit the auditor discussed the plantation model (financial) along with the President of the company to confirm what this percentage includes. No inconsistencies were found.</li> </ul>	None
Opportunity cost: Shall be assessed using Table 3 of the VCS AFOLU Risk Tool.	0	<p>In the without scenario the most likely land use would be the continuation of pre project activity (low intensity cattle grazing) and the alternative land use is conversion to large scale palm oil plantations which is expected to have a higher NPV than a bamboo plantation (project activity). For obvious reasons it is not possible to get an unbiased NPV data.</p> <ul style="list-style-type: none"> <li>- The project has raised a 15 year commitment period of debt finance through the issuance of long term leases and through a publicly traded and accountable fund. No risk is taken based on the fact that oil palm plantations are expected to be more profitable than the bamboo plantation project.</li> </ul>	None
Project longevity: Shall be assessed using Table 4 of the VCS AFOLU Risk Tool.	7	<ul style="list-style-type: none"> <li>- The PP defined that the project longevity is 85 years. The company has a formal commitment to maintain the FSC certification over all the bamboo plantations, old and new ones. After the crediting period (20 years) the company will continue the management of the bamboo plantation since the main commercial idea is to offer finished products and restore the degraded lands in the project area.</li> </ul>	None
Total Internal Risk: Shall be calculated using Table 5 of the VCS Risk Tool.	5	The proponent calculated the total internal risk properly.	None
<b>External risks (VCS AFOLU Non-Permanence Risk Tool Section 2.3):</b>			
Land and resource tenure: Shall be assessed using Table 6 of the VCS Risk Tool.	0	<ul style="list-style-type: none"> <li>- All land within the project boundaries is fully and legally owned by EcoPlanet Bamboo. Strict due diligence procedures are implemented when the company is acquiring new lands. The audit team did not find existing of prior conflicts to any land owned.</li> <li>- Use rights of the land and the environmental services lie with EcoPlanet Bamboo.</li> </ul>	None
Community engagement:	-5	- Local population are not reliant on the	None



Shall be assessed using Table 7 of the VCS Risk Tool.		project area; the audit team confirmed during the field visit that people do not live within the project boundary and that previously to the acquisition; the land was also private land. - Mitigation: The proponent conducts very frequently a full socio economic assessment of communities. The auditor reviewed the report and confirmed data with local stakeholders. Positive impacts are expected to continue over the crediting period.	
Political risk: Shall be assessed using Table 8 of the VCS Risk Tool.	0	- The PP estimated as 0.60 the governance score according to WBI. EcoPlanet Bamboo is receiving MIGA political risk insurance from the World Bank in order to mitigate potential political risks. - Nicaragua is receiving funding from the World Bank Forest Carbon Partnership Facility and has just this month submitted their updated Readiness Preparation Proposal (R-PP) which details a clear policy framework covering all key components of a REDD system.	None
Total external risks: Shall be calculated using Table 9 of the VCS Risk Tool.	0	The PP calculated the total external risk properly.	None
<b>Natural Risks (VCS AFOLU Non-Permanence Risk Tool Section 2.4):</b>			
Natural risks: Shall be assessed using Table 10 of the VCS Risk Tool.	0.5	- The PP has determined natural risk due to fire events, pest and disease outbreaks and also extreme weather. The verification team confirmed this through interviews with employees. - All the natural risks were evaluated over a period of 0 to more than 100 years.	None

**4.3.3 VCS AFOLU Non-Permanence Risk Tool Section 2.5.1 – 2.5.3: Overall Project Risk Calculation**

Note: As per VCS AFOLU Non-Permanence Risk Tool 2.5.2, the minimum risk rating shall be 10, regardless of the risk rating calculated using Table 11. Furthermore, where overall risk rating is greater than 60, project risk is deemed unacceptably high and the project fails the entire risk analysis (see VCS AFOLU Non-Permanence Risk Tool 2.5.3). For additional information on project risk assessment failure see VCS AFOLU Non-Permanence Risk Tool 2.1.

To determine the number of buffer credits that shall be deposited in the AFOLU pooled buffer account, the overall risk rating shall be converted to a percentage (e.g., an overall risk rating of 35 converts to 35%). This percentage shall be multiplied by the net change in the project's carbon stocks (stated in the verification report), as set out in the VCS document Registration and Issuance Process. Where a project is divided into more than one geographic area for the purpose of risk analysis, the overall risk rating percentage for each area shall be multiplied by the net change in the project's carbon stocks (stated in the verification report) in such geographic area.

