Validation Report for the Biocorredor Martin Sagrado REDD+ Project

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Summary:

This report documents the validation of the Validation Report for the Biocorredor Martin Sagrado REDD Project against the Verified Carbon Standard version 3.3 and it's supporting documents, including the approved methodology VM00015 version 1.1, "Methodology for Unplanned Deforestation." 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 295 thousand hectares of forest the San Martin department of 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 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 3.0 meets all relevant Verified Carbon Standard 3.3 requirements and correctly applies the selected methodology.

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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 VM0015 version 1.1, "Methodology for Unplanned Deforestation."

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 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:

> The Biocorredor Martin Sagrado Project for Reducing Greenhouse Gas Emissions from Deforestation ("Biocorredor Martin Sagrado REDD+ Project") aims to address deforestation and its resulting emission of greenhouse gases (GHG) in an area of the Department of San Martin, which is under land use pressure.
>
> The objectives of the Biocorredor Martin Sagrado Project are to protect forests with high conservation value. The project seeks to protect species in risk of extinction while also improving the quality of life of the families that live in these areas.
>
> The Biocorredor Martin Sagrado project area encompasses 295 654 hectares of Amazonian forest located alongside the Huayabamba river. Its creation and effective implementation are from PUR PROJET and Fundacion Amazonia Viva initiatives, in the aim to create a financial mechanism for generating a financial compensation from activities reducing emissions from deforestation (REDD+). The project started in January 2010, as a complementary strategy to the Alto Huayabamba reforestation project, in which PUR PROJET and ACOPAGRO are committed (since 2008), with a plan to replant more than 2,000,000 trees by 2012.
>
> This Martin Sagrado project supports indeed sustainable forest management, agro-forestry, non timber activities and livelihood development in the reserve by providing financing through carbon credits generated from forest protection and regeneration. The project creates a 80-year income stream that will directly enhance household livelihoods and natural resource management capacity.
>
> The project seeks to maintain and increase carbon stocks in the area, enhancing the hydrology, as well as conserving biodiversity and endangered species. Carbon financing will be used to support rural communities to develop a range of livelihood activities including non-timber forest products (NTMP), improved agro-forestry activities and productivity intensification, community-based ecotourism infrastructure, micro-credit and communication walkways development as well as other economic, social, cultural and environmental activities.
>
> The additional resources raised from the sale of these credits will permit to implement all of the measures necessary to control and monitor deforestation within the project site, enforce the law, and improve the welfare of local communities.
>
> From the start of the project, mobilizing of the community to protect forests has demonstrated effectiveness in halting deforestation and degradation in community forestry areas. Community members have expressed strong interests in developing activities to better preserve their land and avoid deforestation. They have listed the projected activities they are wishing to develop with

the support of Pur Projet. These activities have been prioritized and discussed with Fundacion Amazonia Viva and Pur Projet during the visits of the area..

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

SCS received and reviewed the Project Document, supporting technical documents, Non-permanence Risk Assessment, and supporting evidence to assess initial conformance with the requirements of the VCS standard. Key factors that impact the reported emission reductions and removals were identified, and a Validation Plan was created to focus on the critical elements presenting potential risk for errors. These elements included inventory data collection and handling, assumptions underlying the baseline characterization, the non-permanence risk assessment, and assessing relevant applicability and eligibility criteria. The audit team conducted interviews to understand the baseline scenario and conducted field work to verify the collection of carbon stock inventory data.

The validation team conducted a desk review of the documentation provided by the project proponent. The key project documents, as prepared by the client are as follows:

- Project Description Version 4.0 dated 21 December 2012
- Risk Assessment Report Version 4.0, dated 21 December 2012

The project proponent provided extensive supporting documentation in addition to the primary documents listed above. In summary, this documentation included, but was not limited to the following:

- ONF International. Annex to PDD: Step 1.1 Spatial Boundaries
- ONF International. Annex to PDD: Step 2: Analysis of historical land-use and land cover change
- ONF International. Annex to PDD: Step 4: Projection of Future Deforestation
- ONF International. Annex to PDD: Carbon Stocks
- An excel spreadsheet containing all calculations required to implement the selected methodology “GHG Calculations VCS – 10092012 – v1.0” and subsequent versions
- An excel spreadsheet “Chronogram of project – v1.0 – 26022012” describing the planned timing of project activities
- An excel spreadsheet “Master Plan activities – v.3.0-12102012” describing the budget of planned activities

- An excel spreadsheet “Monitoring Plan V1.0-05092012-PJ” describing the monitoring indicators and overall framework
- An excel spreadsheet “Cuestionario Monitoreo Impactos” and subsequent versions containing the results of survey-based monitoring
- An excel spreadsheet “Business Plan Martin Sagrado v7.0-10092012-PJ” describing the financial basis for the project
- Copies of confidential contracts demonstrating that funds had been secured for project activities and that additionally callable financial resources are available.
- Supporting documentation for the concession El Breo:
    - Miscellaneous supporting information related to concession contracts, management plans, and technical proposals
- Supporting documentation for the concession Martin Sagrado:
    - Miscellaneous supporting information related to concession contracts, management plans, and technical proposals
- Supporting documentation for the concession Montecristo
    - Miscellaneous evidence demonstrating that the process of obtaining a concession has been initiated, but not yet completed
- Letters, agreements, photos of meetings, attendance lists, sample presentations, and other miscellaneous evidence demonstrating involvement from various communities and organizations in and around the project area
- CVs of project team members
- Documents describing organizational structure, operating procedures, contractual agreements between the project proponent and other entities involved in the project
- Evidence of government consultation and approval, including minutes from various meetings with environmental authorities of the regional government and an approval record of the rpject
- Contracts between the project proponent and other key project entities:
    - “Contrato entre la cooperativa Acopagro y The Pure Project”
    - “Contrato entre la La Fundacion Amazonia Viva y The Pure Project”
    - “Contrato entre la La Asociacion Apahui y The Pure Project”
    - “Contrato entre la La Asociacion El Breo y The Pure Project”

- Copies of relevant local laws and regulations
- Miscellaneous documents, studies, maps, and other evidence providing support for the analysis of agents and drivers of deforestation
- GIS files and data related to delineation of boundaries, spatial modeling, and remote sensing conducted during project development
- Copies of images used in analysis of historic land use change
- Scientific literature used to plan and implement the carbon stock inventory
- Scanned copies of field data sheets from the carbon stock inventory
- Protocols prepared for field crews in biomass inventory
- An excel spreadsheet "Biomass Inventory –v3.0-12102012" and subsequent versions containing all calculations related to the biomass inventory
- Evidence of implementation of activities including management plans; reports from control and surveillance; photos and reports from education activities; photos and reports from various activities designed to promote valuation of non-timber forest products; recordings of radio broadcasts; photos of reforestation efforts in leakage management zones; and periodic reports of activities

2.3 Interviews

The following personnel directly responsible for the content of the project design document were interviewed during an in person office visit in Paris, France between 9 October 2012 and 12 October 2012. The technical details of the project and implementation of the methodology were discussed in depth during these interviews.

Pierric Jammes, Pur Projet
Marie Calmel, ONFI
Cedric Lardeux, ONFI
Maxence Rageade, ONFI
Danny Torres, ONFI

In addition, several meetings with stakeholders were held during the field visit described in section 2.4. These included the following persons:

Roldán Rojas Paredes, Fundacion Amazonia Viva
Gonzalo Rios, ACOPAGRO
Silvia Reategui, Autoridad Ambiental Del Gobierno Regional De San Martin
Maria del Pila Castillo, Fundacion Amazonia Viva
Hitler Torres Perz, APAHUI
Daniel Salas Shupingahua, APAHUI
Augusto Sangama Piña, APAHUI
Stakeholders in Huicungo, Pucalpillo, Santa Rosa, and Dos de Mayo

2.4 Site Inspections

Two separate site visits were conducted by the audit team to collect evidence that supports the validation opinion expressed in this report. The first visit was conducted by Ryan Anderson and Tatiana Lapeyre from 27 February 2012 to 2 March 2012. This first visit was initially contracted by Pur Projet as part of validation against the CCBA standard, but evidence collected was also applicable to the validation of the project against the VCS standard. Present at the meeting were representatives of the Fundacion Amazonia Viva, members of several participating communities, representatives of the ACOPAGRO cooperative, representatives of the municipal government, and representatives of the Rio Abiseo National Park. The site visit also included visits to the communities of Huicungo, Pucalpillo, Santa Rosa, and Dos de Mayo; a visit to the concession area and an associated control point; and a meeting with representatives of the regional government.

