# VALIDATION REPORT FOR THE CORDILLERA AZUL NATIONAL PARK REDD PROJECT

*SCSglobal* SERVICES

*Setting the standard for sustainability™*

| | |
|---|---|
| **Project Title** | *Cordillera Azul National Park REDD Project* |
| **Version** | *1.0* |
| **Report ID** | *25 January 2013* |

| | |
|---|---|
| **Report Title** | Validation Report for the Cordillera Azul National Park REDD Project |
| **Client** | Centro de Conservación, Investigación y Manejo de Areas Naturales – Cordillera Azul |
| **Pages** | 47 |
| **Date of Issue** | 1 February 2013 |
| **Prepared By** | SCS Global Services |
| **Contact** | 2000 Powell Street, Suite 600, Emeryville, CA 94608, USA <br> http://www.SCScertified.com <br> Email: cpollet-young@SCScertified.com <br> Telephone: +1 (510) 452-8000 |
| **Approved By** | *Christie Pollet-Young* |
| **Work Carried Out By** | Ryan Anderson, Lead auditor <br> Francis Eaton, Auditor |

Christie Pollet-Young, Auditor

Jazmín Gonzales Tovar, Technical Expert

Manuel Salirrosas, Technical Expert

Victor Solano, Technical Expert

Larry Wilson, Technical Reviewer

**Summary:**

This report documents the validation of the Cordillera Azul National Park REDD Project against the Verified Carbon Standard version 3.3 and its supporting documents, including the approved methodology VM0007 version 1.3, "REDD Methodology Modules." The validation activities included desk review of project design documentation and supporting documents, a field visit to the project area, interviews with relevant personnel, re-measurement of forest carbon plots, and review of calculations of the project's net carbon benefits. The project seeks to avoid deforestation on approximately 1.3 million hectares of the Cordillera Azul National Park in Peru. The review of the project documentation, site visit, and the project proponent's response to findings issued by SCS has provided SCS with sufficient evidence to determine the fulfilment of the stated criteria. The Project correctly applies the selected methodology element and is in conformance with all applicable requirements of the Verified Carbon Standard (VCS). The Project is designed to lead to reductions of GHG emissions that are real, measurable and give long-term benefits to the mitigation of climate change. In summary, it is the opinion of SCS that the Project, as described in the project description (PD) document version 4.0 dated 20 December 2012 meets all relevant Verified Carbon Standard 3.3 requirements and correctly applies the selected methodology.

**Table of Contents**

# CONTENTS

# 1       INTRODUCTION

## 1.1     Objective

The purposes of this validation assessment were to review and confirm the project's conformance with all relevant requirements of the Verified Carbon Standard, supporting AFOLU guidance documents, and the selected methodology, Approved VCS Methodology VM0007 version 1.3, "REDD Methodology Modules."

Validation activities included the following:

- Assess the validation/verification criteria to determine completeness and compliance with VCS standards and the selected methodology;
- Evaluate the validation/verification scope, including the GHG project and baseline scenario; GHG sources, sinks, and reservoirs; and the physical infrastructure, activities, technologies and processes of the GHG project;
- Evaluate the monitoring plan and develop conclusions regarding the monitoring methodology and the collection and archiving of data relevant to GHG emissions estimation and baseline emissions; and
- Evaluate the calculation of GHG emissions, including appropriateness of source, sink, and reservoirs; the correctness and transparency of formulae and factors used; assumptions related to estimating GHG emission reductions; and uncertainties.

## 1.2     Scope and Criteria

SCS assessed the completeness of the project documentation to ensure that all requirements of the VCS standards have been addressed. SCS assessed whether or not the project document respects the principles of the VCS standards. Assessment included but was not limited to evaluation of additionality, project design, baseline, monitoring plan, and calculation of GHG emissions.

The scope of validation encompassed desk and site validation and verification activities for the project against the following requirements of the Verified Carbon Standard (VCS) Version 3.3 Program Documents:

- VCS Program Guide
- VCS Standard
- VCS AFOLU Requirements
- VCS AFOLU Non-Permanence Risk Tool

The validation process involved:

- Assessment of the management systems, data handling and estimation methods used in calculating and reporting emissions data;
- Assessment of baseline methodology and determination;
- Assessment of and issuance of an opinion on issues of leakage and additionality;
- Evaluation of the measurement and monitoring system and its ability of delivering high quality carbon stock data;
- Assessment of data accuracy and any assumptions made in the manipulation of data; Verification that the organization is operating according to the methodology approved by VCS;

## 1.3     Level of assurance

Per Section 5.3.1 of the VCS standard, the level of assurance is reasonable with respect to material errors, omissions and misrepresentations.

## 1.4    Summary Description of the Project

The following summary description of the project is quoted from Section 1.1 of the PD prepared by the project proponent:

Cordillera Azul National Park (PNCAZ) REDD Project protects a large, intact expanse of lower-montane forest remaining in Peru. PNCAZ is the easternmost outlier of the Andes at this latitude and covers portions of seven provinces in four departments in Peru: San Martín, Ucayali, Huánuco, and Loreto. The project area is 1,351,963.85 hectares within the boundaries of PNCAZ owned by the government of Peru, by order of its designation as a national park. The park's buffer zone was officially recognized by the Peruvian government in a Supreme Decree establishing the park. In 2007 the buffer zone was expanded by legislation, resulting in an area of 2,301,117.24 hectares.

Each mountain range in the park is a separate, uplifted block of mostly Jurassic and Cretaceous strata, which predominate in the north eastern Peruvian Andes south of the Marañon River. Most of these tilted blocks are oriented north and south, but some curve to run east and west. A distinctive geological feature, the Vivian formation consists of rows of flat, sloping triangles of rock up to 7 km broad at the base and 4 km along the ridge resembling giant zigzags. They are well developed and almost perfectly symmetrical in two areas of the park.

The possibility of non-contacted indigenous people from the Cacataibo group living in the southeast region of the park led to the establishment of a "strict protection zone" (Zona de Protección Estricta in Spanish) in the region that permits zero outside entry. Until these people come out of their own volition and request contact, the region remains closed to all entry or use.

There are no organized human communities within the project area. The one known dweller inside the park – a cattle rancher – does not have legal land tenure but has an agreement with SERNANP and CIMA allowing him to remain on his land.  He violated this agreement shortly before the project began.   The ranch is discussed further in Section 1.10.4.

The total population in the districts around and including the park in 2008 was 321,000. This population has access to the park for subsistence hunting and fishing. The population in the actual buffer zone is estimated at 180,000, with the remaining population residing beyond the buffer zone. Most of the park-neighboring communities are on the west, along the Huallaga valley. Most Huallaga residents are *mestizo*. The only officially recognized indigenous population on the Huallaga side (with land titles as a "native community") is a small Quechua-Lamista community in the district of Chazuta. The Ucayali region on the park's eastern side differs dramatically from the west. The population is sparse and predominantly indigenous—principally Shipibo, with some Piro/Yine and Kakataibo groups—each group conserving its cultural identity and mother language.

The project area includes intact forests from the lowlands (at 300 meters) to mountain peaks (at 2,400 meters) and protects an eastern outlier of the Andes that has been isolated sufficiently long for massive speciation to occur. Scientists who conducted the Rapid Biological Inventory led by The Field Museum in 2000 estimated a total of 4000 – 6000 plant species in the park, with at least 12 probably new to science. (Alverson *et al.*

2001) In their three weeks in the field, the scientists observed 71 large mammal species including bush dogs, spectacled bears, 10 species of primates, and enormous herds of white-lipped peccaries. Bird diversity is extremely high, with more than 590 species already registered for the park and actual species richness probably exceeding 800 species. During the inventory, 58 species of amphibians and 26 of reptiles were registered, but these numbers are low because the inventory was conducted during the dry season when few species are calling and active. Inventories to date have confirmed 150 species of fish with total richness expected to be greater than 250 species.

The project area consists of 1,351,963.85 hectares within the park that belongs to the national government of Peru. Upon its formation in 2002, Centro de Conservación, Investigación, y Manejo de Áreas Naturales– Cordillera Azul (CIMA) voluntarily signed an agreement with the Peruvian government to support the management of the park. The agreement was renewed for one-to-two year terms until August 8, 2008 when CIMA and the Peruvian government signed a 20-year, full management contract. The 2008 management contract includes legal authorization for CIMA to use revenues from the sale of carbon credits from avoided deforestation for park activities for the 20-year term. CIMA is the only NGO with a contract with the Peruvian government for full management of the entire national park and buffer zone. CIMA and PNCAZ receive no or extremely limited funds from the government of Peru per the terms of the management contract, which further differentiates PNCAZ from other Peruvian national parks.

As a result of a funding crisis in 2007, CIMA and its technical advisor, The Field Museum, sought a more sustainable source of funding than the foundation and USAID funding that they had been receiving to date for park protection and land-use management activities. The two organizations decided to pursue a REDD project for PNCAZ because no alternative, sustainable financing was available and CIMA would have to cease all protection and management activities in the park and buffer zone. Two protocols were identified to develop and monitor the project: Verified Carbon Standard (VCS) and the Community, Climate and Biodiversity (CCB) protocol. Under VCS, the project is using VM0007 REDD Methodology Modules (REDD-MF) for unplanned frontier deforestation for carbon stock and avoided emissions assessment. The signing of the 20-year management contract in 2008 served as the start of the carbon project.

The project's primary objective is to prevent deforestation in PNCAZ by focusing on three main types of project activities:

- Protecting the park.
- Building local capacity for sustainable land use and improving the quality of life in the buffer zone communities.
- Strengthening relationships with local, regional and national government agencies.

All project activities support these goals.

.

## 2    VALIDATION PROCESS

### 2.1    Method and Criteria

SCS used document reviews, interviews, a site visit, and quantitative data analysis in the validation of this project as further described below.  The criteria for validation are described in Section 1.2 of this report.

### 2.2    Document Review

The validation team performed a careful review of the PD and supporting literature to assess conformance to the criteria of the validation standards.