Risk Factor	Self Assessment Risk Rating	Findings	NCR/OBS
Overall non-permanence risk rating as determined using Table 11 of the VCS Risk Tool.	10%	The total score was actually 5.5% or risk of non-permanence, however as it is required by VCS standard, the minimum buffer is 10%. The PP has interpreted this topic correctly in the risk assessment.	None

**5. VERIFICATION CONCLUSION AND AUDIT OVERVIEW**

<b>Based on Project's conformance with audit criteria, the auditor makes the following recommendation:</b>		
<b>Final Report Conclusions</b>		
	Verification approved: <i>No NCRs issued</i>	
	Verification not approved: <i>Conformance with NCR(s) required</i>	
<input checked="" type="checkbox"/>	Verification approved: <i>No NCRs issued</i>	The Project Proponent has 7 days from the date of this report to submit any comments related to the factual accuracy of the report or the correctness of decisions reached. The auditors will not review any new material submitted at this time.
<input type="checkbox"/>	Verification not approved: <i>Conformance with NCR(s) required</i>	
<b>Draft Report Conclusions</b>		
<input checked="" type="checkbox"/>	Verification approved: <i>No NCRs issued</i>	The Project Proponent has 30 days from the date of this report to revise documentation and provide any additional evidence necessary to close the open non-conformances (NCRs). If new material is submitted the auditor will review the material and add updated findings to this report and close NCRs appropriately. If no new material is received before the 30 day deadline, or the new material was insufficient to close all open NCRs the report will be finalised with the NCRs open, and validation and/or verification will not be achieved. If all NCRs are successfully addressed, the report will be finalised and proceed towards issuance of a assessment statement.
<input type="checkbox"/>	Verification not approved: <i>Conformance with NCR(s) required</i>	

**5.1 Audit Conclusions**

See Section I above for the verification objectives, scope, criteria, and level of assurance.

After reviewing all the documents submitted by the project proponent and discussions, the Rainforest Alliance found the evidence sufficient to verify that the project proponent has implemented the monitoring activities according to the validated PD and also the validated Monitoring Plan. As a result, the project was found to be in conformance with the VCS Version 3 standard and also that the net GHG benefits (removals) caused by the project can be estimated with a reasonable level of assurance.

**Verified Emission Reductions and/or Removals:**

Following the review of the monitoring report and supporting documents, the audit team has concluded with a reasonable level of assurance that the project is in full conformance with the VCS standard requirements, validated project design document, and approved VCS methodology. Below is a description of the verified emission reductions as reviewed and approved by the audit team.

**Reporting Period:** From June 1 2011 to February 1 2014

The following table includes the emission reductions and/or removals evaluated and approved during the verification audit:

<b>GHG Emission Reductions or Removals</b>	<b>tCO<sub>2</sub>e</b>
Baseline Emissions	0
Project Emissions	0
Project Removals	37,952tCO <sub>2</sub> equivalent
Leakage	0

Uncertainty Deduction (if applicable)	0
<b>Net GHG emission reductions or removals</b>	37,952tCO <sub>2</sub> equivalent
<b>Total calculated buffer contribution</b>	3,795.2 tCO <sub>2</sub> equivalent
<b>Total VCUs to be issued</b>	34,156.8 tCO <sub>2</sub> equivalent

**5.2 Nonconformance evaluation**

*Note: A non-conformance is defined in this report as a deficiency, discrepancy or misrepresentation that in all probability materially affects carbon credit claims. Each NCR is brief and refers to a more detailed finding in the appendices.*

NCRs identified in the Draft Report must be closed through submission of additional evidence by the Project Proponents before Rainforest Alliance can submit an unqualified statement of conformance to the GHG program. Findings from additional evidence reviewed after the issuance of the draft report are presented in the NCR tables below.

**No NCRs were raised**

**5.3 Observations**

*Note: Observations are issued for areas that the auditor sees the potential for improvement in implementing standard requirements or in the quality system; observations may lead to direct non-conformances if not addressed. Unlike NCRs, observations are not formally closed. Findings from the field audit related to observations are discussed in Appendix A below.*

**No OBS were raised**

**5.4 Actions taken by the Project Proponent address NCRs (including any resolution of material discrepancy)**

Action Taken by Project Proponent following the issuance of the Draft Report		Date
Additional documents submitted to audit team (additional documents listed below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional stakeholder consultation conducted (evidence described below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Additional clarification provided	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Documents revised (document revision description noted below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
GHG calculation revised (evidence described below)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	