A second site visit was conducted with the purpose of verifying the carbon stock inventory from 23 September to 4 October 2012. Diana Vasquez Alzamora, and Vanessa Egg visited the project area and remeasured forest biomass data from plots A8, A3, C3, D4, A6, D7, D12, and C8.

2.5 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.

3 VALIDATION FINDINGS

3.1 Project Design

3.1.1 *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.

3.1.2 *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 VM0015 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.

3.1.3 *Project Proponent*

The project proponent is Pur Projet. Contact information for the project proponent is provided in Section 1.3 of the PD. Other entities involved in the project include Fundacion Amazon Viva, Several Participating Communities, the Cooperative Acopagro, and ONF international. Contact information for each of these entities is provided in the PD.

3.1.4 *Project Start Date*

The project start date is 1 January 15, 2010, which corresponds the beginning of the process for establishing the Martin Sagrado Concession with Conservation Purposes, and with an agreement with Asociacion Dos de Mayo for the integration the El Breo concession to the Biocorredor Martin Sagrado REDD project The audit team was able to view documents dated January 2010 to confirm that project activities did indeed begin at that time. The project has completed validation within five years of the project start date, in accordance with Section 3.8.2 of the VCS standard.

3.1.5 *Project Crediting Period*

The project proponent has selected a crediting period of 40 years (1 January 2010 to 31 December 2049). The monitoring and implementation plans submitted by the project proponent cover this entire period.

3.1.6 *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 as a “project,” rather than a “mega project.”

3.1.7 *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 community-driven strategies within the Project Area and the surrounding leakage management areas. These include legal formalization of the project area, Control and Surveillance of the area, working with local communities to improve knowledge of conservation strategies, non timber forest valuation, monitoring and inventor, development of renewable energy resources, reforestation, and community training. The audit team conducted interviews during the first site visit 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 and that they appear to be appropriate to the local context of the project.

3.1.8 *Project Location*

The project location is described in Section 1.9 of the PD. The project is located in the San Martin department of Peru. Shapefiles delineating the project area and leakage belt 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 auditor during the site visit.

3.1.9 *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.

3.1.10 *Ownership and Other Programs*

3.1.10.1 Right of Use

Ownership of carbon rights for the project area is described in Section 1.12.1 of the project document. The project area is constituted by three concessions for conservation (Martin Sagrado, El Breo, Montecristo). Each is solicited from the government by a different entity. ACOPAGO controls the Martin Sagrado concession, the Asociacion Dos de Mayo controls the El Breo Concession, and APAHUI is in the process of obtaining the Montecristo concession. The project proponent provided legal documentation of the Martin Sagrado and El Breo concessions to the audit team for review, and provided evidence that they had submitted required materials to the government to solicit the Montecristo concession.

As of the time of validation, the Montecristo concession has not been granted to APAHUI. This is in conformance with Section 3.4.2 of the VCS AFOLU requirements, which states that “The entire project area shall be under the control of the project proponent at the time of validation*, or shall come to be under the control of the project proponent by the first verification event* [emphasis added]. Where the project proponent does not yet have control over the entire area at validation, the entire project area is to be validated as if it were under control and the project is ready to be implemented.” The audit team has concluded that the project meets requirements (a)-(d) of Section 3.4.2 of the VCS AFOLU requirements, which apply to projects for which the proposed area is not under control of the project proponent at the

time of validation. Namely, the additionality test is applicable to the entire project area to come under control of the project proponent in the future; the monitoring plan is designed to accommodate changes in the size of the project (that is, it has been designed under the assumption that the entire project are will come under control of the project proponent after the granting of an administration contract); The project area will be required to be verified within five years of validation, at which time the project area will become fixed; and the rules of clause 3.4.2(d) will apply in the event that the area fixed at verification is smaller than intended at validation. The project monitoring plan includes specific provisions for handling the possible circumstance in which the Montecristo concession cannot be obtained.

The audit team reviewed transfer agreements that transfer emissions rights from each of the three concessionaires to the project proponent.

The audit team concludes that the project proponent has demonstrated a right of use that is consistent with the VCS standard.

3.1.10.2 Emissions Trading and Other Binding Limits

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

3.1.10.3 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.

3.1.10.4 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.

3.1.10.5 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.

3.1.11 *Additional Information*

3.1.11.1 Eligibility Criteria for Grouped Projects

The project is not a grouped project.

3.1.11.2 Leakage Management for AFOLU Projects

The project includes leakage management measures in accordance with the selected methodology. Leakage management areas (areas near the project zone that have already been deforested) have been delineated, and the project includes activities implemented in these areas that are designed to reduce the

threat of leakage. These activities are similar to the project activites, and are described in detail in section 3.3 of the PD. These activities have been identified in accordance with Section 1.1.4 of approved VCS methodology VM0015.

3.1.11.3 Commercially Sensitive Information

The project proponent provided all requested information to the validator.

3.1.11.4 Any Further Information

The project proponent provided further details about the project area's physical, biological, and socio-economic characteristics in an appendix. This material was not assessed in this validation except to the extent that it was required to identify conformance with the VCS standard.

3.2 Application of Methodology

3.2.1 *Title and Reference*

The project applies approved VCS methodology VM0015, "Methodology for Unplanned Deforestation, version 1.1. The methodology is current as of the date of this report.

3.2.2 *Applicability*

The applicability conditions of the methodology are as follows:

a) Baseline activities may include planned or unplanned logging for timber, fuel-wood collection, charcoal production, agricultural and grazing activities as long as the category is unplanned deforestation according to the most recent VCS AFOLU requirements.

The baseline activity consists of avoidance of unplanned deforestation, which the audit team was able to verify via interviews during the site visit and observation of recent deforestation near the project area. The deforestation threats were obvious during the site visit and upon examination of remote sensing imagery.

b) Project activities may include one or a combination of the eligible categories defined in the description of the scope of the methodology (table 1 and figure 2).

The scope of the methodology defines several categories of potential project activities. This project applies a baseline of deforestation in old growth forests without logging and project activity consisting of protection without logging, significant (greater than *de minimus*) fuel wood collection, or charcoal production. The project therefore is eligible under project type A described in the methodology. The lack of significant logging and fuel wood collection was evidenced by interviews conducted during the site visit.

c) The project area can include different types of forest, such as, but not limited to, old-growth forest, degraded forest, secondary forests, planted forests and agro-forestry systems meeting the definition of "forest".

The project proponent used the definition of forest applied under the Peruvian DNA- Land with a minimum area of 0.5 hectares, a minimum tree crown cover of 30%, and a minimum tree height of 5 meters. The

project developer used images to verify that the project area meets this definition and excluded cleared areas and other regions that did not meet this description from the project area.

d) At project commencement, the project area shall include only land qualifying as "forest" for a minimum of 10 years prior to the project start date.

The project proponent provided imagery that could be used to verify that the project area consisted only of land qualifying as forest for a minimum of 10 years prior to the project start date. The kml file delineating the project boundary only includes areas meeting this requirement.

e) 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 cm. If the project area includes a forested wetlands growing on peat (e.g. peat swamp forests), this methodology is not applicable.

The project proponent states that no forested wetland is found within the project area. No forested wetlands were observed by the audit team during the site visit.