Throughout the audit process, the validation team focused mainly of the PD, the non-permanence risk report, and the associated methodological workbooks. This approach allowed for a detailed assessment of the project design as it conforms to the criteria of the VCS v3.3 (4 October 2012) and the associated methodology (VM007 REDD Methodology Modules (REDD-MF), v1.3) for AFOLU projects. In addition, the validation team was able to assess proper utilization of the AFOLU Non-Permanence Risk Tool (4 October 2012, v3.2).  The key documents provided for the desk review portion of the validation are as follows:

- PNCAZPDDrevDec192012
- Appendix 9 PNCAZ analysis 28August2012
- PNCAZ Non-Permanence Risk Report

In addition to the PD, the following documentation (e.g., reports, memos, land deeds and titles) were reviewed to ensure conformance of the project to the VCS rules and the methodology:

| Documents Reviewed |
|---|
| 2002 CIMA INRENA agreement with addenda for 2007 (2001) |
| 2008 CIMA SERNANP contract (24 September 2008) |
| PNCAZ  Project  Financial  Data (22 June 2011) |
| DPM PNCAZ 20 2011-2016 (3 May 2012) |
| Plan Maestro 2003-2008 (18 November 2011) |
| Plan Maestro 2011-2016 (3 April 2012) |
| Analisis de Riesgos Picota (8 February 2008) |
| CIMA 2012 - MicroZEE Shamboyacu (9 April 2004) |
| Convenio TNC-CIMA (May.2012) (19 September 2012) |
| 527-A-00-08-00024-00 FM-CIMA Modification 11-Feb-2011 (11 February 2011) |
| USAID Agreement (5 August 2008) |
| INEI 2001 - Estimaciones y proyecciones de Poblacion 1950-2050 (3 December 2001) |
| Lista de Comunidades  para PM (4 October 2012) |
| 2012  Agreement TC - CIMA_22OCT2012 (23 October 2012) |

| |
|---|
| 2012 Agreement TFM-CIMA_22OCT2012 (23 October 2012) |
| actas de acuerdo y colindancia (20 August 2012) |
| FINALJuly2012VCSWorkshopMinutes (21 August 2012) |
| Informe de Propietarios de tierras asentados en el PNCAZ (23 August 2012) |
| metodologia_(R) (27 August 2012) |
| Supreme Decree for the Creation (22 May 2001) |
| Saatchi (12 April 2007) |
| SINANPE 2009 - Plan Financiero (16 September 2009) |
| Impacts of Road Improvement in Peru (7 November 2003) |
| Transition Potential Modeling for Land Cover Change (5 May 2005) |
| An Assessment of Deforestation Models for Reducing Emissions from Deforestation and Forest Degradation (REDD) (11 November 2010) |
| PNCAZ forest biomass inventory (29 November 2009) |
| Equacoes para estimative de volume de madeira para a regiao da bacia do Rio Ituxi, Labrea, AM (23 December 2010) |
| Biomassa da Parte Aerea da Vegetacao da Floresta Tropical Umida de Terra-Firme da Amazonia Brasileira (24 May 2005) |

Where documents underwent multiple iterations to account for revisions, only the most up to date version is listed above.

## 2.3    Interviews

The following personnel were interviewed during the site visit and a series of conference calls:

Christina Magerkurth, The Field Museum
Debby Moskovits, The Field Museum
Patricia Fernández-Dávila, CIMA
Jorge Aliaga, CIMA
Cinthia Mongylardi, CIMA
Tatiana Pequeño, CIMA
Jorge Luis Martinez, CIMA
Rebecca Dickson, TerraCarbon
David Shoch, TerraCarbon
Pedro Gamboa, Head of National Service of Protected Areas by the State (SERNANP)
Lucia Ruiz Ostoic, Cabinet Chief Advisor at Ministry of Environment (MINAM)
Frank Oyola, Head of Park Guards – Cordillera Azul National Park

Park Guards, Cordillera Azul National Park
Buffer Zone Communities:

- Vista Alegre
- Chambira
- Simon Bolivar
- Santa Rosa de Chipaota/Mushukllacta de Chipaota
- Canayo
- San Juan
- Yamino
- Challual
- La Juanita

## 2.4    Site Inspections

Members of the audit team visited the project area from 22 October 2012 to 8 November, 2012. The objectives of the on-site inspections performed were to:

- Ensure that the geographic area of the project, as reported in the PD and the accompanying KML file, is in conformance with Section 3.11.1 of the VCS Standard;
- Select samples of data from on-the-ground measurements for validation in order to meet a reasonable level of assurance and to meet the materiality requirements of the project, as required by Section 5.1.3 of the VCS Standard;
- Perform a risk-based review of the project area to ensure that the project is in conformance with the eligibility requirements of the VCS rules and the applicability conditions of the methodology; and
- Perform a risk-based review of the project area to ensure that the project conforms to all other requirements of the VCS rules and the methodology.

The site visit included interviews of the personnel listed in section 2.3, reviews of data and records kept by the project proponent, and visits to the project area and surrounding buffer zone, including field sampling as described in section 3.2.6 of this report.
During the site visit, the audit team interviewed stakeholders, observed conditions in the region to understand the baseline, and conducted field verification of biomass plots.

## 3    RESOLUTION OF ANY MATERIAL DISCREPANCY

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

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

**New Information Request (NIR)**: An NIR signified a need for supplementary information in order to determine whether a material discrepancy existed with respect to a specific requirement. Receipt of an

NIR did not necessarily indicate that the project was not in compliance with a specific requirement. However, resolution of all open NIRs was a prerequisite for issuance of a validation statement.

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

All findings issued by the audit team during the validation process have been closed. In accordance with Section 5.3.6 of the VCS Standard, all findings issued during the validation process, and the impetus for their closure, are described in Appendix A of this report.

# 4    VALIDATION FINDINGS

## 4.1    Project Design

### 4.1.1    Project Scope and Type

The project is an AFOLU project under falling under VCS sectoral scope 14.  The project is designed to avoid unplanned frontier deforestation.  Specifically, it meets the requirements outlined in the VCS AFOLU requirements document Section 4.2.9(2) because it implements activities designed to reduce net GHG emissions by reducing deforestation that is not planned or legally authorized.

### 4.1.2    Project Eligibility

The primary project activity involves protection of forest from unplanned illegal deforestation.  The audit team determined that the project is consistent with the requirements of the VCS standard, the relevant VCS AFOLU requirements, and the approved VCS methodology VM0007 and is therefore an eligible project under the VCS.  The project sectoral scope is 14 "Agriculture Forestry and Other Land Use" and the project type is Avoided Unplanned Deforestation.

### 4.1.3    Project Proponent

The project proponent is Centro de Conservación, Investigación y Manejo de Áreas Naturales – Cordillera Azul (CIMA-Cordillera Azul).  Contact information for the project proponent is provided in Section 1.3 of the PD.  Other entities involved in the project include The Field Museum and TerraCarbon LLC.  Contact information for each of these entities is provided in the PD.

### 4.1.4    Project Start Date

The project start date is 8 August 2008, which corresponds with the signing of the management contract for the park.  The audit team reviewed the contract to confirm the start date and also verified a change in management practices corresponding with project implementation by reviewing management plans. The project has completed validation within five years of the project start date, in accordance with Section 3.8.2 of the VCS standard.

### 4.1.5    Project Crediting Period

The project crediting period is twenty years, extending from 8 August 2008 to 7 August 2028.  This period is consistent with the monitoring and implementation plans submitted by the project proponent and is in conformance with the requirements of the VCS standard.

### 4.1.6    Project Scale and estimated GHG Emissions Reductions or Removals

The *ex-ante* estimates of GHG emissions reductions or removals for the project are provided in Section 1.7 of the project document.  The calculations used to produce these estimates were checked by the audit team during the assessment of the application of the methodology (see Section 2.7).  All material errors discovered by the auditor have been corrected by the project proponent.  Based on the estimates reported, the project's emissions reductions and removals are expected to qualify it "large project."

### 4.1.7    Project Activities

The project activities are described in Section 1.8 of the project document.  In summary, the project seeks to avoid deforestation by implementing a broad range of  activities within the park and the surrounding buffer zone, including but not limited to the following categories of activity: demarcation of boundaries; installation of signs and guard stations; expanded guard programs; reporting and surveillance; legal enforcement; management planning; environmental education and community outreach in the buffer zone; social data collection and analysis; and development and support of relationships with government agencies.  The audit team reviewed a number of reports, results of data collection efforts, and planning documents to confirm that these activities are designed in conformance with the VCS standard and approved methodology VM0007, and that they are indeed planned and appropriate for the project circumstances.  Additionally, the audit team conducted interviews during the site visit, which included conversations with project proponents, government officials, park guards, and members of local communities to better understand the pressures in the area and challenges to conservation. Based on this information gathered, the audit team concludes that the project activities were described in adequate detail for evaluation in the PD and supporting documents and that they appear to be appropriate to the local context of the project.

### 4.1.8    Project Location

The project location is described in Section 1.9 of the PD. The project is located within the boundaries of Cordillera Azul National Park (PNCAZ) owned by the government of Peru. Shapefiles delineating the project area boundaries were provided and reviewed by the auditor, and a kml file was provided in accordance with the specifications of the VCS standard. The project location as described in these documents and files is consistent with GPS data collected by the audit team during the site visit.

### 4.1.9    Project Compliance with Applicable Laws, Statutes and Other Regulatory Frameworks

The project document describes compliance with laws, statues, and regulatory frameworks in Section 1.11.  The audit team conducted interviews with stakeholders including representatives of the regional government.  No evidence was seen that suggested that the project activities were contrary to any applicable laws, statutes, or regulatory frameworks.

### *4.1.10 Ownership and Other Programs*

**4.1.10.1 Right of Use**

Right of Use for carbon in the area is described in section 1.12.1 of the project document. All land in the project area belongs to the Peruvian government, by order of its designation as a national park, except for 1,227 hectares located in the northeast portion of the park that were privately owned prior to the park's formation. The management contract granted to the project proponent includes legal authorization for the project proponent to develop a carbon project within the project area. The audit team reviewed records of the privately owned areas discussed and confirmed that they had been appropriately excluded from the project area via GIS analysis. Additionally, the audit team reviewed a series of contracts and legal documents that establish the proponent's right to sell carbon credits generated within the project area. The audit team concludes that the project proponent has demonstrated a right of use that is consistent with the VCS standard.

**4.1.10.2 Emissions Trading and Other Binding Limits**

The project is not located in a jurisdiction with binding limits on greenhouse gas emissions.

**4.1.10.3 Participation in Other Greenhouse Gas Programs**

The project proponent has stated that the project does not participate in other greenhouse gas programs. An internet search by the audit team showed no indication that the project has participated in other greenhouse gas programs.

**4.1.10.4 Other Forms of Environmental Credits**

The project proponent has stated that the project does not generate any other form of environmental credit. An internet search by the audit team showed no indication that the project has generated any other form of environmental credit.

**4.1.10.5 Rejection By Other Programs**

The project proponent has stated that the project has not been rejected by any other greenhouse gas program. An internet search by the audit team showed no indication that the project had been rejected by another greenhouse gas program.

### *4.1.11 Additional Information*

**4.1.11.1 Eligibility Criteria for Grouped Projects**

The project is not a grouped project.

**4.1.11.2 Leakage Management for AFOLU Projects**

The project includes activities conducted in the buffer zone of the project area designed to mitigate leakage. These activities are described in section 1.8 of the PD and summarized in section 3.1.7 of this report. The activities are consistent with the guidelines and requirements of the selected methodology.

