

VALIDATION REPORT: REDD PROJECT IN BRAZIL NUT CONCESSIONS IN MADRE DE DIOS

Document Prepared By Dr Carly Green, EAS Limited on behalf of Scientific Certification Services (SCS)

Contact Information carly.green@enviroaccounts.com

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Prepared By	Dr Carly Green, Environmental Accounting Services
Contact	Unit 1C, 15 Cliff Wilson St, Wanaka, New Zealand, +64 3 667 0242, carly.green@enviroaccounts.com , www.enviroaccounts.com
Approved By	Christie Pollet-Young
Work Carried Out By	Dr Carly Green – Lead Auditor Nicola Webb – Audit Team Member Diana Vasquez – Local Forester / Translator Kelly Milena Polo Herrera – Local Inventory Forester Christie Pollet-Young – Technical Review

Summary:

The “REDD Project in Brazil Nut Concessions in Madre de Dios”, proposed by Bosques Amazonicos SAC (BAM), is located within the political boundaries of the Provinces of Tambopata and Tahuamanu, Department of Madre de Dios. The project areas correspond to 377 Brazil Nut Concessionaires of the FEPROCAMD and make up a total 291,566.5 hectares of which 290,695 hectares are forested.

The Project Proponent is Bosques Amazónicos is a Peruvian company established in 2004, whose mission and vision is to lead the value maximization of forests in Latin American through the recovery and sustainable management of forests, thus contributing towards biodiversity conservation and creating real benefits for the population and for the company. Bosques Amazónicos implementation partner is the Departmental Federation of Brazil Nut Producers of Madre de Dios who represents the 377 Brazil nut concessionaires that form the initial instances of this project.

Baseline agents of deforestation are rural families (either residents in the reference region or immigrants) without any right to deforest the area, who will clear the land for settlements (2.3%), farmland (corn) (3.3%), pasture (51.8%), farming (mixed pasture and agriculture) (39%), mining (3.6%); in all cases, at a subsistence or small-scale. The increase in immigrants to the area is facilitated by the completion of the Interoceanic Highway.

The design of the proposed REDD Project was based on the modular methodology VM0007 developed by Avoided Deforestation Partners, approved by VCS on December 3, 2010. The steps defined for each of the mandatory modules were followed, in accordance with Module REDD-MF for unplanned deforestation.

Over the 31 year project crediting period, the deforested area in the baseline scenario is modelled to be 100,296.7 hectares within the Project Area and 193,542.6 hectares within the Leakage Belt. The total reduction of emissions in the Project Area during the first 10 year baseline period has been estimated to be 21,925,266 t CO₂-e equivalents. This includes the reductions due to leakage, risk buffer and uncertainty of 2,238,559 t CO₂-e, 6,040,456 t CO₂-e and 0 t CO₂-e, respectively.

The VCS v3.2 and supporting relevant guidelines as well as the selected methodology VM0007 were used as the criteria for conducting the validation. The validation process involved a thorough review of the Project documentation, interviews with the Project Proponent and Project Implementing Partner, a site visit to the Project area in Madre Di Dios to validate biomass plot measurements and assess the relevance of the identified drivers and to meet with a number of concessionaires.

Following the validation activities and an iterative exchange of audit findings, the validation team has determined that the Project meets all relevant criteria for REDD Avoided Unplanned Deforestation projects under VCS. In addition, the Project is in conformance with the selected methodology and its associated modules, as listed in Section 1.2 of this document. We conclude that the Project is likely to achieve the estimated emission reductions and, as such, no qualifications or limitations should be added to the validation outcome. Thus, it is the opinion of Scientific Certification Systems that the Project is eligible for registration under the applicable VCS standard.

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1 INTRODUCTION

1.1 Objective

The validation objective is an independent assessment by SCS of the proposed REDD Project in Brazil Nut Concessions in Madre de Dios against all criteria as defined by the Verified Carbon Standard (VCS 2011, v3.2, 1st February 2012).

Validation will result in a conclusion by SCS whether the Project activity is compliant with the VCS v3.2 standard and supporting AFOLU guidance documents and the selected methodology. This validation objective is to determine whether the Project should be submitted for registration. The ultimate decision on the registration of a proposed Project activity rests with VCS.

Validation activities included the following:

- Evaluate the validation 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.
- 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.
- Develop conclusions based on validation standards, submitting any corrective action requests, as applicable.

1.2 Scope and Criteria

The validation team assessed the completeness of the Project Description (PD) provided by the Project Proponent to ensure that all requirements of the VCS standards have been addressed. The validation team assessed whether or not the PD 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 validation team assessed whether the Project itself meets all of the requirements laid out in the VCS standards and is consistent with the PD.

The scope of this report encompasses desk and site assessment activities for REDD Project in Brazil Nut Concessions in Madre de Dios project (the Project) against the following requirements of the Verified Carbon Standard, v3.2 and its supporting documents including the proponents selected VCS approved methodology, namely:

- Verified Carbon Standard, Version 3.2 (1 February, 2012)
- Verified Carbon Standard Program Guide, Version 3.2 (1 February, 2012)
- AFOLU Requirements, Version 3.2 (1 February, 2012)

- REDD Methodology Framework (REDD-MF) (VM0007) (developed by Avoided Deforestation Partners, approved by VCS on 3rd December 2010), and associated relevant modules.
- Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (VT0001) , Version 3 (1 February 2012)

1.3 Level of assurance

SCS provides reasonable assurance that the emission reduction estimations for the “REDD Project in Brazil Nut Concessions in Madre de Dios” (the Project) located in Peru are conservative and meet the VCS criteria and approved methodology, “REDD Methodology Framework (VM0007)”. To ensure complete transparency, SCS has included any clarification or corrective actions that were raised during the validation at the end of this validation report.

1.4 Summary Description of the Project

The project is named “REDD Project in Brazil Nut Concessions in Madre de Dios” and is proposed by Bosques Amazonicos SAC (BAM SAC), the Project Proponent, and the Federation of Brazil Nut Concessioners of Madre de Dios (FEPROCAMD), the Implementing Partner. The Project encompasses 290,695 hectares of forest land in the Provinces of Tambopata and Tahuamanu, Madre de Dios that are zoned and managed as 377 individual Brazil Nut concessions.

Madre de Dios is rich in biodiversity and is at risk of losing its wealth of forest resources due to the deforestation caused by various stakeholders (i.e. ranchers, farmers, mining) as a result of increasing population pressures on the region as a result of the completion of the Interoceanic Highway.

Baseline agents of deforestation are rural families (either residents in the reference region or immigrants) without any right to deforest the area (as the land is designated as Brazil nut sustainable harvesting), who will clear the land for settlements (2.3%), farmland (crop production) (3.3%), pastures (51.8%), farming (mixed agriculture/grazing) (39%) and mining (3.6%); in all cases, at a subsistence or small-scale. The increase in immigrants to the area is facilitated by the completion of the Interoceanic Highway. The estimated deforestation corresponding to the Area of the Project, according to the model during the 31 years of the crediting period, totals 100,296.7 hectares, which represents 34.4% of the area of the project.

The design of the proposed REDD Project was based on the modular methodology (VM0007) developed by Avoided Deforestation Partners. The steps defined for each of the mandatory modules were followed, in accordance with Module REDD-MF for unplanned deforestation.

The total reduction of emissions in the project area during the first ten years has been estimated to be 21,925,266 t CO₂-e. This includes reductions due to leakage, the risk buffer and uncertainty: 2,238,559 t CO₂-e, 6,040,456 t CO₂-e and 0 t CO₂-e, respectively.

VALIDATION PROCESS

1.5 Method and Criteria

The validation team received and reviewed the Project Description, Monitoring Report, Leakage Assessment, Additionality Assessment and supporting documentation 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, and assessing relevant applicability and eligibility criteria. The validation team conducted a desk review of the documentation provided by the Project Proponent and Implementing Partner (Section 1.6). These documents included the Project Description, which includes a general description of the Project, additionality assessment, an assessment of the ex-ante greenhouse gas reductions, a monitoring plan and a leakage assessment. The Project Proponent provided extensive supporting documentation in addition to these primary documents. Supporting documentation included spatial data of the Project boundaries, and monitoring plot locations; a number of contracts, records of correspondence, and standard operating procedures related to the project implementation; management plans developed for the Project area; scientific literature presented by the Project Proponent in support of assumptions made in the project documentation; financial and operational records; and spreadsheets used to make project calculations. During the review, findings were issued as discussed in Section 2.6 and the Project Proponent updated the PD and monitoring report to address the findings by the audit team.

Review of the documentation provided also focused on the quantitative analyses undertaken by the Project Proponent and the Implementing Partner to perform the calculations required by the methodology to estimate the net carbon benefits of the Project. This included a comparison of inventory data measured during the site visit portion of the audit to that presented by the Project Proponent and Implementing Partner. Additionally, calculations made were reviewed by the audit team. Assessment was made of the baseline determination and of the calculation of VCUs.

The last step in the validation process included a final review of the submitted data, responses to the corrective action requests and drafting of the Validation Opinion and supporting Validation Report. These documents were based on the results of the validation assessment. The draft Validation Report was presented to an internal SCS Technical Reviewer who determined the Validation Opinion to be justified given the evidence presented. The report and opinions were then presented to the Project Proponent and Project Implementation Partner for review and comment.

1.6 Document Review

The following documents provided by the Project Proponent were reviewed for conformance against the various elements of the VCS 2011 v3.2 and the selected methodology

1. Bosques Amazonicos SAC (12th June 2012). REDD Project in Brazil Nut Concessions in Madre De Dios. The Project Description. Version 5.0
2. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios “Estimation of carbon stock changes in baseline and greenhouse gas emissions from unplanned deforestation BL-UP” Version 4.0
3. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios ““Estimation of carbon stocks in the above- and belowground biomass in live tree and non-tree pools CP-AB” Version 3.0
4. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios “Estimation of greenhouse gases coming from burnt biomass E-BB” Version 3.0
5. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios “Estimation of emissions from activity shifting for avoided unplanned deforestation LK-ASU” Version 3.0
6. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios “Monitoring of greenhouse gas emissions and removals M-MON” Version 4.0
7. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios “Methods for Stratification of the Project Area X-STR” Version 3.0
8. Bosques Amazonicos SAC (May 2012). REDD Project in Brazil Nut Concessions in Madre De Dios “Estimation of Uncertainty from REDD Project Activity” Version 5.0
9. Castañeros REDD Project Calculations v5 (Excel Calculation Spreadsheet)
10. Winrock Sampling Calculator – Castañeros (Excel Calculation Spreadsheet)
11. X-UNC Castañeros calculations (Excel Calculation Spreadsheet)
12. X-UNC (Excel Calculation Spreadsheet)
13. RISK TOOL Castañeros (June 2012)

1.7 Interviews

The following personnel were interviewed during the audit process:

- Jorge Torres – Bosques Amazonicos SAC (BAM SAC)
- Natalia Woo - Bosques Amazonicos SAC (BAM SAC)
- Pedro Ruiz – Bosques Amazonicos SAC (BAM SAC)
- Florencia Paredes – Concessionaire
- Iván Cárdenas - Concessionaire
- Héctor Edison Cardicel Pérez - Federación de productores de Castaña de Madre de Dios (FEPROCAMD)

1.8 Site Inspections

Two inspections were conducted during this validation. The first visit was conducted in the Project area during the 1st June – 3rd June, 2011. During this visit meetings with concession holders and the head of the FEPROCAMD were held and concession boundaries were confirmed. The drivers of deforestation were also discussed and sites of deforestation visited during our travel through the region of the project area.

The second visit conducted was in response to a finding that required biomass plots to be measured in the project area. This visit was conducted between the 16th through the 21st of August 2011. A total of 6 plots were randomly selected and re-measured to conduct a field review of the Project Proponent's sampling methodology.

The validation site inspection plan is attached as Appendix 2 to this report.

1.9 Resolution of Any Material Discrepancy

Throughout the validation process, there was an iterative exchange between the validation team and the Project Proponent to gather additional information for review and examination. This exchange included Findings—New Information Requests (NIR), Non-Conformity Reports (NCR) and Opportunities for Improvement (OFI)—that were issued by the validation team to the Project Proponent. The Project Proponent responded to NIRs and NCRs in order for the validation team to render a validation opinion. At this time, all findings have been appropriately addressed by the Project Proponent and subsequently closed by the validation team.

The Findings from the validation of the “REDD Project in Brazil Nut Concessions in Madre de Dios” and the proponents responses are compiled in Appendix I of this validation report.

2 VALIDATION FINDINGS

2.1 Project Design

2.1.1 *Project title, summary description, sectoral scope(s) of the project, project type*

The project title is “REDD Project in Brazil Nut Concessions in Madre De Dios” as stated on the cover, and in Section 1.1 of Version 5.0 of the Project Description (PD).

Section 1.1 of the PD provides the summary and objectives of the project, which is to avoid unplanned deforestation by encroachment of ranchers and farmers into forest area.

Section 1.2 of the PD identifies that the Project is consistent with the VCS AFOLU category definition for ‘Reducing Emissions from Deforestation and Forest Degradation’ (REDD), in the activity type of ‘Avoided Unplanned Deforestation and/or Degradation (AUDD)’. The decision tree presented in the selected methodology (VM0007) is explained and applied correctly in Section 1.2 of the PD to support the project categorization.

This Project is a ‘grouped project’ as the intention of the Project Proponent and Project Implementation Partner is to add more concession areas over time. A total of 377 instances are included at validation covering a total of 290,695 hectares of forest.

The Project title accurately reflects the project activities, and the project activities are clearly stated in Section 1.1. This is in conformance with the VCS Standard Section 3.19, and the AFOLU Requirements Section 4.2.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR 2011.1, NCR 2011.4

New Information Requests: NIR 2011.2, NIR 2011.3, NIR2011.7

Opportunities for Improvement: OFI 2011.5

2.1.2 *Project eligibility*

Section 4.2 of AFOLU Requirements: VCS Version 3.2 defines project eligibility under each approved category. Table 1 below outlines eligibility criteria of REDD/AUDD projects as defined in Sections 1 and 3.1 of the PD.

Table 1: Project eligibility criteria (as stated in AFOLU Requirements: VCS Version 3) and evidence of project compliance from Sections 1 and 3.1 of the PD.

AFOLU Eligibility Criteria	Finding
3.1.5 Project activities that convert native ecosystems to generate GHG credits are not eligible under the VCS Program. Evidence shall be provided in the project description that any ARR, ALM or PRC project areas were not cleared of native ecosystems to create GHG credits (eg, evidence indicating that clearing occurred due to	Sections 1.1 and 1.8 of the PD state that the aim of the project is to avoid deforestation. Ranchers and farmers are identified as the main agents of deforestation in the area in Sections 1.1 and 2.4 (Baseline Scenario). Satellite images provided as part of the BL-UP methodology module (VMD0007) from 2000 show that the Project Area was forested

natural disasters such as hurricanes or floods). Such proof is not required where such clearing or conversion took place at least 10 years prior to the proposed project start date. The onus is upon the project proponent to demonstrate this, failing which the project shall not be eligible.	10 years prior to the project start date.
REDD Eligibility Criteria	Finding
4.2.5 Eligible REDD activities are those that reduce net GHG emissions by reducing deforestation and/or degradation of forests. Deforestation is the direct, human-induced conversion of forest land to non-forest land. Degradation is the persistent reduction of canopy cover and/or carbon stocks in a forest due to human activities such as animal grazing, fuel wood extraction, timber removal or other such activities, but which does not result in the conversion of forest to non-forest land (which would be classified as deforestation), and qualifies as forests remaining as forests, such as set out under the IPCC 2003 Good Practice Guidance. The project area shall meet an internationally accepted definition of forest, such as those based on UNFCCC host-country thresholds or FAO definitions, and shall qualify as forest for a minimum of 10 years before the project start date. The definition of forest may include mature forests, secondary forests, and degraded forests. Under the VCS, secondary forests are considered to be forests that have been cleared and have recovered naturally and that are at least 10 years old and meet the lower bound of the forest threshold parameters at the start of the project. Forested wetlands, such as floodplain forests, peatland forests and mangrove forests, are also eligible provided they meet the forest definition requirements mentioned above.	Section 1.1 of the PD identifies encroachment of ranchers and farmers into forest area at a deforestation rate of 1.23% per year. The aim of this project is to avoid deforestation by protection from said encroachment afforded by the Project. Vegetation in the Project Area also meets internationally accepted definition of a forest. Section 4.6 of the Forest Management Plan (accompanying document) identifies the vegetation in the Project Area as being tropical Moist Forest. Satellite images provided as part of the BL-UP methodology module (VMD0007) from 2000 show that the Project Area was forested, confirming that the forest has existed from a minimum of 10 years prior to the Project Start Date.
4.2.6 Avoiding deforestation and/or degradation can affect GHG emissions and removals in a number of ways. The main effect is on carbon emissions that are reduced by preventing the conversion of forest lands with high carbon stocks to non-forest lands with lower carbon stocks. Where the forest is young or degraded, stopping its further degradation and deforestation also allows for additional sequestration of carbon on the land as the forest re-grows (with or without assisted regeneration). Avoiding conversion of forests to cropland or pasture can reduce emissions of N ₂ O and CH ₄ that are associated with biomass burning used to clear the land, fertilizer use and other agricultural practices that would have occurred if the forests had been converted.	Section 3.1 of the PD states that the likely baseline scenario will be conversion from forest to farming and pasture lands. Therefore implementation of the Project will prevent conversion from forest lands with high carbon stocks to non-forest land with low carbon stocks. During the site visit the validation team drove along more than 100km of the Inter-oceanic Highway. Many instances were seen from the road of deforestation and land use conversion to small and medium size farming as well as clearing from alluvial mining.
4.2.7 Activities covered under the REDD project	Section 1.1 Identifies unplanned deforestation by