3.2.3 *Project Boundary*

3.2.3.1 Spatial Boundaries

The project proponent provided GIS files and printed maps that clearly define the spatial boundaries of the project area, reference area, leakage belt, and leakage management areas. SCS reviewed the definitions of these areas and compared them to criteria provided by the methodology. The audit team concluded that the way these areas are defined is consistent with the criteria provided in Section 1.1 of the methodology.

The reference region is defined based on an analysis of agents, drivers and patterns of deforestation similar to those expected in the project area. The project proponent used literature, expert opinion, and participatory analysis to identify agents and drivers of deforestation and selected a reference region based on similarity to the results of this analysis. The identified agents and drivers are consistent with the results of interviews in the project area by the audit team. Additionally, the project proponent demonstrated the similarity of the landscape structure and ecological conditions of the selected reference area to the project are using a GIS analysis. The audit team reviewed this analysis and concluded that the reference area has been selected in conformance to the criteria of the methodology.

The project area conforms to the methodology requirements of including only forest land as of the project start date, as evidenced by comparison of defined project area boundary to remote sensing images (i.e. areas classified as non-forest have been excluded). Each of the requirements for the description of the project area provided by Section 1.1.2 of the methodology is included in the project document prepared by the project proponent.

The leakage belt was delineated using a mobility analysis (Option II, Section 1.1.3 of the methodology). According to the requirements of the methodology, a mobility analysis is always an acceptable means of defining the leakage belt. The mobility analysis conducted by the project proponent used a spatial analysis that is described in full in an appendix to the PD. The project proponent produced a continuous map of the probability of mobility of agents of deforestation, and assigned an area approximately 90% the

size of the project area to the leakage belt. The methodology provides no guidance about the required size of the leakage belt, so the project proponent justified this size based on guidance drawn from other approved VCS REDD methodologies. The leakage belt is significantly larger than the total amount of predicted baseline deforestation predicted and is located in areas with the highest likelihood of deforestation. The audit team reviewed the underlying assumptions of the GIS analysis and determined that the location of the leakage belt was determined reasonably and in conformance with the methodology.

A description of leakage management areas is provided in Section 3.1.11.2 of this report.

3.2.3.2 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 period, and fixed baselines periods are defined in the PD as required by the methodology.

3.2.3.3 Carbon Pools

The project proponent has selected the above ground tree and below ground biomass pools for inclusion in the project. Non tree biomass is conservatively only included in the post-deforestation non-forest classes in the baseline scenario. Dead wood has been included as well, but lying dead wood was conservatively excluded from the forest classes in the project scenario. Harvested wood products were excluded as insignificant. Based on an analysis of drivers of deforestation as determined using methods provided by VM0015 and a quantitative analysis of carbon in wood products, the harvested wood products pool was shown to be insignificant. The assumptions made in this analysis are consistent with interviews conducted by the audit team, and the sources and calculations used to justify the insignificance of this pool were assessed during the desk review.

3.2.3.4 Sources of Emissions

The project boundary does not include any non-carbon stock sources of GHG emissions. The exclusion of these emissions sources is conservative because burning is expected to be more prevalent under the baseline scenario than the project scenario, and is consistent with guidance provided by the methodology and the VCS standard.

3.2.4 *Baseline Scenario*

Under VM0015, the baseline scenario is made up of several components: an analysis of historical land cover change, an analysis of agents, drivers and causes of deforestation and their likely future development, projection of future deforestation, calculation of baseline land lover changes, and estimation of baseline carbon stock changes. A summary of the steps involved is provided here. The project proponent has documented the steps in detail in section 2 of the PD and in associated appendices. All of the data and analyses described here was reviewed in detail by the audit team. The findings of this review can be seen in appendix A.

The first step in the baseline methodology is the identification of key spatial and temporal project boundaries, which has been described above.

The second step requires an analysis of remote sensing imagery for historical land cover change analysis. For this step, the project proponent used a combination of Landsat 5, Landsat 7, and Spot 5 images from the historical reference period to prepare maps and tables describing past land cover change in the reference region. The classified images appeared consistent with observations made by the audit team in the field. In addition, the project developer conducted an accuracy assessment in which the classifications were compared to ground truth points observed in the field and manual interpretation of high resolution images. The audit team reviewed the methodologies applied in this analysis to confirm that they conform to methodology requirements and best practices in the field of remote sensing and are in conformance with the methodology.

The third step in the baseline methodology is the identification of agents and drivers of deforestation. To do this, the project developer used a combination of literature, interviews with local experts, and participatory rural appraisals. The analysis identified six agents of deforestation, the most significant of which were migrants. Additionally, nine drivers of deforestation were identified, with conversion of lands to croplands, pastures, and housing being the most significant. The details of this analysis are presented in appendix 4 to the PD. Interviews and observations made by the audit team during the site visit were consistent with the conclusions reported by the project developer with regard to identification of agents and drivers of deforestation. We conclude that the analysis is consistent with the methodology and accurately reflects conditions in the project area.

The fourth step of the baseline deforestation methodology is the projection of the quantity and location of future deforestation. Methodology VM0015 allows for three approaches to predicting future deforestation. The project developers have selected option (a) as outlined in the methodology, in which the rate of baseline deforestation is estimated by using the historical average rate as calculated from imagery analysis conducted in the second step. The selection of this method was justified according the the procedures off section 4.1.1 of VM0015, and is the most conservative of the modelling approaches allowed by the methodology. The audit team carefully reviewed all calculations made in the calculation of historic average rate to ensure that they were consistent with VM0015. The analysis produced a rate of deforestation of 0.6% per year. The audit team concludes that this rate is consistent with the data presented and the analysis methods prescribed by the selected methodology and represents an estimate of baseline deforestation that is likely to be conservative.

The fifth step in the application of the methodology requires a spatial model be used to predict the location of baseline deforestation. The audit team reviewed the steps performed in this analysis in order to ensure they were conducted in a way that was consistent with the methodology. These steps include the preparation of factor maps, preparation of deforestation risk maps, selection of a deforestation model, and mapping of the location of future deforestation. These steps were conducted using the “Dinamica Ego,” modelling framework, a well documented and peer reviewed modelling environment that is referenced specifically by the methodology. The methodology specifies that the fit of the spatially predictive model must be assessed using “appropriate statistical techniques” (VM0015 section 4.2.3). While VM0015 identifies the FOM statistic as one appropriate technique, the project proponent chose to use a fuzzy similarity measure developed by Hagen (2003), a kappa statistic (Pontius 2000), and a ROC statistic to assess accuracy (Pontius 2001). The audit team discussed the appropriateness and of these statistics and reviewed relevant literature and determined that they are at least as robust as the FOM statistic suggested by the methodology. Each of these statistics suggested strong agreement between observed historical changes in land cover and model predictions. This strong agreement was also

confirmed by visual comparison of model predictions to actual spatial locations of deforestation. For this reason, and because the use of the FOM statistic is a suggestion, rather than a requirement of the methodology, the audit team determined that the modelling of the location of future deforestation had been conducted in compliance with the requirements of VM0015.

The sixth step in the application of the baseline methodology requires the estimation of carbon stocks in each land use class. The project proponent used an on the ground inventory to estimate these stocks. The assessment team visited and re-measured eight plots that were part of this inventory to confirm that field methods accurately reflected conditions seen on the ground. The audit team calculated the carbon stock of each plot and compared it to the stock reported by the project proponent. No statistically significant difference in biomass was apparent in comparing the project proponent's estimates to those made by the audit team. In subjectively comparing the data, the assessment team saw no indication that there were systematic errors made during field measurement.

In addition to field assessment of the biomass inventory, the audit team reviewed all spreadsheets, and equations used to calculate the carbon stock of each stratum and its associated uncertainty. The project used allometric equations and root to shoot ratios selected from the literature that are appropriate to the project area. The audit team also traced a subset of data sheets from their initial field recording through the full calculation process. Results from these assessments can be found in the list of findings. After all findings were closed, the audit team concluded that the carbon stock estimates were made in a way that is free from material error and consistent with the requirements of the methodology.