### 4.1.11.3 Commercially Sensitive Information

The project proponent provided all requested information to the validator. Some contractual and financial information was deemed as commercially sensitive and excluded from public documentation, but was made available to the audit team. After reviewing this documentation, the validation team concurs that the classification this information as commercially sensitive is consistent with section 3.18.3 of the VCS Standard and the definition of commercially sensitive information established by the VCS program. The project complies with VCS requirements regarding commercially sensitive information.

### 4.1.11.4 Any Further Information

The project is a joint VCS-CCB project, and a single project document includes information regarding the project's conformance with both standards. This report pertains only to the validation of the project against the VCS standard, and does not report on assessment of the project against the CCB criteria.

## 4.2 Application of Methodology

### 4.2.1 Title and Reference

The project applies approved VCS methodology VM0007, "REDD Methodology Modules (REDD-MF)," version 1.3. The methodology is current as of the date of this report. The following modules from VM0007 were used in this project:

- VM0007 REDD Methodology Module, REDD Methodology Framework (REDD-MF), version 1.3

- CP-AB "VMD0001 Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools", version 1.0

- CP-D "VMD0002 Estimation of carbon stocks in the dead-wood pool", v1.0

- BL-UP "VMD0007 Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation", version 3.1

- LK-ASU "VMD0010 Estimation of emissions from activity shifting for avoided unplanned deforestation", version 1.0

- E-BB "VMD0013 Estimation of greenhouse gas emissions from biomass burning", version 1.0

- M-MON "VMD0015 Methods for monitoring of greenhouse gas emissions and removals" version 2.1

- X -STR "VMD0016 Methods for stratification of the project area" version 1.0

- X-UNC "VMD0017 Estimation of uncertainty for REDD project activities" version 2.0

- T-ADD "VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities", version 3.0

- T-BAR "Tool for AFOLU non-permanence risk analysis and buffer determination", version 3.1

- T-SIG CDM "Tool for testing significance of GHG emissions in A/R CDM project activities", version 1.0

This collection of modules is consistent with the requirements of table 1 of the REDD-MF framework.

### *4.2.2 Applicability*

The applicability conditions of the selected methodology are as follows:

***Land in the project area has qualified as forest at least 10 years before the project start date.***

The project proponent provided satellite images from 1996 and 1999 of the project area that were used to confirm that the project area qualified as forest more than ten years before the project start date. These images and the analysis conducted by them by the project proponent were reviewed by the audit team and used to verify the applicability of the methodology to the project area.

***The project area can include forested wetlands (such as bottomland forests, floodplain forests, mangrove forests) as long as they do not grow on peat. Peat shall be defined as organic soils with at least 65% organic matter and a minimum thickness of 50 cm3. If the project area includes a forested wetlands growing on peat (e.g. peat swamp forests), this methodology is not applicable.***

The project proponent has stated that the project area contains forested wetlands, but that they do not grow on peat, and provided studies of forests in the surrounding buffer area as evidence that peatlands are not present in the project area. No evidence to the contrary was seen during the site visit, which included field visits to the project area. The audit team found no reason to call into question the assertion that the project area does not include forests that grow on peat.

***Project proponents must be able to show control over the project area and ownership of carbon rights for the project area at the time of verification.***

The project proponent was able to show evidence of right of use as described in section 3.1.10.1 of this report.

***Baseline deforestation and baseline forest degradation in the project area fall within one or more of the following categories:***
- ***Unplanned deforestation (VCS category AUDD);***
- ***Planned deforestation (VCS category APD);***
- ***Degradation through extraction of wood for fuel (fuelwood and charcoal production) (VCS category AUDD).***

The baseline described involves transition from forest to non-forest conditions as a result of unauthorized actions by external agents, and therefore falls into the VCS category AUDD. Observations of deforestation in the area surrounding the project boundary and interviews with project proponents and government officials were consistent with this project category.

***Baselines shall be renewed every 10 years from the project start date.***
The project proponent has stated that the baseline will be renewed in July 2018.

***All land areas registered under the CDM or under any other carbon trading scheme (both voluntary and compliance-orientated) must be transparently reported and excluded from the project area. The exclusion of land in the project area from any other carbon trading scheme shall be monitored over time and reported in the monitoring reports.***

As discussed in section 3.1.10.3 and 3.1.10.4, the project does not include land registered under the CDM or any other program.

*If land is not being converted to an alternative use but will be allowed to naturally regrow (i.e. temporarily unstocked), this framework shall not be used.*

The project proponent has stated that land deforested in the project area is being converted to an alternative productive use by residents and subject to subsistence grazing and cultivation with fallow periods generally not exceeding five to six years (i.e. insufficient to achieve forest status).This land use is consistent with observations made by the audit team during the site visit.

*•Where post-deforestation land use constitutes reforestation this framework shall not be used.*

The project proponent has stated that post-deforestation land use in the project baseline is expected to be for settlements, grazing and agriculture, not reforestation. This is consistent with observations made by the audit team during the site visit.

*Leakage avoidance activities shall not include:*
- *Agricultural lands that are flooded to increase production (e.g. paddy rice);*
- *Intensifying livestock production through use of "feed-lots" and/or manure lagoons.*

The project planning documents provided do not include leakage avoidance activities of these sorts. No evidence of these activities was seen during the site visit.

*Baseline agents of deforestation shall: (i) clear the land for settlements, crop production (agriculturalist) or ranching, where such clearing for crop production or ranching does not amount to large scale industrial agriculture activities6; (ii) have no documented and uncontested legal right to deforest the land for these purposes; and (iii) are either resident in the reference region (cf. section 1 below) or immigrants. Under any other condition this framework shall not be used.*

The project proponent has stated that baseline agents of deforestation clear the land for settlements and crop production which do not amount to large scale industrial activities, have no documented and uncontested legal right to deforest the land for these purposes, and include both residents in the reference region and immigrants.  This statement is consistent with interviews conducted during the site visit and the observations of the audit team.

*It shall be demonstrated that post-deforestation land use shall not constitute reforestation.*

The project proponent has stated that post-deforestation land use in the project baseline is expected to be for settlements, grazing and agriculture, not reforestation. This is consistent with observations made by the audit team during the site visit.

*Where, pre-project, unsustainable fuelwood collection is occurring within the project boundaries modules BL-DFW and LK-DFW shall be used to determine potential leakage.*

The project proponent has stated that no illegal fuelwood collection, other than as part of the process of deforestation, is expected to occur in the project area in the baseline or with-project case. And that no evidence of illegal fuelwood collection was found during 4 months of field work on the PNCAZ inventory in 2009 and the continuous park guard observations.  The audit team reviewed records from the field work discussed and conducted interviews of park guards and community members to verify this statement. The statement is consistent with observations made by the audit team.

The audit team concludes that the project conforms to each of the selected methodology's applicability conditions.

### *4.2.3    Project Boundary*
**4.2.3.1  Spatial Boundaries**

The project proponent provided GIS files and printed maps that clearly define the spatial boundaries of the project area.  The audit team reviewed these materials to confirm that the area conforms to the requirements for spatial boundaries described in VM0007 REDD-MF Step 1(a), namely, that  the land in the project area qualifies as forest (see also section 3.2.2); the boundaries are clearly defined; the name of the project area is provided; maps are provided; geographic coordinates of each vertex are provided (in this case in the form of kml and shapefiles); the total land area is provided, and rights holders and user rights details are described.  Each of the required elements describing the boundaries of the project area is included in the PD.  The audit team confirmed their accuracy via comparison to official government maps and documents, some of which included geographic coordinates.

In addition to the project area, the methodology requires the delineation of a reference region for projecting the baseline deforestation rate.  This region encompasses 16 census districts surrounding the project area, but does not include all districts immediately adjacent to the project area.  The rationale for excluding districts is described in section 3.1.1.1 of the PD, and was verified by the audit team using interviews of the project proponents, local communities, and park guards as well as maps and digital data of the physical geography surrounding the project area.  The audit team concludes that the reference region is defined in a way that is consistent with the requirements of the BL-UP module.

Finally, delineation of a leakage belt is required by the methodology.  In the case that the population driver approach is used to define a baseline, the methodology specifies that the leakage belt shall be identical to the boundaries of the reference region.  The project has defined the leakage belt in this way, and is thus in conformance with the methodology.

**4.2.3.2  Temporal Boundaries**

The temporal boundaries of the project are described in Section 2.6.4 and 2.6.5 of this report.  In addition, SCS verified that the chosen historical reference period, monitoring periods, and fixed baselines periods are defined in the PD as required by the VCS standard and selected methodology.

**4.2.3.3  Carbon Pools**

The project includes the aboveground biomass, below ground biomass, and dead wood carbon pools.  This is consistent with the requirements of step 1(c) of the VM0007 REDD-MF methodology framework.  The harvested wood products pool was demonstrated to be insignificant, as logging is not a component of the baseline scenario.

**4.2.3.4  Sources of Emissions**

No non-carbon pool emissions sources are included in the baseline scenario.  Non-$CO_2$ emissions from biomass burning in the baseline scenario are conservatively excluded, though the monitoring plan states that, in the case project scenario burning occurs, such emissions will be accounted for if significant.

Emissions from combustion of fossil fuels and use of fertilizers have been excluded as directed by the methodology.

### 4.2.4    *Baseline Scenario*

The project  has identified it's baseline scenario in accordance with the VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities, Version 3 and VM0007 methodology module BL-UP "VMD0007 Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation", version 3.0.  The baseline scenarios considered and evidence presented in support of those scenarios are discussed in section 4.2.5 of this report, with additional details provided in section 2.4.1 of the PD.  The quantitative elements of the baseline scenario are discussed in section 4.2.6.

### 4.2.5    *Additionality*

The VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities, Version 3 was used to demonstrate the project's additionality claims.  The analysis considered five alternatives:

*Alternative 1: Continuation of deforestation activities taking place prior to CIMA's work in the region.*

Validator comments: Interviews with project proponents and government officials supported the conclusion that the continuation of pre-project deforestation activities was the most likely alternative baseline scenario.  Widespread deforestation for agriculture and ranching was obvious during the audit team's visit to the buffer area surrounding the project area, providing support for the conclusion that continuation of these activities is likely in the absence of the project.

*Alternative 2: Creation of large agricultural (biofuel) projects.*

Validator comments:  This alternative did not pass the test of sub-step 1b, as it would not be consistent with applicable laws and regulations due to the project area's status as a national park.

*Alternative 3: Creation of logging, mining or oil concessions in part or all of the project area and subsequent use of these concessions.*

Validator comments: This alternative did not pass the test of sub-step 1b, as it would not be consistent with applicable laws and regulations due to the project area's status as a national park.