category are those that are designed to stop planned (designated and sanctioned) deforestation or unplanned (unsanctioned) deforestation and/or degradation. Avoided planned degradation is classified as IFM.	ranchers and farmers. Section 3.1 provides a baseline scenario of conversion to farms and pasture lands. As stated previously, during the site visit the validation team saw many instances of frontier deforestation and land use conversion to farming and pasture land as well as deforestation from alluvial mining along the Inter-oceanic highway. The baseline scenario described in the Project Description was consistent with the activities that were seen during the site visit.
4.2.8 Activities that stop unsanctioned deforestation and/or illegal degradation (such as removal of fuelwood, or timber extracted by non-concessionaires) on lands that are legally sanctioned for timber production are eligible as REDD activities. However, activities that reduce or stop logging only, followed by protection, on forest lands legally designated or sanctioned for forestry activities are included within IFM. Projects that include both avoided unplanned deforestation and/or degradation as well as stopping sanctioned logging activities, shall follow the REDD guidelines for the unplanned deforestation and/or degradation and the IFM guidelines for the sanctioned logging activities, and shall follow the requirements set out in Section 3.1.7.	The project has activities that stop unplanned deforestation and/or illegal degradation on lands that are legally sanctioned for timber production and/or harvesting of forest products (i.e. Brazil Nuts). The project is in its early stages of development; however during the site visit evidence of activities consistent with the list of proposed activities was seen and confirmed. This included the purchase of land for the proposed for the Castana processing facility. This piece of land was marked with project signs. In addition interviews with the Federation and concessionaires confirmed that the proposed project activities were well known by the project partners.
AUDD Eligibility Criteria	Finding
This category includes activities that reduce net GHG emissions by stopping deforestation and/or degradation of degraded to mature forests that would have occurred in any forest configuration, noting the following: a) Unplanned deforestation and/or degradation can occur as a result of socio-economic forces that promote alternative uses of forest land and the inability of institutions to control these activities. Poor law enforcement and lack of property rights can result in piecemeal conversion of forest land. Unplanned deforestation and/or degradation activities can include, inter alia, subsistence farming or illegal logging occurring on both public lands legally designated for timber production and on public or communal lands that are poorly managed or otherwise degraded. b) Methodologies may be designed for frontier and/or mosaic configurations, which are described as follows: i) The frontier deforestation and/or degradation pattern can result from the expansion of roads and other infrastructure into forest lands.	Section 1.1 provides a figure of 1.23% land clearance per year in the absence of the Project. This rate of land clearance is estimated to result in of the deforestation of 100,296.7 hectares in the 31 year crediting period of the Project. This area deforested is equivalent to 34.4% of the Project Area. Section 2.2 identifies local and migrant people as the primary agents of deforestation, converting the forest to ranch and farm land, as such socio-economic forces are promoting the deforestation. Deforestation mapping in the BL-UP module shows deforestation in the region occurring at, or close to access points (roads, rivers, towns), suggesting frontier expansion. The validation team considers that this eligibility criterion is met following a review of the peer reviewed literature and findings from interviews and activities seen occurring in the project area and reference region during the site visit.

Roads and other infrastructure can improve forest access and lead to increased encroachment by human populations, such as subsistence farming and fuelwood gathering on previously inaccessible forest lands. ii) The mosaic deforestation and/or degradation pattern can result when human populations and associated agricultural activities and infrastructure are spread out across the forest landscape. In a mosaic configuration most areas of the forest landscape are accessible to human populations. Mosaic deforestation and/or degradation typically occur: where population pressure and local land use practices produce a patchwork of cleared lands, degraded forests, secondary forests of various ages, and mature forests; where the forests are accessible; and where the agents of deforestation and/or degradation are present within the region containing the area to be protected.	
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Project eligibility under VCS and AFOLU has been demonstrated above as being compliant. Eligibility under VCS approved methodology VM0007 is explored under Section 3.2.2 of this validation report.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.1.3 *Project technologies, and measures implemented*

Section 1.8 of the PD provides clear project objectives, along with the technologies and activities employed to achieve them. The overarching aim is to reduce the progress of deforestation significantly in the forests of Brazil Nut Concessionaires in Madre de Dios, contributing to the development of local people and to the preservation of biodiversity in the project area.

There are also objectives for:

- *Climate*: reduce GHG emissions, and increase carbon reserves
- *Community*: strengthen organisation and capacity of the Castana concessionaires through co-ordinated value adding activities,, increase income, maintain and improve the quality of life of the Brazil Nut Concessionaires and the community
- *Biodiversity*: guarantee and maintain ecological integrity in the Brazil Nut Concessions, preservation of biodiversity

The activities listed in Table 4 of the PD are considered appropriate for forest protection and alleviate the drivers of unplanned deforestation. During the site visit, the validators met with the project proponent and implementing partner and members of the Federation of Castana Producers. The project proponent and

the implementing partner both demonstrated the experience and skills to implement the above mentioned activities. Activities mentioned in the forest management plan were observed being implemented during the site visit such as the purchase of land for the Brazil Nut processing facility.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR2011.11, NIR2011.12, NIR2011.13, NIR2011.15, NIR2011.16, NIR2011.17, NIR2011.18, NIR2011.19

Opportunities for Improvement: OFI 2011.10, OFI2011.14

2.1.4 Project Proponent

Section 1.3 of the PD names Bosques Amazónicos SAC (BAM) as the Project Proponent. Mr Jorge Cantuarias (the General Manager) is listed as the contact person, and contact information including address, telephone, email and website have been supplied.

The aim of the Project Proponent is to “*lead the value maximisation of forests in Latin America*” by the recovery and sustainable management of the forests, contributing towards biodiversity conservation and creating real benefits for the population and company.

The Project Proponent is stated as being responsible for developing forest carbon projects, and a list of main duties is provided.

During the field visit the experience and skills of the BAM SAC team were evident to the validation team. The validation team believe that the BAM SAC team have the capacity to successfully fill the role as project proponent.

See also Section 2.1.12 of this report for more detail of the user rights of the Parties to the Project.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.6

Opportunities for Improvement: None

2.1.5 Project Implementation Partner (and/or other entities)

Section 1.3 of the PD also names The Department Federation of Brazil Nuts Growers of Madre de Dios (FEPROCAMD) as the Implementation Partner for this project. The President of FEPROCAMD, Héctor Edison Cardicel Pérez, has been named in the PD, and his contact address, phone and email have been provided.

The FEPROCAMD was established in 2009 and registered in 2010. This is the main organization representing most of the concessionaires of forestry products other than wood (chestnuts) in Madre de Dios and gathers the associations formed by people and families working on extraction, harvesting,

transformation, and selling of chestnuts. Concession agreements were granted to those associations between 2002 and 2007.

A list of main duties for FEPROCAMD is also provided in Section 1.3 of the PD.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.6

Opportunities for Improvement: None

2.1.6 Project Start Date

Section 1.5 states a project start date of September 24, 2009. This is the date on which the Project Proponents signed an Association contract with FEPROCAMD for the joint development of this REDD Project. Evidence has been provided in the supporting documents. Distinction of the project start date in this way is in conformance with the VCS AFOLU requirements.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR 2011.4

New Information Requests: None

Opportunities for Improvement: None

2.1.7 Project Crediting Period

Section 1.6 advises a project crediting period will start on January 1, 2010, which coincides with the first monitoring period (01/01/2010 to 21/12/2010). The duration of the initial crediting period is 31 years (to December 31, 2040).

The Brazil Nut Concessions are for 40 years, renewable. The Project Proponent expects the concessionaries will renew their contracts with the government, at which point the Proponent would seek a renewal of the Project Crediting Period.

This is in conformance with the VCS Standard which requires that AFOLU projects have a minimum credit period of 20 years, and that the start date is consistent with commencement of the first monitoring period.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.8

Opportunities for Improvement: None

2.1.8 Project scale and estimated GHG emission reductions or removals

In Section 1.7 of the PD Table 3 presents the estimated emissions that will be avoided annually as a result of the project. This table indicates that over the first 10 year baseline period the annual emissions avoided exceed 1 million tCO₂-e. As such, the project will be categorised as a 'mega-scale' within the VCS Standard (i.e. generating >1 million t CO₂-e per annum).

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR 2011.9

New Information Requests: None

Opportunities for Improvement: None

2.1.9 Project Activities

Section 1.8 of the PD outlines activities to directly avoid deforestation by protecting the forest and relieving deforestation pressures. The proposed activities include 13 key activities:

- A1. Implementation of the Forest Monitoring and Surveillance System
- A2. Training Deforestation Agents in alternatives and sustainable productive initiatives
- A3. Implementation of a Tree Nursery
- A4. Forest enrichment through plantation of native species
- A5. Organization and legal formalization of the FEPROCAMD
- A6. Implementation of the Early Alert System
- A7. Implementation of the Conflicts and Complaints Management System
- A8. Implementation and start-up of the Brazil Nut Processing Plant in the Project Zone
- A9. Certification of Brazil Nuts and Brazil Nuts Second Class Byproduct, and Forest Management Certification
- A10. Training in Forestry Management, Utilization of Reduced Impact techniques and Alert System to communities in area
- A11. Cooperation agreements, alliances and training with the Government of Madre de Dios and other public and private actors
- A12. Local Campaigns for Preservation of Forests Goods and Services
- A13. Improved Forestry Management in Brazil nut Concessions

These activities appear to be consistent with the identified threats and appropriate for the described project.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR2011.11, NIR2011.12, NIR2011.13, NIR2011.15, NIR2011.16, NIR2011.17, NIR2011.18, NIR2011.19

Opportunities for Improvement: OFI 2011.10, OFI2011.14

2.1.10 *Project Location*

Section 1.9 of the PD provides appropriate information on the project location. This Section states that the Project is located in the southeast of Madre de Dios, Peru. Map 3a-b provides sufficient visual demonstration of the project location, along with the relative locations of towns, rivers and the Interoceanic Highway. The boundary of some concessions was field checked by the auditor and a KML of the project boundary was supplied. Detail provided appears to be sufficient to ensure accurate monitoring and reporting.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.20

Opportunities for Improvement: None

2.1.11 *Project compliance with applicable laws, statutes and other regulatory frameworks*

Section 1.11 of the PD states outlines the relevant Peruvian laws and regulations pertaining to this project and in each case demonstrates compatibility between the Project and law. This can be reviewed in Table 1 of Annex 7 of the PD.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.21, NIR 2011.22, NIR 2011.23

Opportunities for Improvement: None

2.1.12 *Ownership and other programs*

Section 1.12 of the PD lists the legally binding documents provided by the Project Proponent that demonstrates proof of title and the right of the Proponent to use the land/trees that are generating greenhouse gas emission reductions and removals. The legal documents in the supporting documents are listed below:

- 1) Concession Agreement between the State and the Brazil Nut Concessionaires demonstrating the latter's right to use the land, and forest product.
- 2) Legal Analysis: "Ownership and use rights from environmental services of carbon capture hold (sic.) by Brazil Nut Concessioners of Madre de Dios"
- 3) Assignment of Rights between the Brazil Nut Concessionaires and FEPROCAMD demonstrating that the former has signed over rights to environmental and carbon credits from the Project Area to the latter.
- 4) Agreement of Commitment of Investment and Carbon Credit Transfer Between BAM SAC and FEPROCAMD showing that the two parties have entered into a legal agreement whereby the former has rights to environmental and carbon sequestration/avoided emission credits from the Project Area, in return for development of the Project and investment into business development and marketing activities for FEPROCAMD.

The concession agreement states that concessionaires only have the rights to the Brazil Nuts in their concession area; however subsequent legal analysis provided by the proponent indicates that their rights also extend to environmental services, one of which is carbon sequestration. As such, the four documents listed above adequately demonstrate that the Project Proponent has the right to the use of Project Area for the Project for the duration of the Project Crediting Period.

Sections 1.12.2 to 1.12.5 state that emissions reductions related to the Project or Project Area will not be used for any other emissions trading program, is not part of any other greenhouse gas program, nor has it been rejected by any other programs. The Project Proponent has provided a signed statement in the supporting documents declaring that there is no intention to generate credits under alternative standards, markets or programs.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.24, NIR 2011.25

Opportunities for Improvement: None

2.1.13 Additional information relevant to the project

Eligibility Criteria

As this is a grouped project, eligibility criteria are defined in Section 1.13 identifies project specific criteria that new concessions need to adhere to prior to be included as a new instance at subsequent verification events. These criteria appear appropriate.

Leakage Management

Section 1.8 the PD identifies the main sources of leakage as:

- 1) Expansion of agrarian frontier to install annual crops or cattle (98%)

2) Other drivers (infrastructure, etc.) (2%)

Section 1.13 of the PD states that project activities have been implemented to address leakage issues, and that the Project Proponent is working with stakeholders surrounding the Project Area. Leakage prevention activities are listed as:

- 1) Implementation of the Forest Monitoring System. This is not just limited to the project area, but also includes the leakage belt. Checkpoints are located in the most critical access points throughout the area.
- 2) Implementation of the Early Alert and Complaints Management Systems.
- 3) Promotion of Sustainable Projects among neighboring residents – Agro-forestry, Utilization of other forest resources, Fish farming – to encourage the rational use of non-timber resources in the project area.
- 4) Creation of alliances with local NGOs or Technical Institute to develop pilot projects of alternative development activities.
- 5) Improvement of the organizational capacity of FEPROCAMD.

The listed activities are aimed at mitigating leakage by supporting alternative livelihoods and encourage forest protection by forest monitoring. The activities are intended to be implemented through the members of the Federation as it is a requirement of the project that all project instances are members of the Federation. It was confirmed during interviews with the project proponent and the implementing partner that some activities will be instance specific based on demand, but all activities will be co-ordinated through the Federation.

The Project Proponent is committed to evaluating the effectiveness of the above activities throughout the life of the Project, and to propose new activities to address leakage if necessary.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR 2011.26

Opportunities for Improvement: None

2.1.13.1 Commercially sensitive information

Section 1.13 of the PD states that the following agreements are commercially sensitive:

- 1) Assignment of Rights between the Brazil Nut Concessionaires and FEPROCAMD
- 2) Agreement of Commitment of Investment and Carbon Credit Transfer Between BAM S.A.C. and FEPROCAMD

The information contained within these documents are listed as an Annex 3 to the PD and will be excluded from the published version of the PD. It is considered reasonable to treat these documents as confidential given the commercial nature.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.1.13.2 Further information

Section 4.3 of the PD provides information on approaches to information management pertaining to the Project. Standard Operating procedures will be developed to guide staff, including topics such as the management, processing and archiving of gathered information. Physical records will be stored, and digitised in excel or word files. Files will be stored at the headquarters. Figure 5 provides a diagram of information flow.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.2 Application of Methodology

2.2.1 Title and Reference

Section 2.1 of the PD identifies the title, reference and version number of the VCS approved methodology(s) to be used in the Project. They are listed Table 2 and 3 below:

Table 2: Approved Methodology information

Methodology	Detail	Finding
Title	REDD Methodology Framework (REDD-MF)	The table provided in Section 2.1 of the PD correctly states the methodology used.
VCS code	VM0007	The VCS methodology code is provided in Section 2.1 of the PD.
Version	Version 1.1	The version used by the Project is the most up to date.
Reference	http://www.v-c-s.org/sites/v-c-s.org/files/1_REDD-MF_REDD_methodology_framework_v1.1.pdf	The methodology is available on the VCS website.

Table 3: Approved Methodology Modules and tools

Module or Tool	Code	Version	Finding
Methods for monitoring of greenhouse gas	VMD0015	2.0	Use of this module is compulsory, therefore project

emissions and removals (M-MON)			complies.
Estimation of uncertainty for REDD project activities (X-UNC)	VMD0017	1.0	Use of this module is compulsory, therefore project complies.
Methods for stratification of the project area (X-STR)	VMD0016	1.0	Use of this module is compulsory, therefore project complies.
Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation (BL_UP)	VMD007	2.0	Use of this module is compulsory, therefore project complies.
Estimation of emissions from activity shifting for avoided unplanned deforestation (LK-ASU)	VMD0010	1.0	Project complies. Use of this module is required by REDD-MF for projects avoiding unplanned deforestation, as per Table 1
Estimation of carbon stocks in the above- and belowground biomass in live trees and non-tree pools (CP-AB)	VMD001	1.0	Project complies. Use of this module is required by REDD-MF for projects avoiding unplanned deforestation, as per Table 1
Estimation of greenhouse gas emissions from biomass burning (E-BB)	VMD0013	1.0	Project complies. Use of this module is required by REDD-MF for projects avoiding unplanned deforestation, as per Table 1
Tool for AFOLU non-permanence risk analysis and buffer determination (T-BAR)		3.0	Use of this module is compulsory, therefore project complies.
Tool for the demonstration and assessment of additionality in VCS AFOLU project activities (T-ADD)	VT0001	3.0	Use of this module is compulsory, therefore project complies.
Tool for testing the significance of GHG emissions in A/R CDM project activities	EB_31 (this is a CDM tool)	1.0	This tool is used to justify the omission of carbon pools and emission sources; as such its use is appropriate here. Project complies.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR 2011.27

New Information Requests: None

Opportunities for Improvement: None

2.2.2 Applicability

Section 2.2 of the PD discusses the applicability of the above-mentioned methodology. Each applicability condition of the methodology is discussed and the project shown to comply. Details are provided in Table 4 below.