Steps seven through nine in the application of the baseline methodology consist of manipulation of the data discussed above through a series of tables and equations to estimate the *ex ante* changes in carbon stocks in the project and leakage areas as well as the *ex* ante estimation of project GHG gas benefits. The audit team traced the data in the excel worksheets used by the client to conduct this analysis to ensure that it was conducted in accordance with the methodology and is free from material errors. The validated baseline carbon stock changes and ex ante project benefits are given in Section 2.7.6 of this report.

3.2.5 Additionality

The project uses the VCS Tool VT0001 "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities" in order to demonstrate additionality. In the application of this tool, the project developer analyzed four alternative land use scenarios: conversion to croplands; conversion to settlements and infrastructure; selective logging of high value species; and conversion to mining and oil concessions. The project conducted an assessment of the consistency of these land use scenarios with applicable laws and regulations, and determined that there are not legal restrictions that prevent these baseline land uses. Each of the land uses discussed can be observed in the area around the project area in the last ten years. Additionally, the project proponent conducted Barrier Analysis, and Common Practice Analysis in accordance with the Additionality Tool. The audit team reviewed the documentation and assumptions associated with these analyses and concluded that the project proponent's assertion that the project is additional is reasonable and was arrived at in a way that is consistent with the tool. Interviews conducted during the site visit and documentary evidence presented by the project developer supports the additionality of the project.

3.2.6 Quantification of GHG Emission Reductions and Removals

The steps involved in validating the quantification of GHG Emissions Reductions and Removals are discussed in Section 2.7.4 of this report, in which the baseline scenario is discussed. The baseline scenario constitutes the majority of the quantification steps that can be assessed at the validation phase. Quantification of ex-ante project benefits assumes an effectiveness index of 70%. Uncertainties in carbon stock estimates were discounted as required by the methodology and are reflected in the figures reported below. All calculations leading to the below validated figures were checked by the auditor for calculation errors and conformance with the methodology requirements.

Project Year	Calendar Year	Validated Baseline scenario	Estimated Project scenario (Validation applies to *ex ante* estimates only)							
		Annual baseline carbon stock change (ΔCBSLPAt)	Annual carbon stock change - project scenario (ΔCPSPAt)	Net project emissions reductions (before leakage)	Leakage (ΔCLKt)	Annual Total net GHG emissions reductions (ΔREDDt)	Cumulative Total net GHG emissions reductions (ΔREDD)	Buffer VCS (VBCt)	Annual number of VCUs (VCUt)	Cumulative number of VCUs (VCU)
		t CO2e	*t CO2e*	*t CO2e*	*t CO2e*	*t CO2e*	*t CO2e*	*t CO2e*	*t CO2e*	*t CO2e*
0	2010									
1	2011	-89,535	-75,697	13,838	-2,124	11,714	11,714	-1,384	10,330	10,330
2	2012	-102,963	-71,524	31,440	-4,826	26,614	38,327	-3,144	23,470	33,800
3	2013	-99,955	-52,886	47,069	-7,225	39,844	78,171	-4,707	35,137	68,936
4	2014	-99,651	-38,241	61,410	-9,426	51,983	130,155	-6,141	45,842	114,779
5	2015	-121,458	-38,375	83,083	-12,753	70,330	200,484	-8,308	62,021	176,800
6	2016	-130,354	-39,191	91,163	-13,994	77,170	277,654	-9,116	68,053	244,854
7	2017	-143,929	-42,171	101,758	-15,620	86,138	363,792	-10,176	75,962	320,816
8	2018	-147,446	-43,202	104,244	-16,001	88,243	452,035	-10,424	77,818	398,634
9	2019	-148,263	-43,441	104,822	-16,090	88,732	540,766	-10,482	78,250	476,884
10	2020	-150,665	-44,145	106,520	-16,351	90,169	630,935	-10,652	79,517	556,401

3.2.7 *Methodology Deviations*

The project developer did not deviate from the methodology.

3.2.8 *Monitoring Plan*

The project proponent has provided a monitoring plan in Section 4.3 of the project document and supporting appendices 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.

3.3 Environmental Impact

The project does not appear to have a negative environmental impact. The project has provided evidence of approval by the regional environmental authority of the San Martin Regional Government.

3.4 Comments by stakeholders

Section 6 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 as well, which will further serve to facilitate ongoing consultations with stakeholders throughout the project lifetime.

4 NON-PERMANANCE RISK ASSESSMENT

The project developer described the non permanence risk assessment process and summarized supporting data in a document titled “Martin Sagrado-Risk Report-v2.0-25102012.pdf.” 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:

Project Management		
Risk Factor	Summary of evidence reviewed and validation comments	Risk Rating
a)	The primary project activities are designed to avoid deforestation of native forests, therefore stocks on which credits are issued do not depend on planting.	0
b)	The project will require ongoing enforcement.	2
c)	The project proponent provided copies of CVs that demonstrate the project proponents include individuals with significant skills in all required areas of expertise.	0
d)	The project has applied the highest applicable risk score for this factor based on the remoteness of portions of the project area.	2
e)	The project proponent has provided evidence of prior experience in successfully managing VCS projects through validation, verification and issuance of GHG credits.	-2
f)	The project proponent has provided evidence that management activities are regularly reviewed to identify risks to the project and adapt activities accordingly. Interviews with various project participants confirmed this practice.	-2
Total Project Management (PM) [as applicable, (a + b + c + d + e + f)] Total may be less than zero.		**0**

Financial Viability		
Risk Factor	Summary of evidence reviewed and validation comments	Risk Rating
a) b) c) d)	The project proponent provided copies of a business plan as well as contracts that demonstrate that the project's cash flow breakeven point is expected to be within four years of this risk assessment. These contracts demonstrated that the project has already secured the majority of these funds.	0
e) f) g) h)	The project proponent provided copies of contracts that demonstrate that funding has been secured that totals between 40% and 80% of the total funding needed to cover the total cash out before the project reaches breakeven.	1
i)	The project proponent provided copies of bank statements demonstrating available cash.	-2
Total Financial Viability (FV) [as applicable, ((a, b, c or d) + (e, f, g or h) + i)] Total may not be less than zero.		**0**

Opportunity Cost		
Risk Factor	Summary of evidence reviewed and validation comments	Risk Rating
a) b) c) d) e) f)	Baseline activities are subsistence driven, so an NPV analysis is not required by the risk tool. Net-positive community impacts have been described in depth in the PD and were confirmed by the audit team through interviews during the site visit.	0
g)	Not applicable	0
h)	The project is composed of three concessions, two of which have been secured. These have been granted as conservation concessions with 40 year renewable contracts, establishing a legal requirement to continue management in a way that conserves stocks. Copies of the contracts establishing these concessions have been reviewed by the audit team. See section 3.1.10.1 for a discussion of the third concession. As described in Section 3.4.2 of the VCS AFOLU requirements, this report evaluates the entire project area as if it were under the control of the project proponent, so we assume that the circumstances of the Montecristo concession will be equivalent to those of the other two. In the event that the Montecristo concession is not secured by the first project verification, this risk factor will require re-assessment.	-2
i)	No 100 year legally binding commitment has been demonstrated.	
Total Opportunity Cost (OC) [as applicable, (a, b, c, d, e or f) + (g or h)] Total may not be less than 0.		**0**

Project Longevity		
a)		0
b)	The project land title is secured through a renewable 40 year conservation concession, which a project longevity claimed of 80 years.	-10
Total Project Longevity (PL) May not be less than zero		**0**