*Alternative 4: Management and protection of the national park by the national government of Peru.*

Validator comments: Interviews with government officials supported the conclusion that this alternative was not plausible because the Peruvian government does not have adequate funds to manage and protect the park.

*Alternative 5: Project activities occurring without being registered as a VCS/CCBA project.*

Validator comments:  The project proponent provided confidential financial information that supported the conclusion that project activities were unlikely to be implemented in the absence of the project's registration as a VCS project.

The additionality analysis included a financial analysis based on actual expenses and a detailed financial plan for the project's operation from 2008-2011, which were reviewed by the validation team. This evidence was consistent with the conclusions of section 2.5.1 of the PD, namely that the project activity produces no financial benefits other than VCS related income and has many documented costs.

Finally, the additionality analysis included a common practice assessment as described in section 2.5.2 of the PD. This assessment evaluated the funding environment for national parks in Peru and concluded that activities as extensive as those involved in the project are not common and that funding for activities implemented by the project is not typically available. The conclusions made in the PD were consistent with interviews of government officials conducted during the site visit.

### 4.2.6    *Quantification of GHG Emission Reductions and Removals*

The project developed a model of baseline emissions in conformance with the VM0007 module BL-UP version 3.1. The population driver approach outlined in that module was employed. The general approach involves first analyzing remote sensing imagery for evidence of land use change during the historical reference period; generating a statistical model of the relationship between population change and land use change; projecting population growth over a ten year period in the reference region using equations provided by the methodology; using the projected population growth as an input to the fitted deforestation-population regression model to project the area of deforestation across the reference region; applying a spatial model to predict the location of deforestation across the reference area; allocating baseline deforestation to the project area and leakage belt based on the results of this spatial model; and estimating the carbon stock changes that result from this predicted deforestation.   The calculations made in the course of these steps are summarized in section 3.1.4-3.1.10 of the PD, and were presented in detail to the audit team in a series of spreadsheets and GIS data files. The audit team used independent review, conference calls, and in person meetings with the project proponents to verify the consistency of the calculations presented with the requirements of the methodology. Additionally, the audit team reviewed hard copy records to check for systematic data entry errors, compared a sample of spatial data files prepared by the project proponent to their source data, and compared data and equations taken from the literature with their published values. Each of the spreadsheets used to perform calculations were independently checked. The carbon stock inventory was field checked by visiting a sample of 8 locations within the project boundary and installing inventory plots using the same methods employed by the project proponent. The data collected by the audit team showed no evidence that the data reported by the project proponent was inaccurate with regard to carbon stocks. After responses to the findings listed in appendix A were resolved, the audit team determined that the baseline emissions had been quantified in conformance to the selected methodology, including the CP-AB, CP-D, BL-UP, and X-STR modules.

Project scenario emissions will be calculated in accordance with the M-MON module. At validation, *ex-ante* estimates of project scenario emissions have been prepared assuming that the project will be effective at eliminating 90% of the projected deforestation in the baseline scenario. While it is not possible to assess whether 90% effectiveness is a correct assumption, the calculations performed in the *ex-ante* projection of project scenario emissions were reviewed and found to have been made in conformance with the methodology.

Leakage emissions will be calculated using the LK-ASU module of VM0007. Application of this module requires several steps. First, a baseline carbon stock change is established for the leakage belt. This is performed in the same baseline establishment step as for the project area using the BL-UP module, and

was assessed in parallel to the project area baseline as described above.  Second, the project proponent must estimate the proportion of deforested area attributable to immigrant agents.  The project proponent used a social survey to estimate this fraction, which was validated by reviewing the survey design and data handling procedures.  Additionally, the audit team conducted community interviews to better understand social conditions in the area surrounding the project area.  Next, the proportion of available forest for deforestation outside of the leakage belt is calculated from national published statistics, and carbon stocks in the leakage belt and the area outside the belt are estimated from published data and project carbon inventory data.  These data are used to derive the statistics reported in Table 3.32 of the PD, which can be used in conjunction with monitoring data obtained via the M-MON module to calculate leakage emissions at each monitoring event leakage.  The calculations and data sources used to derive these statistics were reviewed by the audit team and found to be in conformance with the methodology.  The project proponent reports *ex-ante* estimates of leakage emissions in tables 3.33-3.34 of the PD.

Uncertainty calculations and appropriate deductions are applied by the methodology in the monitoring stage, and will use the X-UNC module.  These calculations are reported in monitoring reports, and are assessed at verification, rather than validation.

The validated baseline emissions and *ex-ante* project and leakage emissions are as follows (reprinted from Table 3.35 of the PD):

| Years | Estimated baseline emissions or removals (tCO2e) | Estimated project emissions or removals (tCO2e) | Estimated leakage emissions (tCO2e) | Risk buffer (%) | Deductions for AFOLU pooled buffer account | Estimated net GHG emission reductions or removals (tCO2e) |
|---|---|---|---|---|---|---|
| 2009 | 1,834,510 | 183,451 | 488,456 | 10% | 165,106 | 997,497 |
| 2010 | 1,960,581 | 196,058 | 522,024 | 10% | 176,452 | 1,066,047 |
| 2011 | 1,337,026 | 133,703 | 355,996 | 10% | 120,332 | 726,995 |
| 2012 | 1,612,694 | 161,269 | 429,396 | 10% | 145,143 | 876,887 |
| 2013 | 2,040,030 | 204,003 | 543,178 | 10% | 183,603 | 1,109,247 |
| 2014 | 2,709,645 | 270,965 | 721,469 | 10% | 243,868 | 1,473,343 |
| 2015 | 3,396,760 | 339,676 | 904,420 | 10% | 305,708 | 1,846,955 |
| 2016 | 4,075,363 | 407,536 | 1,085,105 | 10% | 366,783 | 2,215,939 |
| 2017 | 4,642,225 | 464,222 | 1,236,038 | 10% | 417,800 | 2,524,164 |
| 2018 | 5,362,137 | 536,214 | 1,427,721 | 10% | 482,592 | 2,915,610 |
| **Total** | 28,970,972 | 2,897,097 | 7,713,804 | | 2,607,387 | 15,752,683 |

### 4.2.7   Methodology Deviations

The project deviates from the methodology by applying the Cairns et al 1997 root biomass allometric equation instead of the root to shoot ratios prescribed by the CP-AB module.  The project proponent presented a numerical analysis that demonstrates that the deviation does not negatively affect the conservativeness of the project's GHG accounting.  The deviation applies to the criteria for measurement of a carbon stock.  The audit team determined that the deviation is consistent with the requirements for methodology deviations presented in section 3.5.1 of the VCS standard.

### 4.2.8   Monitoring Plan

The project proponent has provided a monitoring plan in Section 4.3 of the project document and supporting documents containing specific technical procedures.  All of the required data and procedures relative to ongoing monitoring of the project are described in this plan.  The plan describes the organizations and staff responsible for carrying out the monitoring, the data to be collected, plans for data storage and management, quality control procedures, and detailed technical specifications.  The monitoring procedure is appropriate to the project and methodology and is described in sufficient technical detail to allow it to be carried out consistently throughout the lifetime of the project.

## 4.3   Environmental Impact

The project does not appear to have a negative environmental impact, and is currently undergoing assessment against the CCB standard to demonstrate positive net effects on communities, biodiversity, and climate.  The project has the approval of relevant environmental authorities in Peru.

## 4.4   Comments by stakeholders

Section 7 of the project document summarizes stakeholder communications methods and comments. The comments communicated to the audit team during site visits were generally positive and supportive of the project.  The project is currently undergoing validation against the CCB standards, which includes a detailed review of stakeholder input, and will further serve to facilitate ongoing consultations with stakeholders throughout the project lifetime.

## 5   NON-PERMANANCE RISK ASSESSMENT

The project developer described the non permanence risk assessment process and summarized supporting data in a document titled "PNCAZ Non-Permanence Risk Report."  The document outlines a risk assessment conducted using the VCA AFOLU Non-Permanence Risk Tool.  SCS reviewed the risk scores assigned and the supporting evidence presented.  During field interviews, SCS inquired about risk elements, and as relevant, checked any calculations made.  SCS determined that the risk score assigned by the project proponent is appropriate and in conformance with the tool.  The risk score assigned and evidence reviewed is summarized below:

### *5.1.1   Internal Risk*

| Project Management | | |
|---|---|---|
| Risk Factor | Risk Factor and/or Mitigation Description | Risk Rating |
| a) | The PNCAZ avoided deforestation project does not involve planting making this criterion inapplicable. | NA |
| b) | The relationship between population growth and deforestation in concert with high levels of immigration into the area threatens the majority of the project area. In addition, added threats from logging and mining concessions result in the necessitation of protection for the entirety of the project area. | 2 |
| c) | SCS was able to review the CV's of and interview each member of the management team and confirm the skills and expertise necessary to implement the project activities. Moreover, interviews with government officials responsible for park management contracts reinforced our assessment of the management team. | NA |
| d) | During visits to the project area, SCS was able to confirm the presence of 18 control posts encircling the project area. In addition, records of regular patrols by park guards were provided by the project proponent confirming the full time presence of | 2 |

| | | |
|---|---|---|
| | the management team in the area. | |
| e) | The project provided contracts with individuals with a wealth of carbon project experience. These individuals have successfully validated and verified a number of projects, including other projects in Peru. | −2 |
| f) | The validation team reviewed documentation describing the adaptive management plan employed by the project. In addition, the mitigation process was fully explained by the project proponents during the site visit. | −2 |
| **Total Project Management (PM) [as applicable, (a + b + c + d + e + f)]** <br> Total may be less than zero. | | **0** |

| Financial Viability | | |
|---|---|---|
| Risk Factor | Risk Factor and/or Mitigation Description | Risk Rating |
| a) | The project proponents provided SCS with a detailed analysis of the current and project cash flow for the project. SCS was able to confirm that the estimates of revenue from carbon sales were both conservative and reasonable. | NA |
| b) | | NA |
| c) | | NA |
| d) | | 0 |
| e) | SCS was provided the financial plan for the project. This documentation included a complete list of funding agents and the relative contributions. Moreover, the project proponents provided the signed agreements between each agent and CIMA. | NA |
| f) | | NA |
| g) | | NA |
| h) | | 0 |
| i) | SCS was provided the financial plan for the project. This documentation included a complete list of funding agents and the relative contributions. Moreover, the project proponents provided the signed agreements between each agent and CIMA. | NA |
| **Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)]** <br> Total may not be less than zero. | | **0** |

| Opportunity Cost |
|---|
| |

| Risk Factor | Risk Factor and/or Mitigation Description | Risk Rating |
|---|---|---|
| a) | Through interviews on site and reviews of the project documentation, SCS was able to determine that the baseline activities are subsistence driven and the project is generating net positive community impacts. | NA |
| b) | | NA |
| c) | | NA |
| d) | | 0 |
| e) | | NA |
| f) | Through interviews on site and reviews of the project documentation, SCS was able to determine that the baseline activities are subsistence driven and the project is generating net positive community impacts. | NA |
| g) | The validation team was able to confirm that CIMA is a non-profit organization created to manage PNCAZ. | -2 |
| h) | CIMA has a legally binding 20 year contract with SERNANP to protect the carbon stocks throughout the crediting period. | -2 |
| i) | | NA |
| **Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g + h or i)]** <br> Total may not be less than 0. | | **[0-2-2=-4],** <br><br> **0** |

| Project Longevity | | |
|---|---|---|
| a) | Interviews with government officials confirmed the ability to renew the management contract in perpetuity. Moreover, the project proponent provided guidance from the VCSA stating the ability to renew contracts is sufficient for meeting this criterion. SCS is in agreement that the 60 years is a conservative estimate of the project longevity. | NA |
| b) | | $=30-(60/2)= 0$ |
| **Total Project Longevity (PL)** <br> May not be less than zero | | **0** |

| Internal Risk | |
|---|---|
| **Total Internal Risk (PM + FV + OC + PL) (0+0+0+0)** <br><br> Total may not be less than zero. | **0** |