Table 4: Evidence of project compliance with methodology VM0007, modules and tools, applicability conditions

Applicability condition	Evidence of compliance
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Applicability This REDD Methodology Framework is applicable to project activities that fall within the AFOLU project category “REDD” as defined in the VCS AFOLU Guidance document. By choosing the appropriate modules on the basis of the applicability conditions mentioned in each of the modules, a project-specific methodology can be constructed. The justification of the choice of modules and why they are applicable to the proposed project activity shall be given in Section 2.2 of the VCS-PD.	Project compliance with the REDD project category in the VCS AFOLU Guidelines has already been demonstrated in Section 2.1.2 of this validation report. Sections 1.1 and 1.8 of the PD state that the aim of the project is to avoid deforestation. Ranchers and farmers are identified as the main agents of deforestation in the area in Sections 1.1 and 2.4 (Baseline Scenario). The relevance of these main agents of deforestation was confirmed during the site visit to the project area. The decision tree presented in Section 1, ‘Step 0’ the selected methodology (VM0007) is explained and applied correctly in Section 1.2 of the PD to support the REDD project categorization. The Proponents have selected and listed the appropriate modules for this project as per Table 1 of VM0007.
REDD-MF	
Land in the project area has qualified as forest at least 10 years before the project start date.	Section 2.2 of the PD states that all types of forest within the Project Area were classified as forests from 10 years before the project start date, and can be demonstrated by images used in the historical reference period. Deforested areas undergoing natural regeneration have been excluded. Satellite images were provided to support this conclusion.
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.	Section 2.2 of the PD states that there are no soils within the Project Area composed of 65% organic matter or 50cm thick. Maps and stratification of the area suggest there are no wetlands in the project area. During the site visit there was no evidence of peat swamp forest or peat soils found in the areas of the project visited.
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.	Section 1.12 of the PD and legally binding agreements (supporting documents) between the Peruvian State Government and Brazil Nut Concessionaires in the first instance, and between the Brazil Nut Concessionaires and the latter and FEPROCAMD, and finally between FEPROCAMD and BAM SAC demonstrate the chain of land-use rights over the Project area. Interviews conducted during the site visit confirmed that the Parties were aware of the agreements and the roles and responsibilities of the Parties were clear.
Baseline deforestation and baseline forest degradation in the project area fall within one or more of the following categories: - o Unplanned deforestation (VCS category AUDD); - o Planned deforestation (VCS category APD); - o Degradation through extraction of wood	Section 2.2 states that the Project falls into the category of unplanned deforestation, which was shown in Table 1 of this validation document (under Section 2.1.2 Project Eligibility).

for fuel (fuelwood and charcoal production) (VCS category AUDD).	
Baselines shall be renewed every 10 years after the start of the project except where triggers lead to a more frequent renewal.	Sections 2.2 and 2.3 of the PD both state that the project baseline will be reviewed, and if necessary, renewed every 10 years from the Project Start Date. It was confirmed during interviews with the project proponent that the baseline will be renewed every 10 years from the project start date. These sections of the PD were updated accordingly
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.	Sections 1.12 and 2.2 of the PD state that the Project Area is not part of any other carbon trading or environmental credit scheme. A search of the CDM database did not reveal registered projects within the project area.
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.	Under the baseline scenario for the Project Area (Section 2.4 of the PD), in the absence of the Project, the land would be converted to agricultural lands and mining, and would not be subject to natural regrowth. During the site visit the land use change as a result of the frontier deforestation lead to an alternative land use.
Where post-deforestation land use constitutes reforestation this framework shall not be used.	It is stated in Section 2.2 of the PD that if deforestation occurred in the Project area then the new land use would be permanent, therefore not providing an opportunity for re-forestation to occur. The land use change seen during the site visit appeared to be permanent which is consistent with the text presented in the fieldwork.
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" ⁴ and/or manure lagoons.	Section 2.2 of the PD states that no agricultural land will be flooded, nor any intensification of livestock production occurs as a result of the project or leakage prevention. Interviews conducted during the site visit confirmed that the project participants were familiar with the project activities and there was no indication that the with the leakage avoidance project would lead to flooding or livestock intensification.
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 activities; (ii) have no documented and uncontested legal right to deforest the land for these purposes; and (iii) are either resident in the reference region or immigrants. Under any other condition this framework shall not be used	Section 2.2 of the PD states that the deforestation agents are small farmers, ranchers and miners. Section 2.2 of the PD states that the agents of deforestation have no legal rights to either deforestation or land use. Section 2.2 of the PD states that the agents of deforestation may be residents or migrants. The text presented in the Project Description was consistent with the activities seen and results from the interviews conducted 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 response to NCR27 provided sufficient information to confirm unsustainable fuelwood collection does not occur within the Project Area.
M-MON	
Strata as defined in the relevant baseline modules are fixed and may not be changed without baseline revision. Without application of this module the methodology shall not be used.	Section 2.2 of the PD states that the ex-ante stratification is fixed for this baseline and will not be changed. Interviews with the project proponent confirmed they understood and would comply with this requirement.
X-STR	
Any module referencing strata <i>i</i> shall be used in combination with this module. Strata are only used for pre-deforestation forest classes, and are the same in baseline and actual cases.	Section 2.2 of the PD states that stratification of pre-deforestation forest classes was made using official data from the Madre de Dios Region.
Post-deforestation (conversion) land-uses are not stratified, instead using average post-deforestation stock values (e.g. "Simple Conservative" or "Historical Area-weighted" approaches per BL-UP).	Average post deforestation stock values have been applied in accordance with the Simple Conservative approach (Option 1 in the BL-UP module).
X-UNC	
It is applicable for estimating the uncertainty of estimates of emissions and removals of CO ₂ -e generated from REDD project activities.	This module is used to develop the uncertainty assessment and make the required deductions.
T-ADD	
a) AFOLU activities the same or similar to the proposed project activity on the land within the proposed project boundary performed with or without being registered as the VCS AFOLU project shall not lead to violation of any applicable law even if the law is not enforced;	Section 1.11 of the PD provides sufficient evidence that the project compliance with Peruvian Laws
b) The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. Project proponent(s) proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity.	The accompanying BL_UP module (VMD007) is an existing methodology, not new, and is also step-wise in its approach.
E-BB	
If fire is used to clear the land or constitutes a cause of forest degradation, emissions of CO ₂ , N ₂ O and CH ₄ result. Inclusion in the baseline is always optional. Where used in the baseline, accounting must occur under both the baseline and with-project scenarios in both the project area and in	Section 2.2 of the PD states that fire is used to clear both forestlands, along with post deforestation grass and agricultural lands. Fire was a feature of land use conversion that was seen during the site visit. As such other GHG emissions are being accounted for. Section 2.3 of the PD (Table 8) states the CH ₄ and N ₂ O

the leakage belt. Where fires occur, <i>ex-post</i> the module shall be used to account greenhouse gas emissions.	have been included in the baseline scenario as fire is used in the region for burning of forest and agricultural biomass. Part 1 of the <i>REDD Project in Brazil Nut Concessions in Madre De Dios "Estimation of greenhouse gases coming from burnt biomass"</i> document states that in the project area burnt biomass is produced by farming and grazing activities to increase soil productivity.
BL-UP	
The module is applicable for estimating baseline emissions from unplanned deforestation (conversion of forest land to non-forest land in the baseline case). The following conditions must be met to apply this module. The forest landscape configuration can be mosaic, transition, or frontier. The module shall be applied to all project activities where the baseline agents of deforestation: 1) 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 activities; 2) have no documented and uncontested legal right to deforest the land for these purposes; and (iii) are either resident in the region (reference region—cf. section 1 below) or immigrants. It shall be demonstrated that post-deforestation land use shall not constitute reforestation Where, pre-project, unsustainable fuelwood collection is occurring within the project boundaries modules BL-DFW and LK-DFW shall be used to determine potential leakage³	Section 2.2 states that deforestation activities are not supported by planning or the State, but are small scale by local inhabitants and migrants for self-consumption. As such they do not have any legal right to the land. During the site visit interviews with local people confirmed that the frontier deforestation was illegal. AMny people discussed the challenges of patrolling boundaries and stopping illegal land conversion. In some concession we saw evidence of large scale illegal clearing and stumbled across some illegal activity (felling and sawing timber) whilst in one of the concessions. Section 2.2 also states that reforestation would not occur as new land use would continue. During the site visit tour of the area, there was no evidence of tree planting on the lands that had been deforested. Section 2.2 states that no unsustainable fuelwood collection occurs in the Project Area.
Any module referencing strata <i>i</i> shall be used in combination with this module. Strata are only used for pre-deforestation forest classes, and are the same in baseline and actual cases.	This requirement is met through the project documentation, including the modules and the excel spreadsheets.
Post-deforestation (conversion) land-uses are not stratified, instead using average post-deforestation stock values (e.g. "Simple Conservative" or "Historical Area-weighted" approaches per BL-UP).	Project complies, as per the REDD-MF section earlier in this section, and the BL-UP portion of Section 2.2 of the PD.
LK-ASU	

The module is applicable for estimating carbon stock changes and greenhouse gas emissions related to the displacement of activities that cause deforestation of lands outside the project area due to the avoided unplanned deforestation in the project area. Activities subject to potential displacement are: conversion of forest land to grazing lands, crop lands, and other land uses. The module is mandatory if BL-UP has been used to define the baseline and the applicability criteria in BL-UP must be complied with in full	As the main drivers of deforestation are crop lands and agricultural land uses, these will be potentially displaced by the project. The Project uses the BL-UP module and complies with all of the applicability criteria in full as previously stated in this validation report.
CP-AB This module is applicable to all forest types and age classes. Inclusion of the aboveground tree biomass pool as part of the project boundary is mandatory as per the framework module REDD-MF. Non-tree aboveground biomass must be included as part of the project boundary if the following applicability criteria are met (per framework module REDD-MF): Stocks of non-tree aboveground biomass are greater in the baseline than in the project scenario, and Non-tree aboveground biomass is determined to be significant (using the T-SIG module). Belowground (tree and non-tree) biomass are not required for inclusion in the project boundary because omission is conservative.	Table 10, in Section 2.3 of the PD shows that aboveground tree biomass is included as part of the project boundary. Section 2.2 states that above-ground non-tree biomass has been excluded, as it was not significant in previous results of regional inventories. Table 10, in Section 2.3 of the PD, along with Section 2.2 of the PD states that below ground biomass has been included as it is significant. The field inventory data collected was confirmed during site visit. The data collected was consistent with estimating the selected carbon pools. The field inventory was found to have been conducted within the stated level of accuracy.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR2011.27

New Information Requests: NIR2011.28, NIR2011.30

Opportunities for Improvement: OFI2011.29

2.2.3 Project Boundary

The approved VCS methodology VM0007 requires that the Project Boundary clearly defines the spatial and temporal boundaries, sources and associated greenhouse gas emissions that the project will affect carbon pools, and the sources of leakage.

2.2.3.1 Spatial Boundary

Map 3a-b of the PD provides a well-defined spatial boundary based on land use and legal boundaries already established by the State, for all Brazil Nut concession areas participating in the Project. Section 2.3 states that deforested areas at the beginning of the project have been excluded from the Project Area. This section also states that a leakage belt is composed of other Brazil Nut concession areas not part of the project and areas of other land use such as agriculture and livestock.

Table 9 of the PD states that the net forest area of the Project Area is 290,695 hectares and 718,535 hectares for the Leakage Belt, which is additional to the Project Area.

2.2.3.2 Temporal Boundary

The temporal boundary has been assessed as compliant in Sections 2.1.6 and 2.1.7 (Project Start Date and Project Crediting Period) of this validation report. Further to this, Section 2.3 of the PD states that verification will take place 2 years after the project start and recur at a minimum every 5 years after that. This regime is compliant with VM0007 which requires verification to be undertaken between every 1 to 10 years.

The historical reference period is referred to in Section 2.3 and complies with the requirements set out in the approved VCS methodology VM0007. Where the starting date of this period (2000) shall be between 9 and 12 years in the past and the end date (2008) shall be no more than 2 years from the project start (2009). Section 2.3 of the PD states that the baseline review will be every 10 years, which is compliant with VM0007.

2.2.3.3 Greenhouse Gas Emission Sources

Table 11 of the PD states that CH₄ and N₂O as sources of GHG emissions from biomass burning that have been included in the baseline scenario. Inclusion is consistent with requirements under the approved VCS methodology VM0007.

Emissions from the burning of fossil fuels during the baseline activity of deforestation have been excluded. Exclusion is based on the application of T-SIG.

Emissions from fertilizer use have also been excluded as no fertilizers use has been endorsed as a leakage management technique.

2.2.3.4 Carbon Pools

Table 10 of the PD states that the Project carbon pools are Above-ground Biomass and Belowground biomass. All other carbon pools have been conservatively excluded, which is in compliance with VM0007.

2.2.3.5 Leakage

- In accordance with the methodology, Activity Shifting Leakage was assessed within a leakage belt. The leakage belt was developed in accordance with the methodology leakage module (LK-ASU). Activities that may be shifted to the leakage belt are reported to be:

- Expansion of agrarian frontier to install annual crops or cattle, which represents the 98% of projected deforestation in the baseline.
- Other drivers (e.g. infrastructure, etc.) which represents the 2% of projected deforestation in the baseline.

The Leakage Belt is composed by the other Brazil nut concessions, which do not form part of the REDD Project and areas that comprise other land uses such as forestry and ecotourism concessions, etc. A stretch of the Interoceanic highway (the main access point for the frontier deforestation) crosses the Leakage Belt.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR20110.31, NIR2011.32, NIR2011.33

Opportunities for Improvement: None

2.2.4 Baseline Scenario

Section 3.14 of the VCS Standard states the baseline scenario must be determined in accordance with the methodology and that the choice of baseline scenario is justified.

The Project uses methodology VM0007 which requires the baseline scenario to be selected using the step-wise approach in the “Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities” (Approved VCS Tool VT0001, v1) which can be found at <http://www.v-c-s.org/sites/v-c-s.org/files/VCS%20Tool%20VT0001-%20Tool%20for%20Demonstration%20and%20Assessment%20of%20Additionality%20in%20AFOLU%20Project%20Activities.pdf>. The project's conformance with the applicability criteria has been addressed previously in this Validation Report.

The Project Proponent used this tool in their analysis. The tool's requirements have been specifically addressed in Section 2.4 of the PD. The projects conformance with VT0001 applicability criteria is demonstrated in Table 5 below.

Table 5: VT0001 Applicability Criteria.

Section 1.2	Finding
a) AFOLU activities the same or similar to the proposed project activity on the land within the proposed project boundary performed with or without being registered as the VCS AFOLU project shall not lead to violation of any applicable law even if the law is not enforced;	Section 1.11 of the PD confirms the project or project activities lead to any violation of law.
b) The use of this tool to determine additionality requires the baseline methodology to provide for a stepwise approach justifying the determination of the most plausible baseline scenario. Project proponent(s) proposing new baseline methodologies shall ensure consistency between the determination of a baseline scenario and the determination of additionality of a project activity.	Section 2.4 of the PD demonstrates that the Project Proponent has used a step-wise approach to determine the most plausible baseline scenario (in this case conversion to agriculture and livestock).

Section 2.4 of the PD identifies three potential land use options in the absence of the Project. They are:

- 1) Artisanal Brazil nuts activity (low value-added)
- 2) REDD Project in Brazil Nuts Concessions excluding GHG credit revenues
- 3) Alternative land use activities (Agriculture and Livestock, along with Artisanal Brazil nuts activity).

Each option is explored in detail and justifications for why deforestation and conversion to agricultural/livestock activities are the most likely baseline scenario in the Project Area:

- 1) At the regional level there is a lack of capacity and policy to ensure forest protection, therefore little can be done to stop current and future deforestation.
- 2) Poverty and migration is highlighted as being a significant pressure on natural resources in the area. Madre de Dios Regional Government estimate 300 people per day arrive in the area, settling along the roadside to carry out farming, livestock tending or informal mining. An INEI (2008) studied cited in the PD suggests that between 2007-2037 population growth in the area will double between every 11 and 18 years (high and low scenario respectively) which will lead to ever increasing land use pressures.
- 3) Historical deforestation rates during 2000-2006 averaged 26,000 ha/pa (157,120 ha total). This figure is 210% higher than annual deforestation rates 1990-2000 and is attributed to the increasing number of deforestation agents (migration) and increased access via government and informal secondary roads.
- 4) Deforestation is currently the result of migration, disorganised land occupation, pressure on natural resources, access by informal roads by 'invading' deforestation agents, and poverty.
- 5) A comparative investment analysis and analysis of sensitivity show that without carbon finance, implementation of REDD project activities is not likely due to the high investment cost, lack of other investment agent, and fact that it is not the most financially attractive option.
- 6) The internal rate of return (IRR) for the project activities without the REDD credit finance would be 18.7% compared with existing low value add Castana harvesting being 53.1% and agriculture and livestock being 56.1% according to Table 12 of the PD.
- 7) Conservation of this site in the absence of carbon finance is considered highly unlikely, due to a lack of funds and institutional capacity of the local community to achieve this, increasing population and land use pressures in the absence of carbon finance.

Evidence collected during the site visit, including visits to Brazil Nut concessions, local towns, travelling along the Inter-oceanic highway and interviews with concessionaires confirm the statements presented in the PD. There was an obvious lack of organised planning and the opening of the transport route has created new 'towns' and services along the roadway. These new enterprises are putting pressure on the land along the road. There was also an obvious lack of technical expertise among the Brazil Nut concessionaires with much of the harvesting and processing being done by hand. Brazil Nuts are sun dried and then transported for sale in larger centres such as Lima.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR2011.76

New Information Requests: NIR2011.78

Opportunities for Improvement: OFI2011.67

2.2.5 *Additionality*

The VCS standard has a number of specific requirements for the determining of project additionality, as stated in the "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities" (Approved VCS Tool VT0001). The tool can be found

at <http://www.v-c-s.org/sites/v-c-s.org/files/VCS%20Tool%20VT0001-%20Tool%20for%20Demonstration%20and%20Assessment%20of%20Additionality%20in%20AFOLU%20Project%20Activities.pdf>

In sections 2.4 and 2.5 of the PD the Project Proponents have used the VT0001 stepwise tool to assess additionality. T-ADD is also provided in the accompanying documents. An investment comparison analysis is used (Option II) to demonstrate that the project would not be financially feasible in the absence of carbon revenue. Table 6 below demonstrates project compliance with VT0001.

Table 6: Criteria for setting a baseline scenario as per VT0001 and validation findings.