Land Tenure and Resource Access/Use Rights		
Risk Factor	Summary of evidence reviewed and validation comments	Risk Rating
a)	Not applicable	
b)	Land is government owned and the project organizations hold concessions as evidenced by contracts presented by the proponent	2
c)	No evidence of disputes over land tenure or ownership was found during the validation process.	
d)	No evidence of disputes over land tenure or ownership was found during the validation process.	
e)	The project is not a WRC project	
f)	As discussed above, the concession for conservation constitutes a legally binding commitment to continue management practices that protect carbon stocks over the length of the project crediting period	-2
g)	Not applicable	
Total Land Tenure (LT) [as applicable, ((a or b) + c + d + e+ f)] Total may not be less than zero.		**0**

Community Engagement		
Risk Factor	Summary of evidence reviewed and validation comments	Risk Rating
a)	The project has provided extensive evidence of community consultation through participatory rural appraisals and records of project implementation activities. Reports from these consultations were made available to the audit team and interviews conducted during the site visit verified that communities had been consulted regarding the project.	0
b)	The project has provided extensive evidence of community consultation through participatory rural appraisals and records of project implementation activities. Reports from these consultations were made available to the audit team and interviews conducted during the site visit verified that communities had been consulted regarding the project.	0
c)	The project has provided extensive evidence of community consultation through participatory rural appraisals and records of project implementation activities. Reports from these consultations were made available to the audit team and interviews conducted during the site visit verified that communities had been consulted regarding the project. These consultations indicate that the project generates net positive impacts.	-5
Total Community Engagement (CE) [where applicable, (a+b+c)] Total may be less than zero.		**-5**

Political Risk		
Risk Factor	Summary of evidence reviewed and validation comments	Risk Rating
a)	The governance score of Peru is -0.280 calculated as described in the AFOLU Non-Permanence Risk Tool. These calculations were made by the project proponent and cross-checked by the validator.	
b)		2
c)		
d)		
e)		
f)	The project proponent presented evidence of Peru's REDD-Readiness activities, including contact information for Peru's DNA under the CDM and evidence of REDD readiness funding..	-2
Total Political (PC) [as applicable ((a, b, c, d or e) + f)] Total may not be less than zero.		**0**

Score for each natural risk applicable to the project (Determined by (LS × M)	
Fire Risk	0.5
Pest and Disease	0
Extreme Weather	0
Geological	0
Total Natural Risk (as applicable, F + PD + W + G + ON)	**0.5**

Risk Category	Rating
a)	0
b)	0
c)	0.5
Overall Risk Rating (a + b + c)	**0.5**

Following the AFOLU non-permanence risk tool, paragraph 2.5.2, a minimum risk rating of 10 shall apply to the project.

5 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 FINDING

NCR 2012.1 dated 10/03/2012

Standard Reference: VCS Standard Version 3.2 Section 3.1.1; VCS Website

Document Reference: PDD Martin Sagrado VCS V1.0 section 2.1

Finding: According to the VCS website (http://v-c-s.org/methodologies/VM0015, accessed 10/2/12), As of 30 September 2012, VM0015, v1.0 is no longer valid. Projects that have not completed validation by 30 September can no longer apply VM0015, v1.0. The project must apply an approved VCS methodology.

Client Response: The Project Proponent anticipated the methodology revision, as it had access prior to publication to the revised version of the methodology. He therefore already applied the expected changes, in prevision of the methodology's validation (carbon stock decay model, constraint analysis)

Auditor Response: A revised version of the methodology has been approved by the VCSA. The project proponent's application of VM0015 is consistent with the revised methodology.

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

NIR 2012.2 dated 10/03/2012

Standard Reference: VCS Standard Version 3.2 Section 3.11.1

Document Reference: PDD Martin Sagrado VCS V1.0 section 1.9; Projet martin sagrado pour ONFI - 7.kmz

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 copy of the kml file that will be provided to the VCS registry to enable verification of its' accurate description of the project location. Note that the kmz file provided thus far includes the concessions Martin Sagrado, El Breo, and Montecristo, which are described in the PDD as included in the project area, in addition to concessions Santa Rosa and Pucalpillo, which are not described as included in the project area. Please provide a single file that clearly and unambiguously defines the boundaries of the project area, without also including lands that are not within the boundaries of the project. As the project boundary is defined by the methodology, it must exclude non-forest areas.

Client Response: A single kml file of the project area is provided:"Biocorredor MS Project Area.kml" in folder "Spatial Boundaries"

Auditor Response: The project proponent has provided an appropriately formatted file that specifies the geographic extent of the project area.

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

NCR 2012.3 dated 10/03/2012

Standard Reference: VM0015 V1.0 section 1.1.4

Document Reference: PDD Martin Sagrado VCS V1.0 section 2.3.1.4

Finding: The selected methodology requires that "at the project start date, leakage management areas shall be non-forest land" (pg 10), and that leakage management areas "are non-forest areas located outside the project boundary in which the project proponent intends to implement activities that will reduce the risk of activity displacement leakage, such as afforestation, reforestation or enhanced crop and grazing land management. The boundary of such areas must be defined according to existing management plans or other plans related to the proposed AUD project activity. Such plans shall be made available to the VCS Validation/Verification Body (VVB) at the time of validation. The boundary of leakage management areas must be clearly defined using the common projection and GIS software formats used in the project and shall be reassessed and validated at each fixed baseline period" (pg 28). The PDD describes leakage management areas as sometimes being within the project area (section 2.3.1.4) and at other times being equal as the leakage belt. Page 8 of the methodology, however, requires that "The project area, leakage belt and leakage management areas are subsets of the reference region and are always spatially distinct (not overlapping) areas (see figure 1)." The leakage management areas must be redefined to meet these requirements of the methodology and the boundaries of the leakage management areas clearly defined in a GIS format.

Client Response: The leakage management areas have been redefined to include only non-forest land, and cover the communities areas in which the project activities will be developped (Refer to : List of participating communities in the PDD; Master plan of activities; Annual plan of Fondation Amazonia Viva). The leakage management areas are outside the project area. section 2.3.1.4 of the PD has been corrected. GIS files of the leakage management areas are provided in folder "Spatial Boundaries")

The leakage belt has been redefined to exclude all leakage management areas. (Note that this redefinition does not impact the geographical extent of the leakage belt as it was defined based only on potential deforestation of forested areas). New GIS files of the leakage belt are provided in folder "Spatial Boundaries".

An updated version of the technical annex "Geographical Boundaries" is provided.

Auditor Response: The project proponent has appropriately updated the spatial boundaries of the leakage management areas to bring the project into conformance with the specified section of the methodology.

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

NIR 2012.4 dated 10/03/2012

Standard Reference: VM0015 V1.0 section 1.2.3

Document Reference: PDD Martin Sagrado VCS V1.0 sections 1.5, 1.6, and 2.3.2.2-2.3.2.3

Finding: In section 1.5 the PDD indicates that the project start date is January 1st 2010. Similarly, sections 1.6 and 2.3.2.2 of the PDD indicate that the project crediting period starts on January 1st 2010. However, section 2.3.2.3 of the PD indicates that the first fixed baseline period does not begin until January 1st 2011. Please indicate if the discrepancy between the first fixed baseline period and the project start date is intentional. If so, please provide a justification for the differing dates. If the discrepancy is an error, please correct the PDD to reflect the correct dates.

Client Response: The discrepancy was an error which has been corrected. The first fixed baseline period is the same as the project start date, January 1st 2010. Section 2.3.2.3 of the PD has been corrected.

Auditor Response: The timing of the first baseline period has been corrected in section 2.3.2.3. However, section 2.3.2.4 still indicates that the first monitoring period begins on January 1 2011, rather than January 1 2010 as would be consistent with the revised baseline period. Please correct section 2.3.2.4 as well.

Second Client Response: [A revised document was submitted]

Second Auditor Response: Both sections have now been corrected.

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

OFI 2012.5 dated 10/03/2012

Standard Reference: NA

Document Reference: NA

Finding: This line and finding number has been intentionally left blank to facilitate consistency of workbook with finding numbers provided in other documents. No response is required.