### *5.1.2 External Risk*

| | Land Ownership and Resource Access/Use Rights | |
|---|---|---|
| **Risk Factor** | **Risk Factor and/or Mitigation Description** | **Risk Rating** |
| a) | The project area is a national park and is owned by the national government. The contract between CIMA and SERNANP gives clears carbon rights to CIMA. | NA |
| b) | | 2 |
| c) | CIMA has signed conservation agreements with all individuals who had land titles when the park was created. | NA |
| d) | Only one instance exists in the project area. A 220 hectare cattle ranch was found within the park boundary prior to the start of the project; however, the rancher does not have title to the land. The ranch is deforested in both the baseline and the project, thus having no effect on the carbon accounting. | 5 |
| e) | The PNCAZ is a national park with laws designed to protect the carbon stocks in perpetuity. The contract between CIMA and SERNANP reinforces this protection. | -2 |
| f) | INRENA (now SERNANP) has signed a contract with the lone park dweller allowing him to stay in the area, while agreeing not to increase the size of his operation. | -2 |
| **Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f)] = (2+5-2-2)** Total may not be less than zero. | | **3** |

| | Community Engagement | |
|---|---|---|
| **Risk Factor** | **Risk Factor and/or Mitigation Description** | **Risk Rating** |
| a) | SCS was able to confirm that no households exist within the limits of the park boundaries. In addition, the nature of the project as a national park makes settlement within the limits of the park illegal. | NA |
| b) | CIMA has held community meetings and continues to consult with individuals throughout the project zone. The validation team was able to confirm these consultations during the site visit. | NA |
| c) | SCS confirmed through interviews and document review that the project generates net positive impacts on the communities. | -5 |
| **Total Community Engagement (CE) [where applicable, (a+b+c)]** | | **-5** |

| Total may be less than zero. | |
|---|---|

| Political Risk | | |
|---|---|---|
| Risk Factor | Risk Factor and/or Mitigation Description | Risk Rating |
| a) | The validation team was able to confirm, through independent calculations, a governance score of -0.315, averaged across the six indicators of the World Bank Institute's Worldwide Governance Indicators. | NA |
| b) | | NA |
| c) | | 2 |
| d) | | NA |
| e) | | NA |
| f) | SCS confirmed Peru's designated National Authority under CDM, MINAM, and at least one registered CDM reforestation project. The project, in Piura Peru, was registered on November 16, 2009. | -2 |
| **Total Political (PC) [as applicable ((a, b, c, d or e) + f)] (2-2)** Total may not be less than zero. | | **0** |

| External Risk | |
|---|---|
| **Total External Risk (LT + CE + PC) (3-5+0)=-2** Total may not be less than zero. | **0** |

### 5.1.3   Natural Risk

With regard to natural risks, the project developer conducted a likelihood and significance assessment of the risk of landslides, geological risk, forest fires, droughts, and extreme weather. Third party documentary evidence was presented for each of these risk elements and reviewed by the audit team. A risk rating of 3 was assigned to natural risks.

| Extreme Weather | |
|---|---|
| **Significance** | Minor (5% to less than 25% loss of carbon stocks) |
| **Likelihood** | Every 10 to less than 25 years |
| **Score (LS)** | 2 |
| **Mitigation** | None |
| Geologic | |

| Significance | Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event) |
|---|---|
| **Likelihood** | Every 10 to less than 25 years |
| **Score (LS)** | 1 |
| **Mitigation** | None |
| Fire | |
| **Significance** | Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event) |
| **Likelihood** | Every 50 to less than 100 years |
| **Score (LS)** | 0 |
| **Mitigation** | None |
| Disease and Pests | |
| **Significance** | Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event) |
| **Likelihood** | Every 50 to less than 100 years |
| **Score (LS)** | 0 |
| **Mitigation** | None |

| Score for each natural risk applicable to the project (Determined by (LS × M) | |
|---|---|
| Fire (F) | 0 |
| Pest and Disease Outbreaks (PD) | 0 |
| Extreme Weather (W) | 2 |
| Geological Risk (G) | 1 |
| Other natural risk (ON) | NA |
| **Total Natural Risk (as applicable, F + PD + W + G + ON)** | **3** |

### *5.1.4 Overall Risk Rating*

| Risk Category | Rating |
|---|---|
| a)   Internal Risk | 0 |
| b)   External Risk | 0 |
| c)   Natural Risk | 3 |
| **Overall Risk Rating (a + b + c)** | **3** |

Per the Tool, the project will use the minimum risk rating of 10.

## 6  VALIDATION CONCLUSION

The project conforms to the validation criteria for projects, as set out in the VCS Version 3 guidance documents referenced in Section 1.2 of this report. No qualifications or limitations exist with respect to the validation opinion reached by the audit team. In the opinion of the audit team, the project is likely to achieve the estimated GHG emission reductions and removals that are described in the PD.

## APPENDIX A: LIST OF FINDINGS

**NCR 2012.1 dated 11/02/2012**

**Standard Reference**: VCS Standard v3.3 Section 3.1.3

**Document Reference**: NA

**Finding**: The VCS standard requires that projects apply methodologies eligible under the VCS Program. The project currently applies version 1.2 of VM0007. According to the VCS website for that methodology "As of 30 September 2012, VM0007, v1.1 and v1.2 are no longer valid. Projects that have not completed validation by 30 September can no longer apply either version." The project must apply an approved version of VM0007 or another approved methodology.

**Client Response**: The updated version of methodology VM0007 was released by the VCS in November 2012 and is now applied to the project. The PD and all supporting calculations have been updated accordingly.

**Auditor Response**: The project now uses an approved and up to date methodology. The project document has been reviewed against the updated methodology and no additional non conformities have been identified.

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

**NCR 2012.2 dated 11/02/2012**

**Standard Reference**: VCS Standard v3.3 Sections 3.1.4, 4.1.6

**Document Reference**: Cordillera Azul National Park REDD Project PDD

**Finding**: The VCS Standard requires that, where projects apply methodologies that permit the project proponent its own choice of model, such model shall meet with the requirements set out in Section 4.1.6(2)-(6) and it shall be demonstrated at validation that the model is appropriate to the project circumstances. The project has applied a model chosen by the project proponents for projecting the spatial location of deforestation and for converting measurements made on individual trees to estimates of biomass (allometric equations). For each model, please demonstrate that the selected models meet the requirements of section 4.1.6(2)-(6) of the VCS standard as required by section 3.1.4 of the VCS standard. This demonstration should incorporate a discussion of how model uncertainty is assessed, estimated, and discounted as described by sections 4.1.6 (4)-(6) of the VCS standard. Such assessment and discounting is not currently reflected in the project documentation.

**Client Response**: Accounting of uncertainty currently follows all methodology requirements. Further details on the spatial model and allometric equation, demonstrating the appropriateness of their application in the context of VCS 4.1.6, are provided below.

The model employed for projecting the location of deforestation, Idrisi's Land Change Modeler (LCM) using the multi-layer perceptron algorithm (MLP) meets the requirements of section 4.1.6(2)-(6) of the VCS standard as required by section 3.1.4 of the VCS standard as elaborated below:

4.1.6.2 Model parameters tested for inclusion into the model were based upon feedback from local experts on regional drivers of land cover change, as well as from regional and global studies that identify important driver variables. LCM was developed using case studies in South America, and multiple cases have demonstrated the host of important variable to consider for inclusion. Further these variables are tested against actual change (ground truthed) within the modeling process through a separation of modeling calibration and confirmation intervals which serves to identify the variables with the most predictive capacity. Each model run is separately evaluated for performance so that the important driving factors as measured by final predictive capacity are incorporated in the final model.

4.1.6.3 The model has been reviewed and tested both in peer review and by competent organizations. In a comparative study of the predictive accuracy of land-use and land-cover change models, Eastman et al (2005) evaluated multiple methods applied to the generation of transition potentials including the Weights of Evidence, empirical probabilities, logistic regression, and the Multi-Layer Perceptron neural network. The main conclusion of that work is that the Multi-Layer Perceptron (MLP) has better overall predictive accuracy compared to other approaches. This was also confirmed in a study by Kim (2010) where MLP had the highest predictive accuracy compared to logistic regression and empirical frequency based models.

4.1.6.4-6 Model uncertainty is incorporated through the modeling process. Through the evaluation of multiple model runs for predictive accuracy using the Figure of Merit (FOM) measure, the best possible model is chosen. The Figure of Merit not only ensures that the most accurate model is chosen, it also sets the minimum acceptable accuracy of the model. By meeting this threshold, the question of

uncertainty is addressed (VCS methodologies address uncertainty either by quantifying and discounting it, or by setting minimum thresholds for allowable, and un-discounted, uncertainty).  In a similar fashion to setting the minimum accuracy for classification procedure, and then accepting the classification output when it meets this threshold, if the FOM threshold is met no further uncertainty deductions are required.

Eastman J R, Van Fossen M E, and Solorzano L A 2005 Transition potential modeling for land

cover change. In Maguire D J, Batty, and Goodchild M F (eds), GIS, Spatial Analysis and

Modeling. Redlands CA, ESRI Press: 357–86.

Kim, O S. 2010.  An Assessment of Deforestation Models for Reducing Emissions from Deforestation and Forest Degradation (REDD). Transactions in GIS. 14(5): 631-654.