Steps to Establish a Baseline Scenario	Finding
Identification of alternative land use scenarios to the AFOLU project activity	Section 2.4 of the PD complies with the need to explore credible alternative land use options including: artisanal Brazil nuts activity (low value-added), REDD Project in Brazil Nuts Concessions excluding GHG credit revenues, and alternative land use activities (Agriculture and Livestock, along with Artisanal Brazil nuts activity). It was confirmed during the site visit that all options presented are currently occurring in the region and there is a lack of capacity or infrastructure to stop deforestation. The most likely baseline scenario identified is that of deforestation and conversion to agriculture and/or raising livestock. This conclusion was consistent with the land use conversion seen during the site visit.
Investment analysis to determine that the proposed project activity is not the most economically or financially attractive of the identified land use scenarios	Section 2.5 of the PD provides an investment comparative analysis and analysis of sensitivity (tables 12 and 13 respectively). The first shows that without carbon finance activities of the REDD project would be the least financially favourable with an IRR of 18.70%, investment of USD\$1.6 million and payback period of less than 7 years. Indeed it is unlikely that without carbon finance the USD\$1.6 million investment would be able to be raised to build the processing plant or gain organic certification. Artisanal gathering of Brazil Nuts has the lowest investment (USD\$0.01 million), an IRR of 53.1% and payback period of less than 3 years; however this is also not the most financially attractive option. Agricultural activity requires an investment of USD\$0.03million and has an IRR of 56.1% and payback of also less than 3 years. Based on the land use change patterns that were seen in the reference region during the site visit, the trend toward deforestation for agriculture supports this investment analysis.
Sensitivity analysis	Section 2.5 of the PD provides an analysis of sensitivity which shows that the REDD project without carbon finance remains the least financially attractive option of the three presented. Therefore it provides support that the REDD project is additional.
Barrier analysis	Not required for this project.
Common practice analysis	The T-ADD module in the accompanying documents provides the common practice analysis, leading to the conclusion that the Project is additional. A number of projects in the larger region are presented and have a number of similar objectives: institutional strengthening, sustainable management and management plans, training, mapping, infrastructure development, technical advice, communications and organic certification. However some significant differences also exist between the Project and other initiatives reviewed. Those include: lack of focus on reducing GHG emissions, or avoid unplanned deforestation, other projects are of a smaller scale spatially (average of 50, and a maximum of 200 concessionaires), and temporally (no more than 4 years). Other initiatives have generally not enjoyed economic improvement

	benefits (except CASAL SAC. with 25 concessionaires). During the site visit it was quite obvious that there are a number of REDD activities in the Madre de Dios region. However discussions with local concessionaires that are part of this project as well as participants in other projects there is still a lack of demonstration projects as none have yet reached the operational stage. Because of this REDD projects could not be considered common practice.
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Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR2011.51, NCR2011.56

New Information Requests: NIR2011.52, NIR2011.53, NIR2011.55, NIR2011.57

Opportunities for Improvement: OFI2011.54

2.2.6 Quantification of GHG Emission Reductions and Removals

2.2.6.1 Quantification of baseline emissions

Section 3.1 of the PD states that the Project uses methodology modules BL-UP, X-STR, CP-AB and E-BB. The steps followed in BL-UP are given in Table 7 below.

Table 7: BL-UP steps and project compliance

Criteria (VMD0007)	Finding
Part 1: Definition of Boundaries	
Part 1.1: Definition of the spatial boundaries of the analytical domain	
Reference region for projecting deforestation (RRD). 1) Must be 100% forested at the start of the historical reference period 2) The RRD area shall be equal to or greater than the MREF as calculated in equation 1 and 2 of the VMD0007. 3) The RRD must comply with criteria A-F of Section 1.1.1.1	Compliance with the BL-UP module (VMD0007) in presented in the accompanying Project Description titled BL-UP V 4.0. Satellite images have been provided to confirm that the RDD was 100% forest at the start of the historical reference period (2000). The RRD (1,351,992 hectares) is larger than the calculated MREF (326,950.9 hectares) The Project complies with the requirements of Step 1.1.1.1 of the methodology as the RRD excludes the Project Area (PA) and retains the proportionality requirements specified in the methodology and therefore contains the same: agents of deforestation, landscape factors, transportation networks and human infrastructure, policies and regulations, and exclusion of planned deforestation.
Reference region for projecting the location of deforestation (RRL).	Original non-conformance with the selection of the RRL has been addressed in NCR2011.36 and the

1) The RRL must be a single parcel, contiguous with and including the project area and leakage belt 2) The RRL shall consist of a minimum of 5% non-forest and a minimum of 50% forest. 3) The area of forest in the RRL shall be equal to the area of the RRD ($\pm 25\%$) 4) The RRL must have the same proportion of forests suitable for conversion to the land-use practices of the deforestation agents as the project area ($\pm 30\%$) 5) The RRL shall exclude areas of protected forest where the protected status is enforced	projects RRL has now been demonstrated to be in compliance with the methodology.
Project Area. 1) The project area is a discrete parcel(s) of land that are under threat of deforestation 2) The project area itself shall be 100% forested at time zero	Section 2.3 of the PD demonstrates that the project Area is composed of discrete parcels of land, in this case Brazil Nut concession areas. Section 2.4 of the PD demonstrates that deforestation is increasing in the region in the last 20 years, and that in the absence of the carbon project, would pose a considerable threat to the concession areas that make up the Project Area. The project area was shown to be 100% forested at the Project start date.
Leakage Belt. The leakage belt must conform criteria a-g of Section 1.1.3 of BL-UP The minimum leakage belt area shall be equal to at least 90% of the project area.	Step 1.1.3 of the BL-UP module states that the leakage belt surrounds the project area and is accessible to agents of deforestation. The map provided as part of the Proponent response to NIR2011.26 shows the leakage belt is not spatially biased. Table 9-11 of the BL-UP V4.0 document provide a comparison of the vegetation, physiography, and soil of the project area and leakage belt. All forest types between the PA and LB are within the $\pm 20\%$. The PA and LB are composed of very similar soil types, none triggering the $\pm 20\%$ threshold of difference. Slope and elevation classes are within the required threshold of difference of $\pm 20\%$ There are no navigable rivers in the project area. Section 2.4 of the PD suggests that there is no difference between land use policies and regulations for the PA and LB as both are situated on Brazil Nut concession land and are in the same region. Section 1.1.3 of the BL-UP module states that socio-demographic factors influencing land use change are similar in both the PA and LB, being high internal migration, migratory agriculture and livestock

	activities and urban expansion. The LB is 723,748.3 hectares compared to the PA of 290,995 hectares. This means that the area of the LB exceeds the requirement to be at least 90% of the PA.
Part 1.2 Temporal Boundaries	
Historical Reference Period. 1) All dates required by the methodology must be provided in the format dd/mm/yyyy	Step 1.2 of the BL-UP provides a historical reference period start and finish date of 2000 and 2008 respectively The start and end date for REDD crediting period is given as January 1, 2010 to December 31, 2040, the crediting period being 31 years. The project baseline will be reviewed every 10 years in accordance with the methodology.
Part 2: Estimation of Annual Areas of Unplanned Deforestation	
Step 2.1: Analysis of historical deforestation	
2.1.1 Collection of appropriate data sources. 1) Collect medium resolution remotely sensed spatial data (30x30m resolution or less) for three points in time of no less than 3 years apart covering no more than 12 years (the first point in time being no less than 2 years from the project start date). Three time points over a maximum of 12 years must be included, however, additional points either within or beyond the 12 year period may be added to enhance the deforestation analysis. 2) For the first point in time from the project start date, collect high-resolution data from remote sensors (<5 x 5m pixels) and/or from direct field observations for ground-truthing the medium resolution data collected in the previous step 3) Data must be of sufficient quantity to produce a map that shall have an accuracy of no less than 90% in classification of forest vs non-forest as per step 2.1.4	LandSat data of 30x30m resolution were collected for the years 2000, 2006 and 2009 being at least 3 years apart. The 2009 images are 1 year from the project start date. Field assessment work was completed to ground truth the medium resolution (30x30m resolution) LandSat images. Accuracy of the mapping was determined to be no less than 90% based on the procedures described in Section 2.1.4.
2.1.2 Mapping historical deforestation 1) Using the data collected in Step 2.1.1 divide the RRD into polygons representing 'forest', 'non-forest' and 'deforested'; land at different dates in the past 2) Deforestation maps showing deforestation with paired data (time series) shall be prepared and available for the time periods between each historic image. 3) Remote sensing must demonstrate use of good practice, and mapping methods for each map type (forest/deforestation) have to be able to generate consistent datasets.	The RRD has been divided into polygons representing 'forest', 'deforested', and 'non forest' (the latter under the titles of secondary roads, interoceanic highway, rivers and bridges). Maps of deforestation between 2000-2006 and 2006-2009 are provided as part of the response to NIR2011.39 NIR2011.39 demonstrates the good practice approach in creating the deforestation maps. NIR2011.40 states that there is no planned

4) Planned areas of deforestation must be identified and excluded from both <i>Forest Cover Maps</i> and <i>Deforestation maps</i>.	deforestation in the area; therefore no such areas have been excluded from the Forest Cover and Deforestation Maps.
2.1.3 Calculation of historical deforestation. 1) Calculations must provide the area of forest at the beginning and end of the historical reference period, the number of hectares deforested for each interval of the historical reference period 2) Gross deforestation shall be measured rather than net deforestation 3) Where cloud cover is an issue, multiple-date images for the same 12 month period can significantly reduce cloud cover, and the cloud cover in the final images must be no more than 10% of any image. If there are clouds in either date in question in the area for which the rate is being calculated, then the rate should come from areas that were cloud free in both dates in question. This should be estimated in hectares per year.	Section 2.1.3 of the BL-UP module provided and also the response to NIR41 demonstrate project compliance with the requirement that remote sensing data has no more than 10% cloud coverage. The Project Proponents have removed scene 4-69 in response to cloud coverage being greater than 10%, this area has been removed from the RRD as a result.
2.1.4 Map accuracy assessment 1) A verifiable accuracy assessment of the maps (AA_u) produced in the previous sub-step is necessary to produce a credible estimate of the historical deforestation rate 2) The minimum map accuracy shall be 90% for both the “forest” class and the “non-forest” class. (a map of less accuracy is not acceptable for further analysis)	The accuracy assessment appears to be in conformance with the Methodology VMD0007.
2.2 Estimation of annual areas of unplanned baseline deforestation in the RRD 1) The modelled annual area of deforestation in the RRD shall be calculated across the historical reference period by one of the three approaches: a) Historical average annual deforestation during the historical reference period, b) A linear regression of deforestation during the historical reference period, or c) A non-linear regression of deforested area against time. 2) Any regression must have be significant ($p \leq 0.05$) and have an r^2 of ≥ 0.75 and must be free from bias (demonstrated through selection of the fit with the lowest residuals) 3) Non-linear regression can be used if 5 or more points in time are available for analysis. A linear regression shall be used if there are less than 5 points.	The BL-UP module describes in detail the approach taken to estimate the annual areas of unplanned baseline deforestation in the RRD. The explanation provided along with the supporting evidence appears to be in conformance with the selected methodology.

2.3 Estimation of annual areas of unplanned baseline deforestation in the project area 1) Equations 4-8 must be applied and demonstrated only if no spatial modelling has been completed	Spatial modelling was used to determine the annual area of deforestation so equations 4-6 are not applicable.
2.4 Analysis of deforestation constraints 1) Demonstrate that the remaining forest is not a limiting factor for ongoing deforestation (i.e. forest remaining)	The analysis of deforestation constraints appears to be in conformance with the Methodology VMD0007
Step 3: Location and Quantification of Threat of Unplanned Deforestation	
3.0) Location analysis required for frontier deforestation 3.1.1) Must use peer-reviewed, transparent models/software that incorporates spatial data sets and be able to project location of future deforestation 3.1.2) One factor from each of landscape factors, accessibility factors, anthropogenic factors and actual land tenure and management. Factor maps need to be included. 3.2) Risk map preparation must show the suitability for deforestation of each pixel for deforestation on a numerical scale 3.3) Selection of the most accurate deforestation risk map 3.4) Mapping of location of future deforestation	The project deforestation approach is noted as frontier deforestation therefore location analysis is required and has been completed. The Project uses DINAMICA EGO 1.6 software. It is peer-reviewed and can project the future location of deforestation. Evidence of its relevance was provided by the project proponent and found to be sufficient to demonstrate its applicability. Section 3.1.2 of the BL-UP document incorporates at least one factor from the 4 classes listed. Factor maps have been included. Section 3.2 of the BL-UP document classifies each pixel on a numerical scale of the likelihood. 3.3 of the BL-UP describes and presents the most accurate deforestation risk map. 3.4 of the BL-UP module provides the maps and tables of deforestation over the baseline and crediting periods in conformance with the requirements of step 3.4.2 of the BL-UP methodology module (location analysis).
Step 4: Estimation of Carbon Stock Changes and Greenhouse Gas Emissions	
4.1) Stratification must use X-STR 4.2.1) Forest carbon stocks 4.2.2) Estimation of post-deforestation carbon stocks 4.3) Estimation of the sum of baseline carbon stock changes 4.4) Estimation of the sum of baseline carbon stock changes 4.5) calculation of net emissions	The information provided in step 4.1 is provided from the X-STR module. Pre-deforestation forest strata are presented and appear to be consistent with what is reported in X-STR. Step 4.3 of BL-UP calculates the emissions from biomass burning and estimation of methane and nitrous oxide emissions from farmland in the baseline scenario, as per the E-BB methodology module. Emissions from fossil fuel burning has been excluded which is optional under this methodology and therefore exclusion complies. Step 4.5 of BL-UP calculates net emissions as per equations 23-25 of BL-UP methodology module. The correct application of the equations and completeness of the calculations was confirmed with the review of the Project calculator (Castañeros

	REDD Project Calculations v4 (Excel Calculation Spreadsheet)
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Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR2011.34, NCR2011.35, NCR2011.36, NCR2011.37, NCR2011.45, NCR2011.46, NCR2011.48, NCR2011.68, NCR2011.70, NCR2011.71, NCR2011.73

New Information Requests: NIR2011.38, NIR2011.39, NIR2011.40, NIR2011.41, NIR2011.42, NIR2011.43, NIR2011.44, NIR2011.47, NIR2011.49, NIR2011.50, NIR2011.69, NIR2011.72, NCR2011.75

Opportunities for Improvement: OFI2011.74

2.2.6.2 Quantification of project emissions

Section 3.2 of the PD demonstrates that the Project emissions have been identified as *de minimus* through the application of the T-SIG tool. On this basis they are excluded from calculations. Therefore it has been adequately demonstrated that they can be excluded and it is deemed to be a reasonable conclusion.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR2011.61, NCR2011.64, NCR2011.77, NCR2011.79

New Information Requests: NIR2011.60, NIR2011.62, NIR2011.63

Opportunities for Improvement: None

2.2.6.3 Quantification of leakage

Section 3.3 of the PD gives a summary of how the LK-ASU module was applied; a separate document giving more detail on how the LK-ASU module has been applied is given in "Estimation of emissions due to unplanned deforestation displacement LK-ASU" V3.0. Demonstration of project compliance with the steps of LK-ASU is given in Table 8 below.

Table 8: LK-ASU steps

LK-ASU VMD0010 criteria	
Step 1: estimation of baseline carbon stock changes and greenhouse gas emissions in the Leakage Belt	
A baseline for the leakage belt must be estimated in order to assess leakage due to displacement of unplanned deforestation. For methods to define the baseline of the leakage belt refer to Module BL-UP	Project used BL-UP to define the baseline of the leakage belt
Step 2: Estimation of the proportion of area deforested by immigrant and local deforestation agents in the baseline	
Randomly sample communities living with 2km of the boundaries of the Leakage Belt and Project Area. At least 10% of communities	The project proponents used 2007 National Census information for the project and leakage belt areas. Information gathering during a national census can

shall be sampled. Determine the proportion of area deforested by the population that has been resident in and around the Leakage Belt and Project Area 5 years and the proportion of area deforested by population that has migrated into the area in the last 5 years.	be reasonably assumed to capture greater than 10% of the population.
Step 3: Estimation of unplanned deforestation displaced from the project area to the Leakage Belt	
a) <i>Ex ante</i> assessment. Based on the expected effectiveness of the proposed REDD project activities, conservatively estimate the carbon stock changes and greenhouse gas emissions in the Leakage Belt that are expected to occur due to the implementation of the REDD project activity and that would not occur in the baseline case. This shall be done by multiplying the estimated baseline carbon stock changes and greenhouse gas emissions for the project area by a factor <1.0 representing the % of deforestation expected to be displaced into the Leakage Belt. The result is added to the estimated baseline for the Leakage Belt (Step 1) to estimate carbon stock changes and greenhouse gas emissions in the Leakage Belt under the project scenario. The difference between project and baseline carbon stock changes and greenhouse gas emissions in the Leakage Belt is the <i>ex ante</i> estimated leakage due to displacement of unplanned deforestation from the project area to Leakage Belt.	Part 3 of the LK-ASU document outlines the likely deforestation agents in the leakage belt and gives an estimate of 193,542.6 ha over the project credit period. The proponents provide data to suggest that 5% of the deforestation agents in the population will migrate from deforestation activities in the project area to Leakage Belt as a result of project implementation. Total project emissions are expected to be 64,668,764 t CO₂-e by the end of the project in 2040. The approach taken appears to be in conformance with the selected methodology
Step 4: Estimation of the unplanned deforestation displaced from the project area to outside the Leakage Belt	
Immigrants prevented from migrating into and deforesting the project area are conservatively assumed to migrate to an alternative forest area and to cause deforestation in the alternative area. The alternative area could be within the Leakage Belt or it could be elsewhere in the country. The proportion migrating to the Leakage Belt is calculated as the area of the Leakage Belt as a proportion of the total available forest area nationally.	
a) Define the total available national forest area (TOTFOR). This can be assessed with a coarse-scale imagery (e.g. using MODIS imagery or similar), or with official government statistics on forest area. The total national forest area should be reduced to just the area of forest within 5km of a road or river that is suitable for conversion to agriculture or raising livestock. If boundaries are available then area of protected forests (PROTFOR) and the area of managed forests (MANFOR) may be excluded from the total forest area calculated in this step.	TOTFOR, PROFOR and MANFOR all defined. No 5km buffer was applied to roads or navigable rivers as this information was not available so total national forest inventory was used instead, which is considered more conservative.
b) Calculate the area of forest in the Leakage	PROP _{LB} given as 0.01531 (as per equation 3 of LK-