Client Response:

Auditor Response:

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

NIR 2012.6 dated 10/03/2012

Standard Reference: VM0015 V1.0 section 4.1.1

Document Reference: PDD Martin Sagrado VCS section 2.4.3.1

Finding: The PDD does not provide a rationale for the selection of approach A for prediction of the quantity of future deforestation based on the guidelines of section 4.1.1 of the methodology. Please update the PD to include a rationale for selection of this approach that is consistent with the methodological requirements.

Client Response: The rationale for selecting approach "a" has been added to the PDD section 2.4.3.1., following the requirements of the section 4.1.1 of the methodology. The rationale has also been added to the Annex Step 4: Projection of Future Deforestation.

Auditor Response: The provided rationale is consistent with the requirements of the methodology and results in the most conservative deforestation rate of the methods available.

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

NIR 2012.7 dated 10/03/2012

Standard Reference: VM0015 V1.0 section 4.1.3.3 and 5.2

Document Reference: PDD Martin Sagrado VCS Section 2.4.4

Finding: The methodology includes a table summarizing projected deforestation in the project area, but tables describing the leakage belt and reference region are omitted from the PDD (but included in a separate excel sheet). To facilitate transparency and consistency in future verification and events and ensure future verifiers have all the information required to fully understand the validated baseline, please include update the PDD to include all three tables required by sections 4.1.3.3 and 5.2 of the methodology.

Client Response: The tables for projected deforestation in the leakage belt and in the reference region have been added to the PDD, in section 2.4.4.

Auditor Response: The required tables have been added to the PDD and are consistent with data checked by the validator during the office visit.

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

NIR 2012.8 dated 10/03/2012

Standard Reference: VM0015 V1.0 Part 3

Document Reference: PDD Martin Sagrado VCS Section 4

Finding: The methodology requires the monitoring plan to include, among other factors, a technical description of the monitoring tasks. The descriptions provided in section 4.3 of the PDD do not contain the technical details of monitoring. The monitoring plan must be expanded to include this information. A complete monitoring plan should include a sufficiently detailed technical description as to allow a qualified party who is new to the project to conduct monitoring and obtain results consistant with data previously collected (for example, in the case of staff turnover).

Client Response: The PDD describes the content of the monitoring activities according to the Methodology, and has been updated to include a more detailed table of technical activities to conduct for monitoring of LULC changes and calculation of ex-post project impact for the monitoring period. The PDD and the added table refer for more technical details to the annexes "Historical Analysis of LULC Changes" and "Projection of future deforestation". These two annexes have been updated and detailed to include all technical details required for another party to conduct the activities, in accordance with findings 2012.19 and 2012.20.

Additionnally, a new sheet ' Monitoring LULCC and Impact" has been added to the workbook "Monitoring Plan-V2.0.xls" to recap the monitoring steps, responsabilites, quality control, archiving.

Auditor Response: Appropriate technical details have been added as specified in the client response.

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

NIR 2012.9 dated 10/03/2012

Standard Reference: VCS PD template

Document Reference: PDD Martin Sagrado VCS Section 4

Finding: The VCS PD template requires section 1.3 to include contact information and roles/responsibilities for any entities involved in the development of the project other than the project proponent. Section 1.3 of the PDD describes roles and responsibilities, but does not include contact information. Please revise the PDD to include this information.

Client Response:

Auditor Response: Version 2.0 of the PDD contains the required contact information.

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

NCR 2012.10 dated 10/21/2012

Standard Reference: VM0015 V1.0 section4.1.2

Document Reference: Annex to PDD: Step 4: Project of Future Deforestation

Finding: An unreasonable assumption that deforestation could occur on slopes up to 77 degrees was used in the constraints analysis conducted in accordance with section 4.1.2 of the methodology. The constraints analysis must be repeated using a more reasonable assumption about the slopes on which deforestation can occur.

Client Response: Constraint slopes has been initially set based on observations of historical deforestation. Between 2000 and 2010, deforestation occured at 77° but after verification it seems the past deforestation on this level of slope was very limited (< 1 ha). An histogram of slopes distribution over areas that have been deforestated between 2000 and 2010 has been built. For more conservative approach and in order to avoid abnormal values, we excluded 5% of higher slope areas which enabled to obtain a 30° slope constraint. Histogram is provided in appendix <Finding 2012.20.docx>. Based on this assumption, all forest areas where slope is more than 30° are considered as constrained. The constraint model has been updated with this new constraint (all other criteria remain unchanged), giving a 781,104 ha maximum potential of deforestation (see Max_Deforestation_Map V2.ers), i.e. 104 times the historical annual average of deforestation (= 781 104/7 509). According to VM0015, there is no constraint to future expansion of deforestation. (see "Answers to findings_V1.0.doc for more details)

An updated version of the technical annex "Projection of Future Deforestation-v2.0" is provided.

Auditor Response: The constraints analysis has been repeated, using an assumption that slopes above 30 degrees represent constrained areas. Even under this much more conservative assumption, the project proponent demonstrated that the project area meets the methodology's requirements for unconstrained expansion of deforestation.

We note that the constraints analysis has been removed from the most recent revision VM0015 so this analysis is no longer required. Nonetheless, including it in project documentation has no material effect on the project's conformance with the requirements of the VCS standard, the the analysis concludes that the area is not constrained.

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

NCR 2012.11 dated 10/21/2012

Standard Reference: NA

Document Reference: Cell F11, F13, GHG Calculations VCS - 10092012 - v1.0 spreadsheet, Long Term C stocks sheet

Finding: A root to shoot ratio for conifer plantations has been applied to estimate below ground biomass of non-forest vegetation. Similarly, a root to shoot ratio for Moist Forests has been applied to both the moist and dry forest strata. Appropriate root to shoot ratios for each vegetation type must be applied.

Client Response: - Root-to-Shoot ratio for Andean Dry Forest has been updated to 0.27 corresponding to Tropical/sub-tropical dry forest (IPCC 2006, Table 3A.1.8).

- For non-forest vegetation class (fallows and plantations), a secondary tropical/sub-tropical forest root shoot ratio has been applied (i.e. 0.42, IPCC 2006, Table 3A.1.8). References of the IPCC tables for the sources of this value seem consistent with the observed content of the class locally (couple year-fallows in slash and burn rotational cycle).

- For Bare Soil, Croplands and settlements stratum, the root-to-shoot ratio remains unchanged, i.e. 1.58, the value for grassland (IPCC 2006 ,Table 3A.1.8).

An excel file named "Biomass Inventor-V4.0-29102012.xlsx" provides results considering all those updates. The GHG calculation workbook has also been updated accordingly (GHG Calculations VCS - v2.0) , as well as all the tables of the PDD.

An updated version of the technical annex "Carbon stocks-V2.0" is provided.

Auditor Response: The project now applies appropriate root to shoot ratios for each vegetation class analyzed. The updated changes in carbon accounting have been reflected in the PD.

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

NCR 2012.12 dated 10/21/2012

Standard Reference: NA

Document Reference: Column O, GHG Calculations VCS - 10092012 - v1.0 spreadsheet, Long Term C stocks sheet

Finding: An incorrect formula has been used to calculate the percent uncertainty in column O of the Long term C stocks sheet of the excel worksheet "GHG Calculations VCS - 10092012 -v1.0." Similarly imcorrect formulas have been applied in the worksheet "Biomass Inventor_v2.0." The worksheets must be updated to correctly calculate percent uncertainty.

Client Response: The formula has been corrected and new versions of the workbooks are provided : "'GHG Calculations VCS- V2.0" and "Biomass Inventory-v4.0"

Auditor Response: The validator checked the updated formula and concurs that the errors have been corrected.