The Chave et al 2005 allometric equation used to estimate aboveground biomass as a function of DBH was produced from a peer-reviewed and published research effort involving a global dataset of destructively-sampled tropical trees. The application of the equation to the project was validated (documented in PNCAZ 2009 forest inventory results) in accordance with methodology VM0007 module CP-AB, ensuring that it does not produce non-conservative results in the project context. Beyond this equation validation, methodology VM0007 (module X-UNC) requires no further assessment (or discounting) of uncertainty from regression error.  In an email from Carolyn Ching, VCS, from Nov 26 2012,

"For the allometric equation, I don't think it is necessary that the project proponent analyze the statistical uncertainty of the equation. Rather, it is important that the project proponent demonstrate that this equation was derived in a manner consistent with these requirements."

**Auditor Response**: The project proponent has provided evidence that the models selected meet the requirements of each element of the noted section of the VCS standard.  An email from Carolyn Ching of the VCSA has been provided indicating that the standard does not require assessment of uncertainty for allometric models.

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

**NCR 2012.3 dated 11/02/2012**

**Standard Reference**: VCS Standard v3.3 Sections 3.1.5; 4.1.7(1); 4.5.6; 4.1.4

**Document Reference**: Cordillera Azul National Park REDD Project PDD (various locations)

**Finding**: The VCS standard states that where projects apply methodologies that permit the project proponent its own choice of third party default factor or standard to ascertain GHG emission data and any supporting data for establishing baseline scenarios and demonstrating additionality, such default factor or standard shall meet with the requirements set out in Section 4.1.7(1). The project has chosen many standards and factors that are used in estimating the carbon stock changes involved under the baseline scenario, including wood density estimates, carbon fractions and post deforestation carbon stock estimates. Please provide evidence that each of the selected values meets the criteria referenced by the standard. In particular, please demonstrate that all parameters that are uncertain or that result from sampling have undergone uncertainty assessment as required by section 4.1.4 of the VCS standard. Such assessment and discounting is not currently reflected in project documentation.

**Client Response**: Referenced default parameters, including wood density, carbon fraction of biomass, and post-deforestation carbon stock values are all sourced from peer-reviewed, published studies or from analysis of site-specific measurements collected in the field. "Peer-reviewed scientific literature" and "empirical data" are specifically noted as appropriate data sources in VCS 4.5.6 (referenced in 4.1.7). Following methodological guidance in choice of data, in all cases, the most recent and site-specific values available were chosen to employ in project accounting. Beyond this, it is impractical to access raw source data from these studies, or directly assess their measurement/analysis procedures, and it is assumed that the scientific peer review process is robust.

Mean (species level) Amazonian palm specific gravity is sourced from Baker et al. 2004.

Baker TR., Phillips OL., Malhi Y., Almeida S., Arroyo L., Di Fiore A., Killeen TJ., Laurance SG., Laurance, WF., Lewis SL., Lloyd J., Monteagudo A., Neill DA., Patiño S., Pitman NC., Silva JN., Vásquez Martínez R. 2004. Variation in wood density determines spatial patterns in Amazonian forest biomass. Global Change Biology 10:545-562.

Wood densities for use in validation of the allometric equation are sourced from Chave et al. 2006

J. Chave, H. Muller-Landau, T. Baker, T. Easdale, H. ter Steege, CO Webb. 2006. Regional and phylogenetic variation of wood density across 2,456 neotropical tree species. Ecological Applications 16, 2356-2367.

Post-deforestation carbon stock estimates are sourced from Lapeyre et al 2004

Lapeyre, T., Alegre, J. and L. Arevalo. 2004. Determination of carbon reserves of the aerial biomass in different land use systems in San Martin, Peru. Ecologia Aplicada. vol.3, no.1-2, p.35-44.

Carbon fraction of dry matter is sourced from IPCC 2006GL, as specifically permitted by methodology VM0007 module CP-AB "Values from the literature (e.g. IPCC 2006 INV GLs AFOLU Chapter 4 Table 4.3) shall be used if available, otherwise default value of 0.47 t C t-1 d.m. can be used"

Dead wood density estimates were developed from measurements from dead wood samples, 30 from each decomposition class, collected in the project area. As detailed in the PNCAZ 2009 forest inventory report, density of dead wood was determined through sampling and laboratory analysis as follows. Discs were collected in the field and decomposition class and green volume determined as per standard protocols (Appendix 2). Discs were then transferred to a laboratory (Laboratorio de Análisis de Suelos del Instituto Nacional de Investigación Agraria, INIA) in Tarapoto and oven-dried at 80°C, conducting continuous weight measurements until reaching constant weight. The resulting dry weight was recorded and used to calculate dead wood density as oven-dry weight (g) / green volume (cm3) for each sample.

For all of the above default values, judged to be appropriate in the context of the project, methodology VM0007 (module X-UNC) requires no assessment or discounting of uncertainty.

**Auditor Response**: The project proponent provided evidence that each of the requirements of section 4.1.7 has been adhered to in selecting third party data. Copies of the relevant literature for each factor have been provided.

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

---

**NCR 2012.4 dated 11/02/2012**

**Standard Reference**: VCS Standard v3.3 Section 3.1.9

**Document Reference**: Cordillera Azul National Park REDD Project PDD Section 1.7

**Finding**: The VCS standard has been revised as of version 3.3 to identify project scale as "Large Projects" or "Projects" instead of "Mega Projects" and "Projects," with a revised threshold for determining the project scale and materiality of 300,000 tonnes of cO2e poer year. The PD must be updated to classify the project as is appropriate according to the latest version of the VCS standard.

**Client Response**: The PD has been revised to classify the project as a "Large Project" per current VCS guidance.

**Auditor Response**: The project description has been updated to conform to the revisions to the VCS standard.

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

**NIR 2012.5 dated 11/02/2012**

**Standard Reference**: VCS Standard v3.3 section 3.10.3

**Document Reference**: Cordillera Azul National Park REDD Project PDD Section 3.1.1

**Finding**: The VCS standard requires that project location for AFOLU projects be specified using geodetic polygons to delineate the geographic area of each AFOLU project activity and provided in a KML file. Please provide a KML file meeting these requirements. The KML file should include the project area as defined by section 1.1.2 of the BL-UP module, and in accordance with that module should only include forested areas at the project start date.

**Client Response**: A kml of the project areas, as defined in section 1.1.2 in the BL-UP, is provided.

**Auditor Response**: An appropriately formatted kml file has been provided.

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

**NCR 2012.6 dated 11/02/2012**

**Standard Reference**: VM0007 v1.2 Section 3

**Document Reference**: Cordillera Azul National Park REDD Project PDD Section 2.1

**Finding**: Table 1 of VM0007 indicates that the E-BB module is mandatory, and that VCS requirements and the tool T-SIG shall be used to justify the omission of carbon pools and emission sources. The PDD does not describe the application of the T-SIG tool to justify the exclusion of biomass burning from the project. If this emissions source is to be excluded, this tool must be applied to demonstrate that exclusion is appropriate. Note that, according to Table 3 of VM0007 REDD-MF "Non-CO2 gases emitted from woody biomass burning. It is conservative to exclude in the baseline but must be included in the project case if fire occurs." Although planned burning is not part of the project activities, in the event that unplanned burning occurs in the project area, either due to natural fires or failure of the project activities to prevent all land clearing that involves burning, these emissions must be included in project accounting if significant.

**Client Response**: Emissions from biomass burning are conservatively ignored in the baseline, following guidance in methodology VM0007 module E-BB, which states that "Inclusion [of emissions of CO2, N2O and CH4 from biomass burning] in the baseline is always optional." The monitoring plan has been expanded to provide guidance on remote monitoring of incidence of fire, and now specifies that where burn areas are identified, T-SIG will be applied ex post, and where emissions are deemed significant will be included in project accounting. Parameters employed in E-BB are now included among the parameter tables.

**Auditor Response**: The PD and monitoring plan have been revised to include non CO2 emissions from biomass burning in the case that they are significant in the project scenario.

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

**NIR 2012.7 dated 11/02/2012**

**Standard Reference**: VM0007 REDD-MF v1.2 Step 3; M-MON

**Document Reference**: Cordillera Azul National Park REDD Project PDD

**Finding**: The monitoring plan, as provided in section 4.3 of the project documentation was found to have insufficient detail to ensure monitoring is conducted in a consistent way throughout the project lifetime. For example, actual project monitoring includes several masked areas, as described in appendix 5, yet the procedure for determining which areas to mask is not described in the monitoring report. Similarly, the actual algorithms to be applied for geometric and radiometric correction, classification, and post classification analysis were not clear. The M-MON module states that the same methods of remote sensing data processing should be used for the entire period for which the baseline is fixed. The monitoring plan, as provided in the PD, describes the monitoring procedures in too general of terms to ensure that consistent methods are used throughout the fixed baseline period. Please update the monitoring plan to include a more detailed technical description of the monitoring tasks. Such a description should consider all of the information listed in section 5.3 of the M-MON module that is relevant at the planning stage as well as each of the data and parameters listed in section 4.2 of the PD (see also finding 14), and should allow a qualified professional to conduct project monitoring in a way that is consistent with previous monitoring in the event that staff who have been involved in project monitoring thus far are no longer available.

**Client Response**: The monitoring plan, section 4.3, has been expanded to provide more specific and detailed guidance on the remote sensing component of project monitoring.

**Auditor Response**: The monitoring plan now contains an appropriate level of detail with regard to remote sensing.

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

**NIR 2012.8 dated 11/02/2012**

**Standard Reference**: VT0001 Section 2.2.2

**Document Reference**: Cordillera Azul National Park REDD Project PDD Section 2.4.1

**Finding**: The VCS Tool for Demonstration and Assessment of Additionality in AFOLU Project Activities requires that "If an alternative does not comply with all mandatory applicable legislation and regulations then show that, based on an examination of current practice in the region in which the mandatory law or regulation applies, those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area." Alternative 1, which is selected as the most likely land use in the absence of the project, does not clearly state whether baseline deforestation activities are consistent with the laws, but rather states "either these activities were considered legal or the laws were not being enforced." Please demonstrate that these actions were considered legal or provide a demonstration that non-compliance with legal requirements is widespread as defined by the tool (i.e., prevalent on at least 30% of the area of the smallest administrative unit that encompasses the project area).

**Client Response**: Lack of enforcement is demonstrated for two conservation areas that are in close proximity to the project area (documented in accompanying analysis). These areas are municipal conservation areas (ACM: Las areas de coservacion municipal) which are a component of the National System of Protected Areas-SINANPE- and for this analysis serve as proxies of observable non-enforcement. In each the total deforestation exceeds 30%. It should be noted that this is only observable non-enforcement, i.e. non-enforcement can only be "observed" once areas are deforested, however clearly non-enforcement is at play prior to deforestation, and hence covers a much broader area than that demonstrated here.