Belt as a proportion of the total available national forest area ($PROP_{LB}$). Note that if areas of protected forests and/or areas of managed forests are excluded from the total available national forest area they must also be excluded from the Leakage Belt forest area ($LBFOR$).	ASU).
c) Stratify AVFOR by carbon stock. Stratification shall use peer-reviewed assessments of forest carbon stocks across the country in combination with coarse forest type maps. An initial stratification should be derived from biophysical parameters. Carbon stock data shall be associated with each of the strata either through limited field measurements or through values derived from the peer-reviewed literature. Carbon stock shall include only live above-ground tree biomass. AVFOR shall be separated into different strata where contiguous areas of at least 100 ha differ in stocks by $\geq 20\%$. Take the area weighted average carbon stock for all available forest area outside the Leakage Belt (C_{OLB}). The proportional difference in stocks is calculated by dividing the stock outside the Leakage Belt by the stock inside the Leakage Belt.	Project proponents have used peer-reviewed literature, in this case the <i>Second Communication on Climate Change</i> to the UNFCCC.
d) The proportional leakage for areas within immigrating populations would then be equal to the immigrating proportion multiplied by the proportion of available national forest area outside the Leakage Belt multiplied by the proportional difference in stocks between forests inside and outside the Leakage Belt.	Project uses equation 5, the result being a figure of 0.03803 as the proportion leakage for areas with immigrating populations.
e) <i>Ex ante</i> , leakage due to the proportion of the baseline deforestation actors who are displaced to areas outside the Leakage Belt would therefore be equal to the change in stocks in the baseline scenario minus the change in stocks in the project scenario multiplied by the proportional leakage factor for areas with immigrating populations.	Project uses the correct equation to determine that leakage outside the leakage belt by displaced deforestation agents.
f-g)	Not applicable for validation.
Step 5: Emissions from leakage prevention activities	
Where leakage prevention activities are implemented the emissions from biomass burning and fertilizer usage shall be counted and conservatively included in their entirety as emissions caused by project implementation. Stratification of leakage prevention activities shall be on the basis of biophysical parameters.	None of the project activities proposed to prevent leakage are thought to have associated greenhouse gas emissions. This is confirmed with the application of T-SIG to demonstrate project emissions are <i>de minimus</i> .
Step 6: Estimation of total leakage due to the displacement of unplanned deforestation	
See equation 13 of LK-ASU	Application of equation 13 of LK-ASU results in a figure of 2,238,559 t CO ₂ -e in GHG emissions due

	to activity shifting leakage for the first 10 years of the project and 6,661,520 t CO ₂ -e over the entire credit period for projects preventing unplanned deforestation.
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Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR2012.79

Opportunities for Improvement: None

2.2.6.4 Summary of emission reductions and removals

Section 3.4 of the PD provides a summary of the total net greenhouse gas reductions associated with implementation of the proposed REDD project. Equation 1 of Step 5 of VM0007 (REDD-MF) is used to determine total GHG emission reductions as a function of net baseline emissions (from BL-UP), net project emissions (from M-MON) and net leakage emissions (from LK-ASU). As such the project is following the methodology procedures.

Ex ante calculations of net GHG emission reductions suggests the project will avoid emissions of 64,668,764 t CO₂-e over the project life and 21,925,266 t CO₂-e over the first 10 year baseline period.

The PD and supporting documents demonstrates that the approved methodology has been followed and adequately describes the procedure for quantifying net GHG reductions and removals. All relevant equations have been included in the documentation, including symbol explanations and the net change in carbon stocks. The formulas have been correctly used along with the appropriate units. A table of estimated emissions from the baseline, the project, leakage and net GHG removals and reductions has been included in the documentation. The figures presented are consistent with those presented in the excel spreadsheet and appears to be plausible.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.2.6.5 Uncertainties associated with the calculation of emissions

The estimation of uncertainty is briefly described in Section 3.4 of the PD and is presented in more detail in the supporting document X-UNC V5.0 and its supporting calculation spreadsheet. Applicability of this module (X-UNC) has been covered in Section 3.2.2 of this validation document. Demonstration of project compliance with the steps of X-UNC is given in Table 9 below.

Table 9: X-UNC steps

X-UNC VMD0017 criteria	
Part 1: Uncertainty in Baseline Estimates	

Step 1: Assess uncertainty in projection of baseline rate of deforestation or degradation	
Relevant module BL-UP used for estimating baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation.	The Project uses BL-UP module.
b) Unplanned deforestation: where deforestation rate is derived using regression equations of past deforestation rate versus time, the uncertainty introduced by this analysis must be incorporated (see module BL-UP). The r^2 value is a measure of the fit of the equation to the source data. In BL-UP it is a requirement that the relationship be statistically significant and that the input data be evenly distributed across the reference period. Thus the r^2 value presents an indication of how closely the data reflects the model and provides a simple method that can be used here without the need for high level statistics.	NA. Historic rates for each strata where used. No regression equation was applied.
Step 2: Assess uncertainty of emissions and removals in project area	
Relevant module CP-AB used for estimating carbon stocks and changes in carbon stocks in the above-ground and below ground biomass carbon pool, and E-BB for estimating non-CO ₂ emissions from biomass burning	Uncertainty was assessed for the CP-AB and E-BB modules and was found to be in conformance with the methodology modules and calculation approach.
Step 3: Estimate total uncertainty in the baseline scenario	
Uses Equation 3 to determine total uncertainty in the combined carbon stocks and greenhouse gas sources in the baseline case.	Equation 3 of the X-UNC module was correctly applied.
Uses Equation 4 to determine the uncertainty in baseline scenario in stratum <i>i</i>	Equation 4 of the X-UNC module was correctly applied.
Part 2: Uncertainty Ex-Post in the With-Project Scenario	
Relevant modules CP-AB and E-BB have been used	These modules have been used.
Area of deforestation or degradation in the with-project scenario should be tracked directly using the same accuracy assessment criterion as used in the baseline (accuracy of 80% or more as per BL-UP)	There is commitment to complete this level of accuracy assessment criterion.
Uses Equation 5 to determine uncertainty in the combined carbon stocks and greenhouse gas sources in the with-project case in stratum <i>i</i>	Equation 5 of the X-UNC module was correctly applied.
Uses Equation 6 to determine the total uncertainty in the project scenario	Equation 6 of the X-UNC module was correctly applied.
Part 3: Total Error in REDD Project Activity	
Calculation of leakage is conservative in all instances and therefore uncertainty is not considered here. Total project uncertainty is therefore equal to the combined uncertainty in baseline and with-project estimates: uses Equation 7 to determine the total uncertainty for REDD project activity	Equation 7 of the X-UNC module was correctly applied.
Part 4: Implications for Project Accounting	
The allowable uncertainty under this	The precision level of +/- 15% of C _{REDD,t} at the 95%

methodology is +/- 15% of $C_{REDD,t}$ at the 95% confidence level. Where this precision level is met no deduction should result for uncertainty. Where uncertainty exceeds 15% of $C_{REDD,t}$ at the 95% confidence level then the deduction shall be equal to the amount that the uncertainty exceeds the allowable level. Adjusted value for $C_{REDD,t}$ to account for uncertainty shall be calculated as per equation 8.	confidence level was met and therefore no deduction for uncertainty was required.
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Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: NIR2011.58, NIR2011.59

Opportunities for Improvement: None

2.2.7 Methodology Deviations

Section 2.6 of the PD confirms there are no methodology deviations with NA. The validation of all documents which present the methodological approaches confirms this to be the case.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.2.8 Monitoring Plan

2.2.8.1 Approval of the monitoring methodology

Section 4 of the PD details the monitoring methodology. Section 4.2 of the PD confirms that the project follows the guidelines of module M-MON (Approved VCS Module VMD0015). The parameters to be monitored listed in Section 4.1 of the PD are consistent with the requirements of this approved monitoring module.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.2.8.2 Description of the monitoring plan

Section 4.3 of the PD provides a detailed description of the monitoring plan. Given the description of the stakeholders presented in earlier sections of the PD the monitoring plan appears to be workable. An

organisational structure for the monitoring plan has been provided in Figure 4 of the PD and the details on the organisation and responsibilities, information management and in-house audit requirements are documented. All of the specific regenerating, recording, storage, aggregation, collating and reporting requirements for the monitored parameters are adequately presented in this section of the PD.

Table 10: VCS Standard, Version 3.2 required monitoring plan procedures

VCS Required Monitoring Procedures	Findings
1) Purpose of monitoring	The purpose of the monitoring plan is adequately described in Section 4.3 of the PD.
2) Monitoring methodologies, including estimation, modeling, measurement and calculation approaches	These requirements are adequately presented in the parameter tables presented in Section 4.2 of the PD.
3) Procedures of managing data quality	The procedures described in the 'In-house Audit' subsection of Section 4.3 of the PD adequately address the approach to managing data quality.
4) Monitoring frequency and measurement procedures	The procedures described in Section 4.2 and 4.3 of the PD adequately address the monitoring frequency and measurement procedures.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.2.8.3 Data and parameters available at validation

Section 4.1 of the PD lists the data and parameters that were used. Those listed are in accordance with the selected methodology. The sources of the data have been identified and they appear to be relevant and credible. The units of measure have been provided and are consistent with those required by the methodology. The information is presented in accordance with the VCS PD template tables. The information presented is clear, easily understood and adequately justified.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.2.8.4 Data and parameters monitored

Section 4.2 of the PD lists the data and parameters to be monitored. Those listed are in accordance with the selected methodology. All sources of the data and parameters have been identified and units of measure provided. The information is clearly displayed in the required VCS template format and it is clear, and adequately justified.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: NCR2011.65

New Information Requests: NIR2011.66

Opportunities for Improvement: None

2.2.8.5 Applicability and eligibility of monitoring equipment and procedures

Section 4 of the PD information related to the applicability and eligibility of the monitoring equipment and procedures. The monitoring methodology presented complies with that specified in the selected project methodology. The PD clearly identifies what needs to be monitored, providing a list of the specific parameters. The tables presented in Section 4.2 give details on how the parameters will be monitored. The monitoring plan presented in the PD appears to be realistic in its approach and there appears to be no stated or unstated deviations from the monitoring requirements of the selected methodology.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.3 Environmental Impact

Section 5 of the PD, in particular Table 33, describes the environmental impact of the project regarding components such as climate, biodiversity and communities. The information presented is consistent with the Section 3.1.4 of the AFOLU Requirements which states “project proponents shall identify potential negative environmental and socio-economic impacts and shall take steps to mitigate them.”

Section 5 of the PD states that there will be no negative impact on biodiversity resulting from project activities in the project zone will safeguard forest areas and subsequently protect the biodiversity and the areas of wild fauna species habitat, including the vulnerable Brazil Nut ecosystems. There appears to be no specific state legislation to conduct an EIA for this type of project and it is considered that any potential environmental and socio-economic impacts have been assessed.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.4 Comments by stakeholders

Section 6 of the PD describes the project stakeholder consultation process. It appears that a detail communication plan has been developed and implemented. The way in which communication has taken place to date is adequately documented in this section of the PD. The presented material and evidence collected from interviews in the field indicate that the communication strategy has been effective and

there is a commitment to continue engaging with the project stakeholders to achieve successful project outcomes.

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

2.5 Risk Assessment

In accordance with the VCS 2011 Version 3.2, the Project Proponent applied AFOLU Non-Permanence Risk Tool. The initial project risk assessment, the validator's findings and the adjusted final risk buffer agreed is presented in the table below. The risk analysis provided was thorough and accurate. The approach followed the non-permanence stepwise approach as required under VCS v3.2. The assumptions/assertions/estimates made were backed up with data, explanations and/or adequate evidence. There was a logical flow progression from the evidence presented to the level of risk given and the auditor agrees with the level of risk identified.

Table 10: Project Risk Assessment

Risk Factor	Initial Project Finding	Validators Finding	Final Risk Buffer
Internal Risk			
Project Management	-4	-4	-4
Financial Viability	0	0	0
Opportunity Cost	0	0	0
Project Longevity	18	18	18
Internal Risk Sub-Total	14	14	14
External Risk			
Land Ownership and Resource Access/Use Rights	3	3	3
Community Engagement	0	0	0
Political Risk	2	2	2
External Risk Sub-Total	2	5	5
Natural Risk			
Fire (F)	1	1	1
Pest and Disease Outbreaks (PD)	0	0	0
Extreme Weather (W)	0	0	0
Geological Risk (G)	0	0	0
Other natural risk (ON)	0	0	0
Natural Risk Sub-Total	1	1	1
Total	17	20	20

Conformance: Yes ☒ No ☐ N/A ☐

Non-Conformity Reports: None

New Information Requests: None

Opportunities for Improvement: None

3 VALIDATION CONCLUSION

Scientific Certification Services (SCS) has performed the validation the REDD Project in Brazil Nut Concessions in Madre de Dios (the project) for conformance against the Verified Carbon Standard 2011 Version 3.0 (VCS) and its supporting documents including the selected VCS approved methodology VM0007 REDD Methodology Modules (REDD-MF), v1.1.

The review of the project design documentation, field inspections, interviews and subsequent responses to the findings issued during the validation have provided SCS with sufficient evidence to determine the fulfillment of the stated criteria.

SCS gives reasonable assurance that the REDD Project in Brazil Nut Concessions in Madre de Dios (the project) presented in the VCS PD V 4.0 dated 29th May 2012 meets all relevant requirements of the VCS 2011 Version 3.2 for a REDD-AUDD project and correctly applies the appropriate VCS approved methodology VM0007 REDD Methodology Modules (REDD-MF), v1.1

If the Project is implemented as described in the REDD Project in Brazil Nut Concessions in Madre de Dios VCS PD V4.0, dated 29th May 2012 and its supporting documents it is likely to achieve the estimated GHG reductions or removals presented.

APPENDIX 1 – VALIDATION FINDINGS AND RESPONSES

NCR Number 2011.1 of 79 Dated 08/30/2011

Finding:

Please include a 'List of Accompanying Documents' in the PDD. This list will include the title of all documents supplied by the Project Proponent to the Auditor and indicate which if any are confidential. Please ensure the Auditor has all documents on the list when completed.

Proponent Response:

A List of Accompanying Documents is being attached. Annex 2, 3, 4 and 5 can be seen in the PD and the Draft of the Surveillance and Monitoring Plan was already send along with NIR 12; the missing documents of the list are now being attached too.

Validator Response:

The additional information and clarification was sufficient to close this non-conformance report.

NIR Number 2011.2 of 79 Dated 08/30/2011

Finding:

Use of the word 'limited' in the last sentence of the first paragraph is awkward. Please clarify the intention of the sentence.

Proponent Response:

The word “limited” has been change to “within the political boundaries” in the last sentence of the first paragraph. The intention in this sentence is to locate geographically the Project using the political boundaries.

Validator Response:

The additional information was sufficient to close this new information request.

NIR Number 2011.3 of 79 Dated 08/30/2011

Finding:

Perhaps insert arrows or bold type to allow the reader to follow the catergorisation rationale.

Proponent Response:

Bold type letters has been used to indicate the methodological framework and a light purple shade shows the categorization of the project.

Is the forest land expected to be converted to non-forest land in the baseline case?			
YES		NO	
Is the land legally authorized and documented to be converted to non-forest?		Is the forest expected to degrade by fuelwood extraction or charcoal production, in the baseline case	
YES	NO	YES	NO

Avoided planned deforestation	Avoided unplanned deforestation	Avoided forest degradation	Proposed project is not a VCS REDD ¹⁰ activity currently covered by the module framework
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Validator Response:

The response is sufficient to close this new information request.

NCR Number 2011.4 of 79 Dated 08/30/2011

Finding:

Please ensure all information is written in English, where agreements and legal documents are provided in the appendices, please provide english translations (Table 2; caption for Table 5; 'reforestadores' in Table 5; Table 6) .

Proponent Response:

The translations of the legal documents in Annex 1 were already sent in NCR 1. The other observations were corrected:

- Table 5 instead of Cuadro 5.
- Reforestation Concessions instead of reforestadores.
- Table 6 was changed for the new Centroid Coordinates Table, which was correctly written in English (this change was already explained in NIR 25).

Validator Response:

The response is sufficient to close the non-conformance report.

OFI Number 2011.5 of 79 Dated 08/30/2011

Finding:

Please ensure that any acronyms used are accompanied by use of the full name in the first usage, and preferably a list of acrymns. The auditors suggest BAM SAC get the PD proof read to remove spelling mistakes ('community' and 'establishing', Figure 2; 2nd bullet point, p19 replace 'desing' with 'design'), grammatical errors (bullet point 6, p14, 'proved' or 'improved?'), and complicated sentence structure (i.e. 3rd last paragraph on p8; first paragraph on p13; last bullet point p13; last paragraph on page 15, 'inconvenient' poor word choice) to prevent misinterpretation.