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

OFI 2012.13 dated 10/21/2012

Standard Reference: NA

Document Reference: Biomass Inventory Excel Sheet

Finding: Data entry errors were discovered in cross checking of field datasheets. Please describe and implement a quality control procedure to ensure that data is correctly translated from its initially collected format to electronic formats used for carbon accounting. The errors discovered involve small differences in diameter on less than 1% of the trees randomly selected in a sample of approximately 500 trees cross checked from field sheets by the auditor, and thus do not meet the quantitative materiality threshold established by the VCS standard to constitute a material misstatement. Consequently, this finding does not constitute a nonconformance. However, improved quality control procedures represent an opportunity for improvement.

Client Response: The project proponent reveices the Biomass Invetory excel datasheet already completed by local teams on one side, and the scanned versions of field inventory forms on the other side.

The project proponent will check accuracy of data entry in the excel sheet for a random set of 8 parcels (square root of the total number of parcels) and identify and measure the differences. If the mistakes lead to an error in the evaluation of the average carbon stock higher than 1%, then the project proponent will check all the parcels for inconsistencies and correct all data entered.

Auditor Response: No response is required for opportunities for improvement. The quality control measures described by the proponent are likely to improve the probability of promp identification of any future data entry errors.

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

NIR 2012.14 dated 10/21/2012

Standard Reference: VM0015 Appendix 3; VCS Standard v3.3 section 3.1.4; VCS Standard v3.3 section 4.1.6(2)-(6)

Document Reference: Annex to PDD: Carbon stocks

Finding: Please demonstrate that each allometric equation applied is locally derived and forest type specific or that the equations have been verified as described on page 146 of the methodology. Additionally, the use of an allometric equation constitutes a proponent's choice of a model as described in section 3.1.4 of the VCS standard according to the VCS Program Definitions ("Model: A formula or set of formulae that uses parameters and input values to establish the value of one or more output variables). As such, please demonstrate how each selected model conforms to the requirements of the VCFS Standard v3.3 section 3.1.4, which incorporates section 4.1.6(2)-(6) by reference. In particular, demonstrate how statistical model uncertainty is estimated and discounted in accordance with the standard.

Client Response: Tree Aboveground biomass has been estimated using a local allometric equation developed by ICRAF with data collected from different Peruvian Amazonia forest types, especially from Alto Amazonas region (Yarimaguas) and Ucayali Region (Pucallpa). See ICRAF, 1997. Several forest types were sampled for this study: more than 40 years old primary forest with slight human interventions, 3.5 to 25 years old secondary forests in Yarimaguas, and 3 to 15 years old forests in Pucallpa. See Arévalo et al., 2003.

This equation has been recognized by the Peruvian Ministry of Environment as a suitable methodology to estimate carbon stocks in Peruvian forest ecosystems in a communication to UNFCCC (Ministerio del Ambiente, 2009). Lapeyre et al. (2004) validated this equation in a study carried out in San Martin Region. In addition, it has been used in several studies, including:

- Guzmán, W. and Arévalo, L. 2003. Servicios ambientales de almacenamiento de carbono como activo para el desarrollo en la Amzonia Peruna: avances y retos

- Lapeyre,T., Alegre, J. and Arévalo 2004. Determinación de las reservas de carbono de la biomasa aérea, en diferentes sistemas de uso de la tierra en San Martín, Perú

- Yquise, A., Pocomucha, V. and Vargas, Y. 2008 Carbono almacenado en diferentes sistemas de uso de la tierra del distrito de José Crespo y Castillo, Huánuco, Perú. Tesis de grado, Universidad Agraria de la Selva).

For palm aboveground biomass, a local model has been used. It has been developed by Saldarriaga et al. (1988) through the analysis of long term chronosequence of forest succession in the upper Rio Negro of Colombia and Venezuela.

Models used are simple allometric regressions, developed by qualified experts through local studies that are published by competent organizations. To assess the quality of the fit of these models, besides the statistical significance, some indicators of goodness to fit, such as correlation coefficient, are provided in these publications.

An updated version of the technical annex "Carbon Stocks" is provided and the PDD has been updated.

Auditor Response: The auditor has reviewed the references provided by the project proponent and determined that they provide adequate evidence that the models selected are appropriate to the project circumstances. Adequate evidence has been provided that the equations are locally derived. However, the response does not address statistical uncertainty in the allometric model in a manner that is consistent with section 4.1.6(5) and (6) and 4.1.4 of version 3.3 of the VCS standard. In particular, please demonstrate that the width of a 90% confidence interval around the model's predicted value does not exceed 20% of the estimated value, or that the width of a 95% confidence interval does not exceed 30 percent of the estimated value, or apply an appropriate confidence deduction, as described in section 4.1.4 of the VCS standard v3.3.

Client Response 2: See project proponent's answer in the document "Answers to Findings-V2.0-111612"

Auditor Response 2: After inquiring with the VCS about the requirement for addressing statistical uncertainty of allometric models, Carolyn Ching, Senior Program officer of the VCSA stated "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." The finding is consequently closed.

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

NCR 2012.15 dated 10/21/2012

Standard Reference: AFOLU Non-Permanence Risk Tool v3.2 Section 2.2.1 (d)

Document Reference: Martin Sagrado Risk Report v1.0

Finding: The proponent has claimed a risk score of 0 for factor (d). According to the risk tool, if the management team does not maintain a presence in the country or is located more than a day of travel from the project site, considering all parcels or polygons in the project area, a risk score of 2 applies. The project proponent has not provided evidence that the management team maintains a presence within a day of travel of the northwest protion of the project area. The management team must provided evidence of this presence or apply a risk score fo 2 for this factor.

Client Response: The risk assessment has been corrected with a risk score of 2 for factor (d). A new version of the risk assessment is provided "Martin Sagrado-Risk report-v2.0"

Auditor Response: The risk assessment has been appropriately updated.

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

NCR 2012.16 dated 10/21/2012

Standard Reference: AFOLU Non-Permanence Risk Tool Table 8

Document Reference: Martin Sagrado Risk Report v1.0

Finding: The calculations of the risk score associated with political risk make use of data from 2005-2010. According to the VCS AFOLU Non Permanence Risk tool, WGI scores shall be calculated averaged over the most recent five years of available data. Based on a web review conducted by the validator on 21 October 2012, WGI indicators are available for the year 2011. The project must update the risk score to use the most recent indicators.

Client Response: The risk assessment has been corrected using WGI data from 2007-2011 . The new governance score is -0.280, lowering the risk rating for political risk to a score of 0. The new external risk rating has been updated to 0. A new version of the risk assessment is provided "Martin Sagrado-Risk report-v2.0"

Auditor Response: The most current data has been used for the calculation of the governance score. The risk assessment has been updated appropriately.

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

NIR 2012.17 dated 10/21/2012

Standard Reference: VCS AFOLU Requirements section 3.4.2

Document Reference: PDD Martin Sagrado section 1.12

Finding: Less than 80% of the project area is currently under control of the project proponent, as the concession Monte Cristo has not yet been obtained. The application of the methodology has been assessed at validation as if the entire area is under control and the project is ready to be implemented, in accordance with AFOLU requirements section 3.4.2. To conform with these requirements the project must demonstrate how the monitoring plan is flexible enough to deal with changes in the size of the project, should the Monte Cristo concession not be included. This description should include a description of any changes that will be made to spatial modeling, carbon accounting, or leakage monitoring that would result from a portion of the anticipated project area not coming under control of the project proponent. Please provide a detailed plan for conforming with the requirements of section 3.4.2 of the VCS AFOLU Requirements document.

Client Response: A detailed description of modifications and activities to conduct in case the concession Montecristo does not become under control at first verification has been added to the PDD section 4.3.1.1.

Auditor Response: The monitoring plan section of the PDD now describes appropriate procedures for accommodating changes in the project size. It includes details regarding how the spatial boundaries, baseline calculations, monitoring procedures, and project activity implementation will change if the project area changes in size. These details are sufficient to clarify the monitoring procedures should the Montecristo concession not be included in the project area.