In an interview with federal government representatives, SCS' auditors were told that the regional governments are responsible for enforcing legislation. However, the regional governments' resources are severely strained, especially given the rapid, large influx of immigrants. There is currently insufficient capacity to ensure awareness of and adherence to national, regional and local laws in the buffer zone. National government officials commented that even the San Martin regional government, known to be one of the best and most efficient in the country, has enormous problems enforcing laws in remote regions The government representative stated that without the project, land-use zoning and tenure processes would be limited or nonexistent and illegal activities would seldom be reported to the correct law enforcement authorities by community members.

The information provided in this interview substantiates the project's assertion that laws are not adequately enforced on 100% of the smallest political units covering the project, in this case the four regions, and that the illegal activities included in the baseline would in fact occur. As the immigration frontier moves closer to the project, the regional governments' resources will only be more strained.

**Auditor Response**: The new analysis, combined with information collected in interviews during the site visit provides sufficient evidence that lack of enforcement is widespread.

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

**NIR 2012.9 dated 11/02/2012**

**Standard Reference**: BL-UP Step 2.2.1(A)

**Document Reference**: Cordillera Azul National Park REDD Project PDD Section 3.1.5

**Finding**: The methodology BL-UP Step 2.2.1(A) states "Population in each census unit of the RRD will be projected using the most recent census date as the starting point. Official population projections will be used preferentially. Where not provided at the scale of individual population census units composing the RRD, higher level official population projections (e.g. national) can be distributed among population census units in proportion to population correlates/indicators (e.g. school matriculations, households). Where official population projections are not available, population growth rate shall be calculated from population data from 2 or more census dates in a period not exceeding 20 years prior to the project start date"

The document "Peru: Estimaciones y proyecciones de poblacion 1950-2050 (INEI 2001)," provided as supporting evidence to the audit team, includes national level projections of population through 2050. Similarly, the link http://www.inei.gob.pe/biblioineipub/bancopub/Est/Lib0842/index.htm, provided in the PD, includes district level projections through 2015. Please justify the use of projections conducted by project proponent instead of these projections conducted by the Instituto Nacional de Estadistica e Informatica. The justification should consider the methodology's stated preference for the use of official projections and the methodology's suggestion of distributing higher level projections in proportion to population correlates.

**Client Response**: A detailed response is provided in the accompanying document "PNCAZ response NCRs 9_10"

The following serves to justify the approach for projecting population in the baseline and is a consolidated response to NCRs 9 and 10.

The INEI population projections referenced were not used due to questions regarding their reliability, particularly related to incorporating (1) older and out-dated trends, (2) poor-fitting models (i.e. linear where periodic rates are clearly increasing) and (3) the assumption in projections that relative distribution of population at the province/district level is fixed (i.e. not capturing immigration/emigration dynamics). There is widespread recognition of the errors in INEI historical projections, especially at the district level (which is fundamental for the baseline approach), including from within the institution. The margin of error reported in 2004 for population projections ranged from 30-70 %, and was substantial enough that many districts were underfunded to provide services to their actual populations (funds are allocated based on INEI population projections). [1] INEI has acknowledged publicly that there were large errors with its projections[2].

An assumption in the INEI projections is that the distribution of population among provinces,

---

[1] INEI reconoce errores en proyecciones (2004): http://peru21.pe/noticia/68975/inei-reconoce-que-cifras-oficiales-sobre-poblacion-son-erroneas
[2] INEI reconoce errores en proyecciones (2004): http://peru21.pe/noticia/68975/inei-reconoce-que-cifras-oficiales-sobre-poblacion-son-erroneas

districts, etc., is fixed, meaning that population was projected at the national level then disaggregated among the sub-units. This is especially problematic in the active agricultural frontier surrounding the project area where population growth is driven in large part by immigration. The disaggregation approach thereby fails to capture strong regional variability in growth patterns. Although INEI has recognized this, and they have stated that more nuanced approaches may yield better results, they cite constraints of time and budget and that projections should be considered "very approximate"[3]

*"…para realizar las proyecciones de población de áreas menores a corto y mediano plazo [i.e. <15 years], con las limitaciones de tiempo, presupuesto e incluso, nivel de desagregación de la información, estos métodos pueden arrojar en general, resultados bastante aproximados. " (Metodologia ,Section 1.2)*

INEI also specifically recognizes that the disaggregation approach is not sufficiently reliable and that instability and variability of internal migration is not captured even in the medium term[4]

*"Metodología que no ha podido ser replicada al nivel de las jurisdicciones más elementales, provincias y distritos, por cuanto la información no es suficientemente confiable y la inestabilidad de la migración interna no admite la formulación de hipótesis a mediano plazo" (Metodologia, Introduction p3)*

For districts in the project reference region, the table below compares 2005 projections (INEI 2002 *Estimaciones y proyecciones de Poblacion 1990-2005* [5]), based on census data from 1972, 1981 and 1993, and other data sources from 2000, compared to actual population census data from 2005. Eight out of sixteen districts had a difference in sign of population change between the actuals and projections, and the remaining district projections had error ranging up to 99% (average 54%).

| District | estimated 2000 | projected 2005 | actual census 2005 | actual change 2000-2005 | projected change 2000-2005 | % error change 2000-2005 |
|---|---|---|---|---|---|---|
| Alto Biavo | 4,645 | 4,905 | 5396 | 751 | 260 | 65% |
| Bajo Biavo | 4,281 | 4,559 | 8594 | 4313 | 278 | 94% |
| CAMPANILLA | 12,194 | 13,910 | 7526 | -4668 | 1,716 | difference in sign |
| Hullaga | 2266 | 2256 | 2912 | 646 | -10 | difference in sign |
| NUEVO PROGRESO | 11,303 | 11,680 | 9569 | -1734 | 377 | difference in sign |
| PAJARILLO | 4,703 | 5,074 | 5072 | 369 | 371 | 1% |
| SAN CRISTOBAL | 2,914 | 3,230 | 1240 | -1674 | 316 | difference in sign |
| SHAMBOYACU | 3,006 | 3,122 | 5637 | 2631 | 116 | 96% |
| TINGO DE PONASA | 2,739 | 2,756 | 4153 | 1414 | 17 | 99% |
| TRES UNIDOS | 3,109 | 3,239 | 3335 | 226 | 130 | 42% |
| chazuta | 11,225 | 11,627 | 9563 | -1662 | 402 | difference in sign |
| Contamana | 20,490 | 21,844 | 21873 | 1383 | 1,354 | 2% |

[3] http://www.inei.gob.pe/biblioineipub/bancopub/Est/Lib0842/index.htm
[4] http://www.inei.gob.pe/biblioineipub/bancopub/Est/Lib0842/index.htm
[5] http://www.inei.gob.pe/biblioineipub/bancopub/Est/Lib0467/Libro.pdf

| HUIMBAYOC | 8,311 | 8,849 | 4539 | -3772 | 538 | difference in sign |
|---|---|---|---|---|---|---|
| INAHUAYA | 2,122 | 2,457 | 2120 | -2 | 335 | difference in sign |
| Pampa Hermosa | 4,424 | 4,834 | 5067 | 643 | 410 | 36% |
| Vargas Guerra | 9,250 | 10,069 | 8431 | -819 | 819 | difference in sign |

Looking specifically at some of the districts for which the project baseline modeled exponential population change, it is clear that the linear projections of INEI ignore historical evidence of increasing periodic rates.
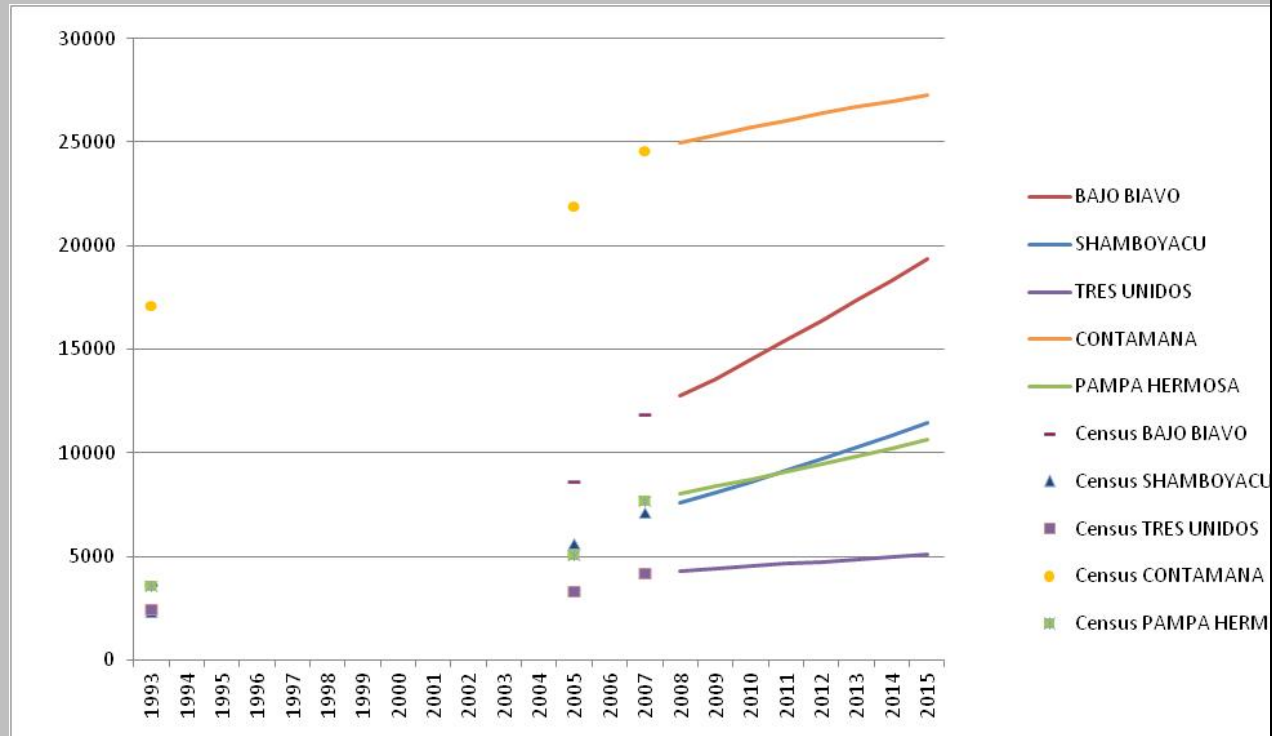


Figure. Years on x axis, district population on y axis. Census data from 1993, 2005 and 2007. INEI (2007) population projections from 2008-2015.

By comparison, the population modeling approach employed in the project baseline applied exponential rates, where justified, and models population at the district level (a "ground up" or aggregative approach), implicitly incorporating changing distribution of population as is expected in an area subject to high immigration rates.

Also, unlike the INEI projections, the population growth models used in the project baseline are based on more recent population trends, which is essential to capture population trends in areas with highly volatile rates. By comparison, the INEI projections are more heavily weighted to past trends no longer in play (e.g. the 2001-2005 projections published by INEI in 2002 were based on census data stretching back to 1972).