Proponent Response:

A list of acronyms has been made to clarify what they stand for. The words “comunntty”, “establisshing” and “desing” have been corrected to its proper spelling; in page 14 we used the word “proved” to specify that the ownership of the Brazil Nut Concessions has been demonstrated; in the third last paragraph of page 8 “The Project proposes that by the end of the first year of being implemented, Brazil Nut Concessionaires are legally organized and represented and that, at the same time, they have their management documents updated (FMP and AOP).” was change to a more simple structure: “For the first year of implementation, the project proposes that the Brazil Nut Concessionaires are legally organized, represented and that they have their management documents in order and properly prepared (FMP and AOP).”; the first paragraph of page 13 was change from “The tree nursery will measure 1 ha and will be located in the deforested area, without vegetation or wild fauna. This is a pasture area, located in the Inter Oceanic Highway.” to “The tree nursery will have an area of 1 ha and will be established in a deforested area, which is covered by pastures, and located near the Interoceanic Highway.” in order to have a more simple structure; in the last bullet point on page 13 “Work plans were executed by Bosques Amazónicos SAC personnel during January and March of 2010. The meetings enabled keep Brazil nut producers

partners informed about the REDD Project, favored debate regarding proposals in order to improve project and finally, to reassure their commitment with the Federation, and also the proposal business/trade association that Bosques Amazónicos SAC established when subscribing the framework contract between Bosques Amazónicos SAC and FEPROCAMD.” was changed to “Work plans were executed by Bosques Amazónicos SAC personnel between the months of January and March of 2010. The meetings served to keep the Brazil nut producers informed about the REDD Project, favored the debate about new proposals in order to improve project and, finally, to reassure their commitment with the Federation, and also the long term business proposal that Bosques Amazónicos SAC established with the subscribing of the framework contract between Bosques Amazónicos SAC and FEPROCAMD.” so it could have a more clear sense and, in the last paragraph of the page 15, the word “inconvenient” was changed and the paragraph took the following form “The project will implement a Conflict and Complaints Management System that will help to solve any problem with the implementation of the activities with the communities of the reference region, if any, in order to continue the good relations.” to prevent any misinterpretation.

Validator Response:

This opportunity for improvement has been closed.

NIR Number 2011.6 of 79 Dated 08/30/2011

Finding:

Please remove the word 'proposer' in the introduction of Bosques Amazónicos (BAM SAC), and replace with 'proponent'. Please also state whether FEPROCAMD is a co-proponent, implementation partner or other entity. With regard to BAM SAC please elaborate on the companies experience in AFOLU project development.

Proponent Response:

Text has been corrected to specify that BAM is a 'proponent' and FEPROCAMD is an 'implementing partner' as, according to the VCS Program Definitions Version 3, an Implementing Partner is the individual or organization operating the project activity or activities in partnership with the project proponent, which is a better description of the role and responsibilities of the Federation as they are not involved in the cabinet technical products but in some of the field activities. BAM's staff has large experience in the design and implementation of AFOLU projects as BAM has validated under VCS and CCB standards, the first reforestation project in Peru (and first in the world with native species), which is also now on the preparation for the first verification. Part of its team has been involved in the first REDD project in Peru validated under CCB standard, the first reforestation project validated under CDM standard, having experience also in FSC sustainable forest management projects (the first one in Peru with indigenous communities) among others. Also part of our staff has been part of Peruvian Official Delegation in UNFCCC COP 15 in Copenhagen and actually is advisor of Madre de Dios Regional Government in GCF Taskforce.

Validator Response:

This new information request has been closed.

NIR Number 2011.7 of 79 Dated 08/30/2011

Finding:

Please explicitly state whether this is a grouped project or not. If it is a grouped project (i.e. allowing future expansion and/or crediting of a project activity subsequent to validation), then please include detail on the eligibility criteria for inclusion of new instances in Section 1.13 of the PD and also address requirements stated in Section 3.7 of the AFOLU requirements?

Proponent Response:

Project is classified as a grouped project as it includes many forest units (Brazil nut concessions) managed individually but with similar conditions. In Madre de Dios, there are near one thousand BN concessions, with around 400 who have already joined the project by signing a contract with their Federation giving the rights for carbon trading in exchange of multiple benefits from BAM investments. In that sense, it is very likely that the rest of the concessionaries will join as benefits become more visible for them (as the end of the building of the processing plant) and a grouped project allows the inclusion of these concessionaries in the framework of already designed project.

As indicated in the VCS Standard v.3.1, the inclusion of new concessionaries must meet following criteria:

- Activities inside these areas must be planned and developed at a sufficient level of detail to enable their assessment of validation
- Subject to the same (or at least as conservative as) baseline scenario
- Characteristics with respect to additionality consistent with the concessionaries that were part of the project before validation
- Meet the applicability conditions set out in the module methodology
- Implement the same, and at the same manner, technologies and measures that are part of the project activity
- Be included in the project area
- Be monitored
- Be validated during the next verification
- Be legal concessions (have proof of title)
- Be eligible for crediting

Based on these general criteria, we took in consideration the following similar conditions:

- Concessionaries that have already joined the project have similar characteristics than the ones who haven't done it yet in terms of size, distance to roads, physiography, condition of the holder of the concession, etc., so as BL-UP module develops, the modeling includes all the BN concessions as part of the RRD and RRL, and even more, concessionaries who haven't joined the project yet are the main destination of potential leakage because of similar degree of capability to deal with newcomers and invaders. In that sense, baseline scenario has been projected and can be determined to the whole Reference Region (including all the Brazil Nuts concessions) for the whole crediting period.
- New concessionaries can access easily to project activities (i.e., organizational strengthening, processing plant, control and surveillance system, etc.) by joining the project. Moreover, most of the activities are being implemented without any difference between concessionaries as the cost, for instance, to monitor risks is the same as both type of concessionaries are spread and mixed. Only some economic benefits as the distribution of carbon profits and the right to be shareholder of the processing plant require the acceptance of the agreement with BAM.
- Monitoring system also doesn't make any difference because deforestation maps and other components of the system can't separate between both of them.
- Finally, the protocol to accept new concessionaries in the project database assures that proof of title and eligibility for crediting is being complied, i. e., Forest Management Plan, Concession Contract with the Peruvian State, No other agreement regarding carbon rights, are the main requirements asked to interested to join the project.
- In that sense, as it has been analyzed in the applicability conditions of each module, both actual concessionaries and potential concessionaries meet the requirements of the methodology

Based on that we develop the following set of criteria for new concessionaries:

- Signing of the standard contract with Federation

- Knowledge and acceptance of conditions of long term agreement between Federation and BAM
- Be the titular of a Valid Concession Contract with Peruvian State
- Not having signed a contract regarding carbon rights with other companies
- In case of forest logging, accept to access to FSC certificate previously to continue logging

Validator Response:

This new information request has been closed.

NIR Number 2011.8 of 79 Dated 08/30/2011**Finding:**

Please provide evidence that the crediting period start date coincides with the first monitoring as per the definition of "Project Crediting Period Start Date" (The date on which the first monitoring period commences) in the VCS Definitions guide. Please also include an end date, and any information pertaining to any future renewal of the project. In Section 1.1 of the PD there is reference to a project lifespan of 75 years and elsewhere in the documentation a period 31 years is mentioned. Please clarify/unify, and also provide all required project dates in the format DD/MM/YYYY.

Proponent Response:

The Project Crediting Period Start Date does coincide with our first Monitoring Period; which will go from 01/01/2010 up to 31/12/2010.

The End Date of the Crediting Period is 31/12/2040, and that gives us a total of 31 years of crediting time. Because the project is being developed in Brazil Nuts Concessions that were granted for 40 years, it is to be expected that at the end of this time, the concessionaries will renew their contracts with the government, gaining 40 new years of concession. Based on this, we have determined that the REDD Project also renew its crediting period; being it the main reason why we mentioned "a project lifespan of 75 years".

Finally, we have unified the project's lifespan in the document, and have modified the format in which dates are presented, following your advice.

Validator Response:

This new information request has been closed.

NCR Number 2011.9 of 79 Dated 08/30/2011**Finding:**

Please explicitly state that the project is a Mega-Project by including the Table 2 supplied under Section 1.7 of the VCS Version 3 Project Description template. Complete implementation of the Project Description Template is required under the VCS Standard.

Proponent Response:

Considering that the project estimates to remove more than 1 millions of tons of CO₂ per year (the top limit according with VCS Definitions version 3), it can be classified as a Mega-Project and it is indicated that way in Section 1.7 with this Chart:

Project	
Mega-project	X

Validator Response:

This non-conformity report has been closed.

OFI Number 2011.10 of 79 Dated 08/30/2011

Finding:

Reorganisation of this section to clearly state the objectives, actions and results of each category (climate, community, biodiversity) will be easier to follow and appreciate and link the rest of the document together. Ideally include a summary table at the start of the section (a column each for objective, action, result).

Proponent Response:

A summary table has been included, and it's being attached to this document.

The code for each Activity and Result expected has been modified to make it easier the reading of this section.

Also, the 1.8 section on the PDD will be reorganized.

Validator Response:

This opportunity for improvement has been closed.

NIR Number 2011.11 of 79 Dated 08/30/2011

Finding:

Please advise what 'AOP' stands for. Text in this section indicates that the Forest Management Plan (FMP) and AOP (?) will be completed by the first year of project implementation. Please justify why these are not available at validation.

Proponent Response:

"AOP" stands for "Annual Operating Plan"; this will be included in the list of acronyms. The "AOP" and other management documents are available at the BAM SAC office in Lima. We will provide you of a copy of all management documents properly translated of one of the concessionaires. It also must be clarified that Forest Management Plan is required to start operations in the concessions and Annual Operating Plan is needed by concessionaries to be allowed to harvest the crop of the year. For this reason, every concessionaries have both documents approved and they have to prepare new AOP every year. That is the reason why we talk inappropriately as "updating of AOP". We have done this clarification in PD.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.12 of 79 Dated 08/30/2011

Finding:

Please provide a copy of the Forest Surveillance Committee 'protocol' mentioned for information gathering and storage, and how this relates to the VCS Standard and selected methodology.

Proponent Response:

In order to develop the first activity proposed by the project "Implementation of the Forest Monitoring and Surveillance System," BAM thought it was better to prepare with the participation of local stakeholders (mainly BN concessionaries) a general plan that encompasses all the System components. An expert was contacted to elaborate this plan, called "Monitoring and Surveillance Plan", and to this date he has elaborated a draft (attached to this document).

The Protocol mentioned in the PD is a very specific document that will define the functions and actions to be taken for reporting the findings of the Surveillance team.

It is worth noting that the whole plan and the protocol will be based in the real conditions of the area, and will support its actions in the legal framework. It is also important to say that this activity seeks to involve every party concerned in the protection of the Brazil Nut concessions. We expect to have this document completed in the next 3 months.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.13 of 79 Dated 08/30/2011

Finding:

Please provide either a) a key stating the name of each checkpoints (PV1-6) so that the auditors can understand how the checkpoints relating to the explanation in the text after Map 1.; or b) in the text after the map provide the PV number (i.e. "Surveillance point at Planchón (PV1, Map 1)".....)

Proponent Response:

The number of each checkpoints have been added after the name of the town as indicated below:

Surveillance point at Planchón (PV4).

Surveillance point at Alegría (PV3)

Surveillance point at Mavila (PV2)

Surveillance point at Alerta (PV1)

Surveillance point at Boca Paríamanu (PV5)

Surveillance point at Boca Inambari (PV6)

Validator Response:

The response is sufficient to close this new information request.

OFI Number 2011.14 of 79 Dated 08/30/2011

Finding:

Please clarify: is 'soil use' supposed to read 'land use'?

Proponent Response:

"Soil use" has been changed for "Land use" throughout the PD.

Validator Response:

This opportunity for improvement has been closed.

NIR Number 2011.15 of 79 Dated 08/30/2011

Finding:

Please clarify: "Develop a plan to limit landmarks in the most vulnerable areas until all vertices are completed". Should 'limit' be replaced with 'erect' or 'install'? If not please reword sentence to reflect intention

Proponent Response:

The word "limit" has been replaced for the word "install".

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.16 of 79 Dated 08/30/2011

Finding:

Please provide more information on the following statement: "This includes training miners, present in areas very close to the southern section of the Project Zone, so that they are legally authorized to engage in mining activities and limit themselves to the mining areas described by Emergency Decree 012-2010." Please elaborate on how training will legally authorise them to mine and limit them to mining areas.

Proponent Response:

The main reason why some miners are illegal is that they don't comply with the legal and technical requirements to obtain the environmental certificate. In most cases, even they don't know them.

Moreover, miners who have already been assigned the rights of an area, can also be defined as miners with illegal activity, as they don't comply with the requirements mentioned above. It's not a matter of economic limitation. Training will be focused in explaining to specific groups of miners, the ones who are organized and interested to reduce their negative impact on water quality and natural forests (mainly the ones who work on river sands not within forests), which are these requirements. It could include also techniques to replace the use of mercury in the gold process (ecologic gold production). Additionally, it must be highlighted that training to miners is part of the integral strategy to combat illegal mining, as they use to argue that they don't have any kind of alternatives and support. Training won't replace the strengthening of enforcement actions to eliminate illegal mining and control its expansion to new areas, that will be led by regional authorities with the support of project partners.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.17 of 79 Dated 08/30/2011

Finding:

What does ZEE stand for?

Proponent Response:

ZEE is the acronym for "Zonificación Ecológica Económica" (Ecological – Economic Zoning). It will be properly translated and included in the list of acronyms.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.18 of 79 Dated 08/30/2011

Finding:

Please provide a copy in English of the Forest Management Plan. Please also provide a definition of 'dasometric'.

Proponent Response:

Dasometric refers to the type of measurement that quantifies the growth of the trees and forest. In Spanish the word is "Dasometría", but the correct translation is "Forest Mensuration".

Attached, you will find a standard example of a Forest Management Plan, translated to English.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.19 of 79 Dated 08/30/2011

Finding:

Please clarify whether there is harvesting in the project area in the project scenario.

Proponent Response:

The recently approved Forestry Law specifies that forest logging will be allowed in non timber forest concessions only exceptionally if it has been considered in the Management Plan. It means that they will need to do an adjustment of their management plan if they want to continue harvesting wood. With the previous law, logging was permitted after the approval of a Complementary Plan and an estimate of 30% of total Brazil nut concessionaires were accessing to this option. The project plans to agree with concessionaires who still want to do wood harvesting to move toward FSC certification previously in order to apply to the requirements of the module revision.

In non timber forest concessions, forest resources harvesting proceeds exceptionally always that it does not denature the objective of the concession, does not put in risk the management of the

non timber forest resource concessioned and it has been considered in the approved management plan (art. 57)

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.20 of 79 Dated 08/30/2011

Finding:

Please provide a KML file for the project location.

Proponent Response:

Please find attached KML files of project area and leakage belt.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.21 of 79 Dated 08/30/2011

Finding:

In section 1.11, there is a heavy focus on the description of environmental laws related to the project. Please provide evidence to support compliance with relevant employment, health and safety, development (processing plant) and food processing/packaging laws as they are relevant to the Project Activities.

Proponent Response:

Based on your observations, this section has been reframed in a way that we clearly state that the Project complies with relevant laws. A document is being attached with this new information, which also includes the previous tables (environmental, labor, etc. laws) as annexes.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.22 of 79 Dated 08/30/2011

Finding:

Please provide a map of the economic and ecological zoning of Madre de Dios as discussed in Table 5, under the title of Regional Ordinance 032-2009GRMDD/CR. A visual representation of this may support the argument/evidence of deforestation threat

Proponent Response:

Please find the required documents in the files attached to this NIR

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.23 of 79 Dated 08/30/2011

Finding:

Are there any mining concession overlapping the Project Boundary? Would gold mining take landuse priority over the project in the event of a competition for land rights? If so how will the Project Proponents manage the competing interests? In the absence of a mining concession does the Emergency Decree N.012-2010 allow miners to mine within the Project Boundary as of right?

Proponent Response:

Based on the map included in the Emergency Decree that establishes a zone of mining exclusion, that allow to do mining in that area, some Brazil nut concessions are potentially affected by mining, as can be

seen in following chart.

OVERLAP BETWEEN BRAZIL NUT CONCESSIONS AND MINING PETITIONS

	# of BN concessions	Ha overlapped
Concessionaries that have joined the project	10	9,369
Concessionaries that haven't joined the project	68	37,905
TOTAL CONCESSIONARIES	78	47,275

The ED gives the preferential rights to whom had any kind of right to develop an activity previously granted, which in all the cases belong to the Brazil nut concessionaries. Specifically, the ED mentions in the Article 7 that holders of rights for mining activity already given only could implement its activity when they obtain previously the approval of the environmental certificate and this certificate only may be approved (in areas where mining petition overlaps a forest concession) if they receive a positive technical opinion of National Forest Authority, which is unlikely to happen as they have been forest concessions per decades. An additional requirement sets that once miners have the environmental certificate approved, they will need to have the right to use the land surface, which is already given to the Brazil Nut Concessioners.

Even though, the ED causes a significant threat over Brazil nut concessions overlapped with mining petitions, the ED also gives a legal protection to concessionaries that, of course, needs to be enforced with the support of the project activities. As it is being implemented already, the project is already implementing a Control and Surveillance System, which includes legal support and alliance with the Police and the Attorney to guarantee the enforcement of the law. Additionally, it must be highlighted that new petitions are forbidden in areas outside allowed in ED.

Validator Response:

This response was sufficient to close this new information request.

OFI Number 2011.24 of 79 Dated 08/30/2011

Finding:

Please provide a set of translated legal documents related to the project participants.

Proponent Response:

Response to new observation: Please find attached the missing document referred in the new observation of OFI 24. The document name is "Declaration of Commitment", which can also be found in Appendix 2 of the PD.

The legal documents have already been sent to the validators. The scanned original documents are listed in the appendices of PD, and their translations were sent with NCR 1. These documents are:

- Concession Agreement for Management and Exploitation of Forest Products other than Wood in Madre de Dios Region (between the State and the Brazil nut concessionaire).
- Assignment of Rights Agreement (between the Brazil nut concessionaires and the FEPROCAMD).
- Framework Contract Investment Commitment and Transfer of Credits for Reducing Carbon Emissions (between FEPROCAMD and BAM).
- Statement of the BAM Manager

Validator Response:

This opportunity for improvement has been completed.

NIR Number 2011.25 of 79 Dated 08/30/2011

Finding:

Paragraph 1 at the top of page 27 states that there are '385 concessionaires that form part of the project'. Are the 385 concessionaires each represented by the 187 polygons listed in Table 6? Is so please explain the relationship between the polygons and the number of concessionaires.