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

NIR 2012.18 dated 10/21/2012

Standard Reference: VM0015 section 2.6

Document Reference: Annex: Analysis of Historical Land Use and Land Cover Changes

Finding: Please provide a more clear and complete description of the steps involved in image processing. At a minimum, please ensure that each of the pieces of information required by section 2.6 of VM0015 V1.0 (page 43) is included, including classification algorithms and software and software versions employed.

Client Response: A detailed description of all information linked to Historical Land Use, Land Cover and Changes Analysis and to be documented according to VM0015 (p.43 of the methodology) is provided in the document "Answers to Findings - V1.0" and has been included in the updated annex "Analysis of Historical Land Use and Land Cover Changes- V2.0".

Auditor Response: The updated annex includes an appropriate level of detail.

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

NIR 2012.19 dated 10/21/2012

Standard Reference: VCS Standard v3.3 section 3.1.4; Section 4.2.2 of VM0015

Document Reference: Annex: Projection of Future Deforestation

Finding: Please provide a more clear and complete description of the methods used in developing a risk map. At a minimum, demonstrate that the selected model conforms to the requirements of the VCS Standard v3.3 section 3.1.4 (which incorporates VCS Standard v3.3 section 4.1.6(2)-(6) by reference) and present a flow-chart diagram in the PD illustrating how the risk map is generated as required by section 4.2.2 of VM0015.

Client Response: Compliance of the model to the requirements of the VCS Standard and methodology VM0015:

Dinamica Ego has been used to model future deforestation location.

DINAMICA is one of the model/software explicitly mentioned by the methodology (part 4.2.4) for that purpose. It is indeed one of the most appropriate models to project future deforestation location as it has been developed for that purpose. Moreover, DINAMICA uses empirical methods for calibration which is very appropriate to Martin Sagrado circumstance where no break or structural changes in the dynamic of deforestation are expected (see analysis of agents and drivers of deforestation) during the baseline fixed period, comparing to the reference historical period.

DINAMICA EGO is a well documented cellular automata model. It has been used in a lot of studies modeling tropical deforestation from local to basin-wide scales, including for some REDD+ projects. Those studies include, among others:

- Soares-Filho, B.S., Pennachin, C.L., Cerqueira, G., 2002. DINAMICA e a stochastic cellular automata model designed to simulate the landscape dynamics in an Amazonian colonization frontier. Ecological Modelling 154 (3), 217e235.

- Cuevas, G., Mas, J.F., 2008. Land use scenarios: a communication tool with local Communities. In: Paegelow, M., Camacho Olmedo, M.T. (Eds.), Modelling Environmental Dynamics. Springer-Verlag.

- Soares-Filho, B.S., Nepstad, D., Curran, L., Voll, E., Cerqueira, G., Garcia, R.A., Ramos, C.A., Mcdonald, A., Lefebvre, P., Schlesinger, P., 2006. Modelling conservation in the Amazon basin. Nature 440, 520e523.

- Texeira, A.M., Soares Filho, B.S., Freitas, S., Metzger, J.P.W., 2009. Modeling landscape dynamics in the Atlantic Rainforest domain: implications for conservation. Forest Ecology and Management 257, 1219e1230.

Considering those information, we consider that DINAMICA EGO conforms to the applicable requirements of the VCS Standard v3.3 section 3.1.4 (which incorporates VCS Standard v3.3 section 4.1.6(2)-(6) by reference), i.e.:

1) Model is publicly available, free of charge, developed by reputable and recognized experts;

2) Model parameters have been determined based upon studies by qualified experts and for the purpose of modeling future tropical deforestation;

3) The model includes an inherent revision process as produced risk maps are compared to 2005-2010 observed deforestation, which enables to select the most suitable one.

Method to produce risk maps

Risk maps have been produced using DINAMICA EGO software using Bayesian method, i.e. weight of evidence method, based on conditional probabilities.

Weight coefficients are estimated based on empirical forest to no-forest transitions (from 2001 to 2005) in each category of spatial explanatory variables. For that purpose, a Factor Map is produced for each spatial explanatory variable and factor maps are then overlapped with LULC maps for 2001 and 2005 time points. The risk maps forecast the probability for a cell at position (x,y) to change from forest to non forest state.

The Weights of Evidence method used by DINAMICA corresponds to a general polytomous logistic equation assigning a transition probability to each pixel. Equation that has been used can be found in dedicated document prepared by ONFI (Projection of Future Deforestation, Preparation of deforestation risk maps part). Once applied to all reference region (RR) pixels, a global risk map is obtained which identify areas most suitable to forest to non-forest transition.

A diagram flow chart summarizing the risk map production using DINAMICA EGO is provided in document "Answers to findings_V1.0.pdf"

An updated version of the technical annex "Projection of Future Deforestation-v2.0" is provided.

Auditor Response: An appropriately detailed description has been added to the referenced appendix, and the project proponents have demonstrated that the model meets the referenced requirements of the VCS standard. The requirements of the VCS standard related to confidence intervals are not applicable to models that predict spatial locations.

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

NCR 2012.20 dated 10/21/2012

Standard Reference: VM0015 Section 4.1.3.1

Document Reference: Annex: Projection of Future Deforestation

Finding: The equation for predicting RBSLRR applied by the project proponent differs in form from that described by the methodology. Though it was demonstrated during the site visit that the equation as applied results in the same deforestation rate as predicted by the equation provided by the methodology in all material respects, such a change constitutes a methodology deviation and must be documented and justified as such.

Client Response: Knowing that the model of future deforestation location can only simulates forest to non-forest transitions (and not the opposite) and in order to remain consistent with this model, a rate of gross deforestation has been calculated (i.e. unbiased by afforestation and reforestation activities) instead of a rate of net deforestation. Indeed, if gross deforestation is much lower than net deforestation, the location model will omit part of deforestation areas and it will do bad projections of deforestation compared to the reality.

In the case of Martin Sagrado REDD+ project, we took the liberty of calculating gross deforestation instead of net deforestation as the impact is null. Indeed, no afforestation/reforestation activities have been observed between 2001 and 2010. In these conditions, the methodology deviation is just a formal one as we can mathematically demonstrate that results from initially used equation and VM0015 one are strictly identical, as shown in "Answers to findings_V1.0.doc".

However, in order to strictly match with VM0015 methodology, the equation has been changed to match the equation of VM0015 methodology, as seen in Projection of future deforestation V2.0 document.

Since results of two equations are strictly identical, there is no impact on the GHG calculations and the resulting tables of the PDD.

Auditor Response: The project proponent has updated the PDD to reflect the use fo the equation as it appears in the methodology, thus no methodology deviation has been applied.

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

NIR 2012.21 dated 12/20/2012

Standard Reference: NA

Document Reference: PDD v.3.0 p 64

Finding: The acronym "ICRAF" is used in the project document, but not defined. Please ensure this and any other acronyms used in the project document are clearly defined.

Client Response: The Project Proponent modified the PD with clear definitions of ll acronym used. (see version 4.0)

Auditor Response: The updated PD defines the requested acronyms.

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

NCR 2012.22 dated 12/20/2012

Standard Reference: Non-Permanence Risk Report Template

Document Reference: Martin Sagrado-Risk Report-v2.0 25102012.pdf

Finding: the Risk Report, as provided in the document with file name Martin Sagrado-Risk Report-v2.0 25102012.pdf, is written using the VCS Non-Permanence Risk Report Template v3.0. Updated to the VCS Program on 4 October 2012 included an update of the Non-Permanence Risk Report Template. The current version of this template is v3.1. According to Sam Hoffer at VCSA, the 6-month grace period for adopting updates to VCS report templates does not apply to the Non-Permanence Risk Report Template. The project must update the risk report to use the most recent template.

Client Response: The Project Proponent changed the template of Non-Permanence Risk report to use template v3.1. See updated version of the Non-Permanence Risk report (version 3.0)

Auditor Response: The updated Non-Permanence Risk report uses the appropriate template.

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