INEI census dates on which projections for the project baseline period could be based are 1993, 2005 and 2007 (the methodology module BL-UP requires that "population growth rate shall be calculated from population data from 2 or more census dates in a period not exceeding 20 years prior to the project start date"; i.e. not prior to 1989). The use of the interval from 2005 to 2007 is a more reliable reflection of near term population trends in this growing region with an active agricultural frontier.

In the mid-2000's, significant improvements were made to the Marginal highway which runs north and south along the Huallaga River. While the road had been constructed much earlier, it had not been paved and was not conducive to speedy or long travel. Paving of the road and improving bridges along the river opened this area to significant growth and greatly altered the speed and flow of immigration. Evidence of the improvements and the anticipated resulting changes in communities is presented in the Chemonics International document.

**Auditor Response**: The project proponent has provided adequate evidence that the official population projections are not believed to be reliable, including evidence of public acknowledgement of large errors in the projections by the agency that produced them. The projections currently described in the project description meet the requirements of the methodology.

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

---

**NIR 2012.10 dated 11/02/2012**

**Standard Reference**: BL-UP Step 2.2.1(A)

**Document Reference**: Cordillera Azul National Park REDD Project PDD Section 3.1.5; Appendix 9 Worksheet "Projections pop defor" tab

**Finding**: The population projections calculated in cells H5:R20 of the "Projections pop defor" worksheet are based on only the population data from years 2005 and 2007 and do not incorporate the 1993 data that was used to establish that population growth rates had increased in some districts across three census periods. That is, in the nomenclature of equation (11) of BL-UP, t2=2007 and t1=2005. Please justify the use of t1 = 2005 rather than t1=1993, considering the VCS principals of accuracy and conservativeness. Please clarify how basing the population projections on the growth rate observed in the two year period from 2005 to 2007 is more accurate or conservative than incorporating a growth rate calculated over the entire period of data analyzed.

**Client Response**: A detailed response is provided in the accompanying document "PNCAZ response NCRs 9_10" <See previous finding>

**Auditor Response**: The project proponent demonstrated that there have been significant improvements in infrastructure surrounding the project area during the time period of the analysis, making the later range of dates more accurate for projecting population growth than a range that includes the time period prior to the infrastructure improvements.

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

**NCR 2012.11 dated 11/02/2012**

**Standard Reference**: BL-UP Step 4.2.1

**Document Reference**: Appendix 9 worksheet

**Finding**: BLUP Section 4.2.1 page 32 states "It is conservatively assumed that parameters $CBB\_tree,i$ $CSOC,i$ and $CDW,i$ are equal to zero (i.e. that no emissions take place from these pools in the baseline)." However, the carbon stocks reported in the 'carbon stock estimates' sheet of appendix 9 (from which $CBSL,i$ is calculated in the 'baseline' sheet of appendix 9) include these pools.   The calculations of baseline emissions must be conducted in accordance with all guidance provided by the methodology. Note that these pools are those for which the VCSA has issued guidance requiring the introduction of decay models in future revisions of the methodology.  As such, this methodology language is likely to change in future revisions of the BL-UP module.  This finding will be revisited when a new methodology revision is available, and if the language referenced here no longer applies the NCR will be closed.

**Client Response**: The updated version of methodology VM0007 was released by the VCS in November 2012 and is now applied to the project. The PD and all supporting calculations have been updated accordingly, including revised treatment of temporal component to emissions from belowground biomass and dead wood pools. The referenced text "It is conservatively assumed…" has been stricken from the current version of the methodology module.

**Auditor Response**: The language referenced in the finding no longer appears in the revised methodology.

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

**NIR 2012.12 dated 11/02/2012**

**Standard Reference**: VCS Standard section 3.5; CP-AB page 16

**Document Reference**: Forest biomass carbon inventory of the Parque Nacional Cordillera Azul (PNCAZ)

**Finding**: The use of the Cairns belowground biomass equation instead of the root to shoot ratio described by the CP-AB module constitutes a methodology deviation. Please justify the selection of the Cairns et al belowground biomass equation over the root to shoot ratios provided by the methodology, explaining how the deviation does not negatively impact the conservativeness of the quantification of GHG emission reductions or removals, except where it results in increased accuracy of such quantification as specified by section 3.5.1 of the VCS standard.

**Client Response**: The following text specifying use of the Cairns et al equation as a methodology deviation has been added to the PD Section 2.6 (an accompanying spreadsheet documents that use of the Cairns equation does not introduce non-conservative results): "Note that rather than using a constant root to shoot ratio to estimate belowground biomass (as prescribed in methodology VM0007 module CP-AB), belowground biomass was estimated using an allometric equation, where the relationship varies continuously with aboveground biomass.

Root biomass was estimated applying the equation developed by Cairns et al.1997,

Cairns, M. A., S. Brown, E. H. Helmer, and G. A. Baumgardner. 1997. Root biomass allocation in the world's upland forests. Oecologia 111, 1-11.

The equation is derived from 151 observations from a global dataset of upland forests (R-squared=0.83). The use of the Cairns et al equation does not affect the conservatism of the project accounting: area-weighted average mean belowground biomass estimated using Cairns et al and using root:shoot ratios for tropical rainforest sourced from Table 4.4. in IPCC GL AFOLU (as prescribed in methodology VM0007 module CP-AB) was 27.0 t C/ha and 27.3 t C/ha, respectively."

**Auditor Response**: The project proponent has provided a quantitative analysis demonstrating that the Cairns equation does not negatively impact the conservativeness of the methodology.

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

**NIR 2012.13 dated 11/02/2012**

**Standard Reference**: CP-AB page 12-13

**Document Reference**: Forest biomass carbon inventory of the Parque Nacional Cordillera Azul (PNCAZ)

**Finding**: The CP-AB module requires the validation of the applicability of allometric equations used. Though the project proponent has presented evidence of the validation of the Chave et al allometric equations that are applied for trees, no evidence of the validation of the Delaney et al equation applied for genera in the Cecropiaceae family, the volume-based equation developed for palms, or the Feitas et al equation applied for Aguajal palms has been presented. Please provide evidence that these equations have been validated in accordance with the methodology.

**Client Response**: The PNCAZ 2009 forest carbon inventory results document and all calculations have been revised to: (1) assume all Cecropia have zero biomass (because the means to validate the equation are unavailable) and (2) provide validation of the Freitas et al 2006 equation for Mauritia flexuosa per CP-AB procedures. The former revision is especially conservative, because the un-altered post-deforestation stock estimate surely includes Cecropia, a dominant secondary species in the project region, as a component of agricultural fallow biomass.

**Auditor Response**: A quantitative analysis demonstrating the validation of the Freitas equation has been provided. The validator agrees that exclusion of cecropia is conservative, as the biomass of cecropia would be expected to be considerably higher in the project scenario than the baseline scenario.

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

**NIR 2012.14 dated 11/02/2012**

**Standard Reference**: All modules of VM0007

**Document Reference**: Cordillera Azul National Park REDD Project PDD Sections 4.1 and 4.2; Cordillera Azul National Park REDD Project 2012 Climate Monitoring Report section 3.1 and 3.2

**Finding**: The following data and parameters are included in modules applied by the project but do not appear in section 4.2 or 4.3 of the PDD (3.1 and 3.2 of the monitoring report). Though many of these parameters are discussed elsewhere in the PD, sections 4.1 and 4.2 of the PD must include all appropriate parameters referenced by the applicable methodology modules if these sections are to provide a useful overview of the data applied in and monitored for project accounting.

Data and Parameters Not Monitored:

CF (CP-AB; CP-D; M-MON)

D:RAD(CP-AB; CP-D)

Fj(X,Y) (CP-AB; M-MON)

R(CP-AB)

DDWdc (CP-D)

Regional Forest Cover / Non-Forest Cover Benchmark Map (M-MON)

Project Forest Cover Benchmark Map (M-MON)

Leakage Belt Forest Cover Benchmark Map (M-MON)

ARRD,unplanned,hrp (M-MON)

Data and Parameters Monitored:

MANFOR (LK-ASU)

PROPREs (LK-ASU)

PROTFOR(LK-ASU)

TOTFOR(LK-ASU)

N(CP-AB; CP-D)

DBH, H (CP-AB; CP-D)

Dian,I,t (CP-D)

BDia (CP-D)

TDSDW, HSDW(CP-D)

Project Forest Cover Monitoring Map (M-MON)

Leakage Belt Forest Cover Monitoring Map (M-MON)

Degradation PRA Results (M-MON)

Result of Limited Degradation Survey (M-MON)

**Client Response**: The PD and monitoring report have been updated to expand the listing of parameter tables as requested.

**Auditor Response**: The list of data and parameters is now complete.

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

---

**NIR 2012.15 dated 11/02/2012**

**Standard Reference**: All modules of VM0007

**Document Reference**: Cordillera Azul National Park REDD Project 2012 Climate Monitoring Report

**Finding**: Section 3.1 and 3.2 of the climate monitoring report do not include the actual values of the monitored data and parameters. Please update the report to reflect the actual values of each variable as applied to the current monitoring period. Similarly, in the 'monitoring equipment' section, please provide a list of the equipment that was used during the current monitoring report.

**Client Response**: Parameter tables in the monitoring report Sections 3.1 and 3.2 have been updated to specify parameter/data values and equipment used (where applicable) for the monitoring period.

**Auditor Response**: The list of data and parameters is now complete.

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

**OFI 2012.16 dated 11/02/2012**

**Standard Reference**: NA

**Document Reference**: NA

**Finding**: Immaterial data entry errors were discovered during cross checking of a sample of field data sheets from the biomass inventory against the excel sheet used for project accounting.  Although the magnitude of discovered errors was insufficient as to cause a material discrepancy, as an opportunity for improvement, the project proponent could improve quality control procedures to discover and correct data entry errors more readily. A list of discovered errors will be provided under separate cover. This finding is considered closed upon issuance, and no response is necessary.

**Client Response**:

**Auditor Response**: No response is required for OFIs.

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

**OFI 2012.17 dated 11/02/2012**

**Standard Reference**: VCS Standard v3.3 section 3.16.3

**Document Reference**: NA

**Finding**: The validator noted that the greenhouse GHG information system applied by the project proponent could be improved by formalizing procedures for data archiving, documentation, and backups. The validator noted that procedures were in place to appropriately manage data, including recording, compiling, and archiving data, but that the roles and responsibilities for some aspects of data management relied heavily on the knowledge of individual staff members, and were not always documented.  Formalizing this process and reducing the dependency on individual staff knowledge may reduce the risk of nonconformity later in the project lifetime, given the long time period over which the data must be applied.  This finding is considered closed upon issuance, and no response is necessary.

**Client Response**:

**Auditor Response**: No response is required for OFIs.

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