Proponent Response:

Table 6 shows the coordinates of the 187 vertices of the Project Zone, which used to define a continuous area formed by the Project Area and the Leakage Belt. This coordinates did not make any reference to any concession or group of concessions.

Given that all deforested areas were excluded from our project concessions in order to comply with the methodology requirements, all resulting polygons have several vertices making it difficult to show them all in one table (this can be seen in the KLM file already send to the validators).

We have updated our database to add 9 concessions to our Project Area, as their owners have recently joined the Project. This gives us a total of 394 concessions that make up our actual Project Area. A list of each polygon's centroid coordinates will be added to the PDD, and is also being attached to this NIR.

Validator Response:

The response was sufficient to close this new information request.

NIR Number 2011.26 of 79 Dated 08/30/2011

Finding:

Please list the potential sources of leakage. Please also provide a map showing the 'leakage belt' referred to in the text. Is the 'Forest Management System' referred to in this section the same as the 'Forest Management Plan' referred to in Section 1.8 of the PD. If not, can we please have a copy of the forest Management System also?

Proponent Response:

There is not any reference to a Forest Management System, but to Forest Management Plan and Forest Monitoring System, which are different concepts, referring the first to the document where main harvesting practices are specified, while the last one to the set of activities addressed to monitor the status of the forest (the first activity of the Climate Category mentioned in section 1.8 of the PDD). A leakage belt map is included as an attachment to this NIR. The main sources of leakage identified in the project are:

- Expansion of agrarian frontier to install annual crops or cattle (98%)
- Other drivers (infrastructure, etc.) (2%)

In bullet point 1 of section 1.13, the correct term should be "Forest Monitoring and Surveillance System" (not Forest Management System), which is the first activity proposed by the Project. We mention it in this section because the effect of this activity will be felt in both, Project Area and Leakage Belt, as the Check Points are located among the Interoceanic Highway (more details can be seen in section 1.8, activity A1).

Validator Response:

The response is sufficient to close this new information request.

NCR Number 2011.27 of 79 Dated 08/30/2011

Finding:

Please insert the full title of the methodology. Please also list each module used, VCS code, version number, set out in a table as per Table 1 of VM0007. Under applicability of the methodology (section 2.2 of the PD) please demonstrate project compliance with each modules applicability condition/s.

Proponent Response:

All the observations were solved in the PDD and a file is also being attached to this NCR. The first one is the correction of the section 2.1 and the other is the analysis that supports the lack of firewood collection

in the project area.

New Observation: please change the version number for M-MON (listed in Table 1 of the response) to v1.1. For applicability to Cp-AB. It has been stated that above-ground non-tree biomass has been excluded based on results from regional inventories. Please demonstrate that the regional inventories mentioned have been taken in similar or equivalent forest strata to those within the project boundary. (i.e. is the data from a representative forest)

Response: The document containing section 2.1 of the PD has been updated and is being attached. Another word document with the description of the Forest Strata used in the inventory made in Native Community of Belgica is also being attached. Here we state that the stratification used there is similar to our stratification, because both were based in Ecological Economic Zoning (ZEE) forest strata.

The details of Belgica's inventory were found in the FONAM's internal document "Protocolo para el inventario de stocks de carbon en Proyecto REDD Belgica" developed by FONAM's advisors.

Validator Response:

The response is sufficient to close this non-conformance report.

NIR Number 2011.28 of 79 Dated 08/30/2011

Finding:

Please provide evidence/references that confirm that the Project Area does not contain soils with organic matter over 65%, or were over 50cm thick?

Proponent Response:

As we mentioned in the PDD, we have used the official data from the Economic-Ecologic Zoning (ZEE) of Madre de Dios which is a complete study that includes several thematic reports of soil, vegetation, physiography, land use, socioeconomic status, etc., as a base for the stratification of our Project Area. Specifically we have grouped the ZEE's forest strata in order to comply with the 10 strata limit set by the GOFC-GOLD Sourcebook as can be seen in the following chart for the Swamp Trees (PA) stratum:

Project Strata	ZEE Strata (Sub-strata)	Ha	%
PA (Swamp Trees)	Ag (Palm Trees)	2,808.96	22.17
	PaA (Swamp Trees)	5,220.86	41.2
	PaH/Ar (Shrubby Swamp/ Bushy)	0.49	0.004
	BLLm (Meandering Plains Forest)	36.42	0.29
	BTaPa (High terrace forest with swamp areas)	4,604.90	36.34
Total		12,671.63	100

From the analysis of the results presented in the thematic reports of soil and forest and the revision of studies in "Aguajales" in the region of Loreto we have found that Ag and PaH/Ar have soils that can be considered as peats and for this reason we have removed them from our Project Area.

Validator Response:

The response is sufficient to close this new information request.

OFI Number 2011.29 of 79 Dated 08/30/2011

Finding:

Please remove the duplication of the last two bullet points at the bottom of page 28

Proponent Response:

The duplication has been removed.

Validator Response:

This opportunity for improvement is closed.

NIR Number 2011.30 of 79 Dated 08/30/2011

Finding:

Please explicitly state and provide a reference for the average size of farms, ranches and miners that are identified as agents of deforestation. To meet the methodology applicability criteria which does not allow for large or industrial scale crop production or ranching.

Proponent Response:

We are attaching a document with the literature evidence that supports the definition of small scale production for the three main activities in the region: Agriculture, Cattle raising (pastures) and Mining.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.31 of 79 Dated 09/02/2011

Finding:

How do the 187 polygons relate exactly to the 385 concessionaires signed up to the project as stated in Section 1.21.1 for the PD? Please explain what the polygons represent (i.e. individual concessionaires or something else). Also please advise if any other polygons/concession areas will be added in the future (i.e. grouped project)

Proponent Response:

We have already clarified this item in NIR 25. The 187 coordinates didn't refer to any concession, but to the whole of the Project Zone, described as the continuous area containing the Project Area and Leakage Belt.

The concept of "Project Zone" will not be used anymore, and these 187 coordinates are not valid now.

It is important to mention again that we have updated Project Area, as new concessioners have joined the project and that by now they totalize a number of 394.

As we are a Grouped Project, we expect that all the remaining Brazil Nuts Concessions (about 1000 in the region) join the project. Actually, some of these areas are forming our Leakage Belt, because it is expected that the immediate leakage occurs in areas most similar to our Project Area. In the PDD we are including a map showing the location of them.

New observation: This issue has been re-opened as the following is raising concerns for us: The proponent needs to stop adding land area and landowners. They need to remove landowners added since validation visit (and add them at verification), or sanction another validation trip to Peru to validate the new areas/landowners.

Response: the concessionaires added after the field visit are now removed, but there is one clarification we would like to make. Even though we had 385 concessionaires associated to BAM at July 2011, only 377 of them are part of the Project Area even though we are carrying out all the project activities with all of them. The 8 concessions that are not part of the project area nor in the calculations of emissions reduction are showed in the attached map, red colored. They would not be included in the future based on the fact of its distance with the other concessions, even though as mentioned before they will receive all the benefits of the project implementation.

In the other hand, there are other concessions that have recently joined the project and will be included in the verification report.

Finally a list is also being attached with the information of the 377 concessions forming our actual project area. The sum of the areas presented there does not represent the real project area as some have errors of overlap or duplication, for which we are currently working with the concessioners who want to correct their boundaries. Another problem of this gross sum of hectares is that it contains some deforested areas not taken into account as a part of the project area, accordingly with the BL-UP requirements.

We also would like to receive a confirmation that new concessionaries who join the project during project implementation will be able to be considered as part of the project area for the next verification period.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.32 of 79 Dated 09/02/2011

Finding:

Please state what PGM stands for.

Proponent Response:

PGM (also called PGMF) stands for "Plan General de Manejo Forestal", which in English will be the Forest Management Plan, and included in the list of acronyms.

Validator Response:

The response is sufficient to close this new information request.

NIR Number 2011.33 of 79 Dated 09/02/2011

Finding:

Does 'Above-ground Biomass' include above ground tree and non-tree biomass, or just above-ground tree biomass? Please list and provide the justification for the pools excluded (i.e. deadwood, wood products, litter and soil organic carbon in Table 9), for transparency.

Proponent Response:

Above-ground biomass only includes Above-ground tree biomass. The justification for the exclusion of other pools is listed below:

Carbon Reserves	Included / Excluded	Justification
Above-ground biomass	Included	Carbon in tree and palm biomass was estimated in similar stratum of the project area in the Madre de Dios region and in stratum of the project area in a scenario prior to the deforestation. Above-ground non tree biomass is not significant, based on the results of the inventory made in the Native Community of Belgica; therefore it is conservatively omitted. The carbon stock in post-deforestation biomass was estimated.
Belowground biomass	Included	Included. Significant in tropical forests.
Dead-Wood	Excluded	Not a significant pool, based on the results of the inventory made in the Native Community of Belgica.

Harvested wood products	Excluded	The volume of harvested wood is similar in baseline and project case, as it has always been regulated. The use of this wood will be more efficient in project case because FSC certification will be implemented.
Litter	Excluded	According to the Methodology Framework (REDD-MF) and the CP-AB module, this pool is not significant and can be conservatively omitted.
Soil organic carbon	Excluded	The REDD-MF module mentions that the exclusion of this pool is always conservative.

The Native Community of Belgica is located in the north-east part of the Department of Madre de Dios, very close to our Project Area. Like the former, its stratification is based on the Forest Map of the Economic-Ecological Zoning, and most of the strata are present in both areas.

As Belgica's forestry inventory included non-tree, dead wood and litter pools; its results were taken as a reference in designing the inventory of our area and choosing the carbon pools. As can be seen in the following table, carbon stocks in the last three pools are insignificant (less than 5% of the total carbon stocks) and ought to be excluded according to the REDD-MF and CP-AB modules.

Validator Response:

The response is sufficient to close this new information request.

NCR Number 2011.34 of 79 Dated 09/02/2011

Finding:

The RRD needs to be consistent with the specification provided in Table in Section 1.1 of the BL-UP methodology module. Please confirm that the RRD does not contain the Project Area or Leakage Belt, and consists of 100% forest land at the Project Start.

Proponent Response:

The RRD established complies with the criteria set in the BL-UP module:

- It is 100% forest at the start of the historical reference period (2000).
- It is bigger than MREF.
- It does not include Project Area and Leakage Belt.
- It is formed by parcels and is representative of the general patterns of deforestation that affects the Project Area.

It should be considered that the RRD was stratified so that the different weights of the deforestation patterns are better represented.

The other requirements as well as a map of this boundary can be seen in the new version of BL-UP module.

Validator Response:

The response is sufficient to close this non-conformance report.

NCR Number 2011.35 of 79 Dated 09/02/2011

Finding:

Please use terminology as per the methodology modules (i.e. Rather than changing RRD to 'Project Zone') to avoid confusion.

Proponent Response:

The terminology used in the BL-UP document (and in all other documents) has been changed in order to

employ the correct terminology of the methodology.

Validator Response:

The response is sufficient to close this non-conformance report.

NCR Number 2011.36 of 79 Dated 09/06/2011

Finding:

The terminology needs to be consistent with the selected methodology to avoid confusion with areas specified. The module requirements for each area need to be individually addressed.

Reference Region for projecting rate of deforestation (RRD)

The RRD meets the requirements set in the section 1.1.1.1 of the VMD0007 module. This conditions are detailed next:

- It is 100% forest at the start of the historical reference period (2000).
- It is bigger than MREF
- Does not contain the Project Area or the Leakage Belt.
- It is formed by parcels and is representative of the general patterns of deforestation that affects the Project Area
- The boundaries of the RDD have been defined in accordance to the different criteria (agents of deforestation, landscape and social factors, policies and regulations, among others) described in the module. More details can be found in the BL-UP document.

Reference Region for projecting location of deforestation (RRL)

The requirements set in the VMD0007 module, have been taken into account for the delimitation of the RRL. The reference region RRL characteristics are:

- The RRL is a single parcel.
- It is contiguous and includes the PA and LB.
- Consists of 11.09% non-forest land (9.7% of deforested areas and 1.4% of rivers) and 88.9% of forest.
- The area of forest in RRL is 1,604,620.47 hectares which is within the allowed margin in reference to RRD area (+19%).
- The proportions of forests suitable for conversion to the deforestation agents' land-use practices of the RRL and the PA have been calculated, concluding that at the start of the baseline period; both proportions are the same ($\pm 30\%$).
- RRL overlaps a part of RRD area (237,189.8 ha), which is allowed by the methodology.

Project Area (PA)

The Project Area is formed by a set of non-timber concessions, and complies with the requirement (set in section 1.1.2 of the module VMD0007) of being 100% forested at the start of the REDD project activity (in 2009).

No settlements are located within the Project Area. However, the effect of the agrarian frontier expansion caused that some concessions presented deforested areas, thus many concessionaires have had to re-measure their plots to exclude all deforested areas that were originally inside their legal concession area. Therefore we can assure that the Project Area as well as the Leakage Belt has been 100% forested at the beginning of the project activity.

Leakage Belt (LB)

The Leakage Belt complies with the requirements set in the section 1.1.3 of the VMD0007 module, such as:

- Includes forested areas closest to the PA.
- All parts are accessible and reachable by the project baseline deforestation agents.
- The landscape and transportation factors were considered for the determination of the LB.
- Policies, regulations and social factors of the LB are of the same type or have the same effect as in the PA.
- The LB area is more than 90% of the Project Area in 2009.

Validator Response:

The response is sufficient to close this non-conformance report.

NCR Number 2011.37 of 79 Dated 09/08/2011

Finding:

Landsat data listed in Chart 7 does not meet the methodology requirements. The images should be more than 3 years apart, many of the images listed for the 2006 year do not meet this requirement.

Proponent Response:

In order to comply with the requirement of having satellite images with 3 year apart between each point in time:

- 2008 Mosaic was changed for 2009 mosaic.
- Some scenes from 2000 and 2006 mosaics were also changed, to secure the minimum period.
- The sources used to get the Landsat images were National Institute for Space Research from Brazil (INPE) and USGS Global Visualization Viewer. The parameters set out in the BL-UP module for selecting appropriate images were followed, as within the original ones.

Validator Response:

The response provided is sufficient to close this non-conformance report.

NIR Number 2011.38 of 79 Dated 09/09/2011

Finding:

Please provide details of the field assessment work conducted for accuracy referred to in Section 2.1.1.

Proponent Response:

Field assessment work of accuracy for image 2008 was conducted by local NGO AIDER, an independent entity. AIDER's field team visited 55 points (selected with a methodology described in other response and in the BL-UP module) and, if it was not feasible (because it was located in a private property or in an unsafe zone of illegal mining), they moved to the nearest feasible point, according to the grid selection of points. In any case, the point was GPS referenced and a visual recording of the status of the area was established. Forest / Non forest were the main categories established for the classification of field team. It was recorded in a simple handbook.

Validator Response:

The response provided and corrections made to the modules are sufficient to close this new information request.

NIR Number 2011.39 of 79 Dated 09/10/2011

Finding:

Please provide deforestation maps showing areas of deforestation with paired data for the time periods between each historical image as required by the methodology.

Proponent Response:

The deforestation maps with paired data for periods 2000 -2006 and 2006-2009 were already sent.

New Observation: There is a methodology requirement to demonstrate the use of good practice when generating maps. Examples given include the Sourcebook for REDD (GOFC-GOLD, 2009). More specific information is needed to demonstrate how the project will apply good practice to meet this requirement of the methodology.

Response: The deforestation maps with paired data for periods 2000 -2006 and 2006-2009 were generated following the mapping procedure proposed by the Research Institute of the Peruvian Amazon (IIAP) and the Madre de Dios regional government.

This procedure consisted of:

- 1) Selection and acquisition of Satellite images.
 - The sources used to get the Landsat images were National Institute for Space Research from Brazil (INPE) and USGS Global Visualization Viewer.
 - Landsat 5TM and Landsat 7TM satellite images with less than 10% cloud cover and a resolution of 30x30 m were selected (complying all requirements set in BL-UP module).
- 2) The processing of the images met all recommendations given in the Sourcebook on REDD (GOFC-GOLD, 2009) and the Manual for elaboration of mosaics developed by the IIAP. The process is detailed below:
 - Image conditioning

The acquired images were provided in compressed TIFF format. Decompression was done and exported to ERDAS IMAGINE matrix format (*.img) to then proceed to the union of spectral bands.
 - Geo referencing

The geo-referencing locates the image according to a coordinate system. For the Image of the year 2000, the geo referencing was made using the IGN (National Geographic Institute) National Charter vector data (scale 1:100,000) as a reference.

For the other images the type of geo referencing was the Image to Image type and it consisted of using an image that has already a projection system, in this case the Mosaic of 2000 (2006 for the 2009 image). However, the IGN National Charter also served as a reference for validation of this geo referencing. The RMS (Root Mean Square) was minimal in all cases, complying with all the requirements for this step as explained in ERDAS field guide.
 - Detection and removal of clouds and shadows

Satellite images with less than 10% cloud cover were selected; the adequate corrections were made with the construction of the mosaic on the next step. According to the Sourcebook on REDD (GOFC-GOLD, 2009), the preferred method for analysis on images with cloud cover is the visual interpretation, this is considered for step 3.
 - Radiometric enhancement

Performed with the software ERDAS IMAGINE v9.2. The radiometric enhancement was carried out on the digital values of the images to allow you to present a better visual appearance to the images.
 - Mosaic construction

Consisted of the assemblage of all the scenes in order to cover the entire area. The individual images were selected taking into account the visual appearance of these as well as an order for splicing. Consideration was given to the date of the image, to allow the information in the

overlapped area to be the most current.

3) Generation of vector data by visual interpretation of patterns of deforestation

One of the main analysis methods for moderate resolution images is Visual Interpretation (Sourcebook on REDD GOFC-GOLD, 2009). According to this document, it is a simple and robust method but time consuming, and also requires that the image analysis be performed by an experienced interpreter. In our case, the work was done for all the years by IIAP, the national institution in charge of preparing the maps for ZEE and with a large experience with this kind of process in other Amazon Regions. This step consisted of interpretation, digitizing, editing and encoding of deforestation.

4) Map accuracy assessment

An accuracy assessment of maps was carried in order to produce credible results of historical deforestation rate. For both classes: forest and non-forest, the minimum accuracy was 90%.

Validator Response:

The response provided and corrections made to the modules are sufficient to close this new information request.

NIR Number 2011.40 of 79 Dated 09/11/2011

Finding:

Please provide more information as to how planned areas of deforestation were identified and excluded from both the Forest Cover Maps and the Deforestation Maps.

Proponent Response:

There are no planned areas of deforestation since there aren't areas of industrial agriculture and the only large scale public project consisted in the paving of the IOH which is already finished and didn't involve new areas of deforestation.

In the other hand, mining is an informal activity and even though some miners already have concessions, they do not comply with regulations making once again their activity illegal. As we mentioned in NIR 23, is very unlikely that mining petitions that overlap with forest concessions could get the permission for their activities. For this reasons mining is considered as an unplanned deforestation activity.

New Observation: Have regional zoning/planning considerations been included in the analysis to cover potential deforestation from town expansion (i.e. consideration of planned town boundaries) to rule out this type of land use change in the project area?

Response: ZEE documents related to the expansion of urban and industrial areas were reviewed to analyze the presence of areas with planned deforestation. Map 20 of the EEZ defines areas with urban industrial vocation. We have compared these areas with the proposed project area, and has been obtained that the major proportion of the PA is located in areas of low vocation (map 1 attached)

Moreover, among the 35 areas defined in the final map of the EEZ is included the Industrial Urban Expansion Area, which accounts for 0.07% (5540 ha) of the entire region. These are the areas where growth of infrastructure should occur according to the zoning. We have also compared this against our PA and it was found that 27 hectares overlap the urban expansion areas (map 2 attached).

Like ZEE mentions, there is not an Urban Development Plan to guide the growth of cities, especially of Puerto Maldonado. Actually, the high pressure over the cities because of migration is making them expand without any control or planning. The only city that has a plan is Iñapari, but it is not part of our area.

Finally, we have concluded that urban expansion area proposed by ZEE cannot be considered as

planned deforestation, because there is no official document stating future urban use of these areas.

Validator Response:

The response provided and corrections made to the modules are sufficient to close this new information request.

NIR Number 2011.41 of 79 Dated 09/12/2011

Finding:

Please confirm that the cloud cover was no more than 10% on each image.

Proponent Response:

The answer of this observation is being attached to this NIR.

New Observation: Using Quadrant b of image 4-69 will not meet the requirements of BL-UP which requires no more than 10% cloud cover. How do you propose to meet the requirements of section 2 1.3 of the BL-UP module for image 4- 69?

Response: We have made a rapid assessment of satellite images displayed in the National Institute for Space Research from Brazil (INPE) and USGS Global visualization Viewer, in order to find more suitable images for scene 4-69. Nevertheless, the available ones have even more cloud coverage (in the quadrant of interest) than the ones selected, making it not possible to construct a mosaic or to replace the entire image.

The main reason of the low quality of the images from this scene is its geographic location, as explained before. The corrective action we have decided to employ is to remove the scene 4-69 from the RRD and the excluded area will not be analysed, as we expect that the same difficulty will be present in future images. Therefore, we are attaching the new shape of the RRD. This decision does not affect the size requirements of RRD as can be seen in respective modules'

Validator Response:

The response provided and corrections made to the modules are sufficient to close this new information request.

NIR Number 2011.42 of 79 Dated 09/13/2011

Finding:

Please provide the details of the accuracy ($p < 0.05$) and $r^2 = > 0.75$ as required by the methodology. Please also confirm and explain how this regression is free from bias. Please explain how the methodology requirement for non-linear regression, that 5 points in time are used when only 3 historical periods are covered in the Landsat data set.

Proponent Response:

There are 3 activities responsible for deforestation in Madre de Dios: agriculture, livestock and mining. Illegal gold mining is highly profitable, far greater than any other economic activity and has been accelerated in recent years due to the rising price of gold. Its expansion does not depend on transportation costs but on an exogenous factor (price of gold) and on the geological stocks of gold, which have been determined to have statistically significant association with the geological layer called Quaternary Holocene. For this reason, as it is not possible to predict the future price of gold, we applied the historical rate of deforestation of the mining areas in mining petitions and in Quaternary Holocene layer (mining stratum).

Agriculture and cattle ranching have increased as a result of the paving of the Interoceanic Highway (IOH) that has reduced transportation costs, has accelerated the construction of secondary roads of

penetration and, as a consequence, has improved the profitability of these activities that were traditionally of subsistence. An independent study has determined the profitability of maize and beef as a proxy for agricultural and livestock activities respectively, and based on this study we found that agricultural activities were not profitable across the whole Madre de Dios region, as its performance is directly dependent on (among other variables) the cost of transport to markets, which in turn depends on the amount and quality of existing road infrastructure. From historic data we know that this infrastructure expands in an average of 142 km / year.

By comparing the profitability data of the two products and by choosing the highest value, an Opportunity Cost map was created. Then, the Madre de Dios region (excluding mining areas) was divided in two strata: the area with positive agricultural opportunity cost (Positive OC) and the area with negative agricultural opportunity cost (Negative OC). In the Negative OC we have used a historical rate of deforestation which was determined from these particular areas.

Only for the Positive OC stratum we have constructed an equation which, based on historical analysis of deforestation in the reference period 2000-2009, correlates the deforestation rate with the opportunity cost (OC). The main hypothesis of our regression is that future deforestation depends on the increasing profitability of alternative activities as a result of improvements in road infrastructure (construction of new roads or improvement of existing ones). This statement is very appropriate for the Region of Madre de Dios because of the presence of the Inter Oceanic Highway (IOH) and as the works over it have just finished, their real effect is yet to be seen.

The regression obtained is statistically significant ($r^2 = 0.85$ and $p = 0.000$) and is a "power" equation, built from the sub-stratification of positive CO stratum in 10 sub-strata.

The images used for the development of this model were 2000, 2006 and 2009 as main years and 2005 and 2008 as complementary images. In all cases, the images meet the requirements of the methodology: % cloud cover <10% and Landsat images with resolution <1 hectare.

The construction of the equation consists of three steps: preparation of data to be used in the equation, creation of different types of regressions and selection of the most appropriate one. The independent variable is the Opportunity Cost (OC), and the dependent variable is Deforestation Rate (DR).

- 1) Preparation of data: Each sub-stratum has its own average values of OC and DR variables. The software DINAMICA-EGO (where the whole model runs) converted the data of Opportunity Cost and Deforestation Rate from maps to ASCII files. These matrices must be organized in the same number of columns and rows, so the spatial position is maintained.
- 2) Creation of different types of regressions: the ASCII files were uploaded to the R program (which is statistical software). Then, samples were systematically taken (every 100 pixels) and the value for the x/y coordinates, the average OC and average DR were used to elaborate the different equations: lineal, logarithmic, power and exponential. It is worth noting that all of them (except the lineal regression) had to be linearized so they could be analyzed with the Least Squares Method. As these are spatialized data the auto-correlation effect must be analyzed and incorporated if significant. In our case, the auto-correlation was not significant; nevertheless the equations were adjusted to include it (these types of equations are called autoregressive models).
- 3) Selection of the fittest equation: based on the results showed in the above table, we conclude that the best equation for predicting the deforestation rate is the power auto-correlation equation. It has the lowest residuals (Residual standard error), which show us that the equation is free from bias, and the maximum R^2 and F-statistic and also the lowest AIC and BIC.

New observation: The equation needs to be set out in the form of the power function (at the bottom of p14 of BL-UP). Please use the symbols for the equation parameters from BL-UP for consistency, in the table and text.

What are the 244 samples referred to in the table, please explain these further.

Response:

The parameters obtained must be reconverted so the equation is presented in potential form:

$$\text{Deforestation Rate (\%)} = 0.00100578 * \text{Opportunity Cost}^{0.695547}$$

Where: $c = 0.00100578 = \text{antilogarithm}(\beta_0)$ $\beta_0 = -6.901992$

$b = 0.695547 = \beta_1$

The Deforestation Rate obtained is multiplied by the area of remaining forest to give the projected area of unplanned baseline deforestation.

The 244 samples mentioned in the table are the ones described in step 2 of the construction of the regression equation. They were gotten by running the systematic sampling (every 100 pixels) in R program, explained before. This sampling is conducted as the data to be used is spatialized (in order to maintain their geographic location).

Validator Response:

Clarifications made are sufficient to close the new information request.

NIR Number 2011.43 of 79 Dated 09/14/2011

Finding:

Please clarify in the table 8 and text why Year 0 is excluded.

Proponent Response:

Project started in September 2009 but in order to be more conservative (because there is no way to measure deforestation from that specific month onward) we chose to begin the crediting period on 01/01/2010. However, we included the projections for 2009, called "year zero", to be able to have the net amount of deforested areas (and stocks derived from them) pertaining to the crediting period: 2040 Deforested Area – 2009 Deforested Area = Total Deforested Area 2010 to 2040 (in table 8).

It is used also to obtain the annual deforested area (and stocks derived from them) of year 2010, because the model shows cumulative areas.

Validator Response:

Clarifications made are sufficient to close the new information request.

NIR Number 2011.44 of 79 Dated 09/15/2011

Finding:

Please clarify the workings specified in the methodology Section 2.3 of the BL-UP module to transparently demonstrate how the figures in Chart 9 were calculated.

Proponent Response:

2.3 Annual unplanned deforested area estimated for the Project Area.

Using the data of the projected area of unplanned baseline deforestation in RRD (ABSL,RRD,unplanned,t) obtained with a regression equation for the Positive Opportunity Cost Stratum, and the historical rates for the Negative Opportunity Cost and Mining Strata (explained in detail in the previous step 2.2), we estimated the area projected to be deforested in RRL.

This area was calculated per stratum, and the formula (eq.4, step 2.3, BL-UP) presented next was applied:

$$\text{ABSL,RRL,unplanned,t} = \text{ABSL,RRD,unplanned,t} * \text{PRRL}$$

Where PRRL is the ratio of forest area in each stratum of the RRL at the beginning of the historical period to the total area of each stratum of RRD.

In our case, these two areas (forest area in RRL and total area of RRD) per stratum were the same at the beginning of the historical period, since the area of RRD was defined as the forested area of the RRL in the year 2000. The proportion (PRRL) is then estimated to 1.

Therefore we have:

$ABSL_{RRL,unplanned,t} = ABSL_{RRD,unplanned,t}$

Validator Response:

Clarifications made are sufficient to close the new information request.

NCR Number 2011.45 of 79 Dated 09/16/2011

Finding:

Please correct the equation so as per VMD0013 (i.e. add 2 more open brackets before Aburning, i,t). Please also ensure that equations are labeled 'Equation One', 'Equation Two' etc and referred to in the text.

Proponent Response:

The equations have been written so as per VMD0013 (the corresponding brackets were added) and labelled as "Equation 1" and "Equation 2".

Validator Response:

Changes are sufficient to close this non-conformance report.

NCR Number 2011.46 of 79 Dated 09/16/2011

Finding:

Please remove "over the land" from the explanation of the parameters inclusion in the equation so that it is the same as VMD0013

Proponent Response:

"Over the land" has been replaced by "aboveground", as shown in the methodology.

Validator Response:

Changes are sufficient to close this non-conformance report.

NIR Number 2011.47 of 79 Dated 09/16/2011

Finding:

(Describe and provide objective evidence)

Please state that the forest is categorized as 'Primary Tropical Moist Forest' as per Table 2.6 of VMD0013, what is the justification behind this categorization?

Proponent Response:

The tropics, also named tropical zone, is a region surrounding the Equator, limited in latitude by the Tropic of Cancer in the northern hemisphere at approximately 23° 26' 16" N and the Tropic of Capricorn in the southern hemisphere at 23° 26' 16" S.

Tropical moist forests are distributed mainly near the equator, between 10° North latitude and 10° South latitude, although can be found beyond these latitudes depending on the climatic characteristics such as high temperatures and rainfall.

The extension of the Peruvian Amazon according to ecological criteria, is of about 61% of the national territory or 739, 399 km² (IIAP-BIODAMAZ, 2001). According to Tosi (1960), the Peruvian tropical rain forest has an average annual temperature that exceeds about 24 °C, with an average annual rainfall over 1800 or 2000 mm. It is characterized by abundant rainfall in most months of the year.

Based on the most recent forest survey, developed by the National Institute of Natural Resources (INRENA, 2009), aimed to create the map of deforestation in the Peruvian Amazon 2000 with the use of

satellite images Landsat 5 and 7, the forests in our area were classified as tropical moist forests. Moreover, according to the Holdridge life zones classification, based on parameters such as temperature, precipitation, evapotranspiration, altitude, latitude and the influence of these on vegetation, the project area consists mainly of moist and wet forests (see Map 1), therefore belongs to the tropical moist forest type.

This forest is considered Primary since the area contains a set of concessions for extraction of Brazil nuts, a low-impact activity consisting merely of the collection of fruits and since year 2004 involving regulated small-scale logging (practiced only by the 23% of concessionaires last year¹); thereby the ecological processes are not significantly disturbed.

The extraction of Brazil nuts inside the Forest Concessions for other products of the forest is regulated by several laws (Forest and wild fauna Law, Environmental Law, among others) and regulations that protect the limits of the concessions and supervise the correct implementation of the activity within.

The Ministerial Resolution No. 729-1981-AG-DGFF in 1981, established the ban on logging and burning of the chestnut trees. In 1997, by the Subregional Agricultural Directorate of Madre de Dios Directorial Resolution No. 030-1997, MA-DsrA-MD-RI, was established a fine penalty for possession, transportation and marketing of chestnut trees as well as the granting of land titles in forest areas where the Brazil nuts were found. Finally, there is a rule still in effect in 2002, which prescribed that the logging and burning of chestnut trees is prohibited. All these measures ensure that the natural forest coverage of the project area has remained intact.

The logging inside the Brazil Nuts concessions is also regulated, and the permission is granted only if a Complementary Annual Management Plan (PMCA) is made, being the limit of extraction established by the forestry inspector.

Validator Response:

Response is sufficient to close this new information request.

NCR Number 2011.48 of 79 Dated 09/16/2011

Finding:

Please change to CAB_TREE, i, t as per VMD0013, also please provide an explanation of this variable.

Proponent Response:

The correction of the misspelled word has been done. The estimation of the emissions of GHG due to use of fire to clear land has followed the indications set forward in the E-BB module. The two defined sources of emissions were: CH₄ N₂O by burning of forest biomass and burning of agricultural residues (stubble).

For burning of forest biomass, we considered that the 55% of aboveground biomass was burnt, according to literature. CO₂ emissions were not considered because they are already accounted in carbon stock change.

For burning of stubble, we considered that only the residues of annual crops were burnt after the agricultural campaign. In this case, CO₂ emissions were not accounted as it is assumed that carbon stock is in balance (due to removals by growth and emissions by fire or decay).

As seen in field, these assumptions are conservative and will be kept for the entire baseline.

We considered ex-ante emissions in the with-project scenario to be zero.

Validator Response:

Response was sufficient to close this non-conformance report.

NIR Number 2011.49 of 79 Dated 09/16/2011

Finding:

Please justify the exclusion of dead wood biomass and dead leaves from Equation Two.

Proponent Response:

Biomass from dead wood and litter were not included in equation 2 because both pools were not accounted in any of the workings as they were proved to be not significant (as explained in NIR 33). Moreover by excluding those pools from the equation mentioned we obtain more conservative emission reductions.

Validator Response:

Response provided is sufficient to close this new information request.

NIR Number 2011.50 of 79 Dated 09/16/2011

Finding:

Please provide a copy of the excel spreadsheet translated into English.

Proponent Response:

The E-BB calculations can be found in the *Castañeros REDD Project Calculations.xlsx* (spreadsheets 5.1 and 5.2).

Validator Response:

Provision of the translated spreadsheet were sufficient to close this new information request.

NCR Number 2011.51 of 79 Dated 09/16/2011

Finding:

Please provide a clear document structure with headings as per VT0001 (i.e. Step 1, Sub-Step 1a etc.), please also explicitly state whether Option I, II, or III was used in Step 2. Investment Analysis. The 'Pre-Project Scenario' has been incorrectly labeled as the "Baseline Scenario", please correct in Sections 1.1 and 2. Please clarify use of the word 'pretends' and reconsider the intention of this sentences that include it. Would 'attempts' or 'intends' be more appropriate? Please explicitly state at the end of sub-step 1c which scenario is the most plausible and has been selected as the baseline scenario.

Proponent Response:

The whole T-ADD document was remade, and all the observations were solved:

- The structure now follows the one indicated in the tool.
- Option II was used, and is clearly stated in the respective section of the new document.
- The scenarios were named: Scenario 1 and Scenario 2.
- The most plausible scenario is Scenario 2, which is also clearly stated in the document.

The incorrect words and phrases were changed.

Validator Response:

Corrections made to the module were sufficient to close this non-conformance report.

NIR Number 2011.52 of 79 Dated 09/16/2011

Finding:

No mention of mining (legal or illegal) has been made as a possible alternative land use even though from statements in the PD it is a very real threat to the forest and alternative land use. Illegal land uses can be included as possible land use scenarios if it can be shown that these land use scenarios result from systematic lack of enforcement of applicable laws and regulations (see section 2.2.2, a iii of VT0001). Please explain exclusion of mining as an alternative scenario

Proponent Response:

Although mining is a real threat to forests it has not been considered as an alternative scenario because in this part of the Madre de Dios region it is naturally limited by existences of gold. According to the estimations of the Geological Mining and Metallurgical Institute (INGEMMET), the economical existences

of gold can be found only in areas formed in the Holocene¹ by recent alluvial and fluvial deposits. This information has been shared among the artisanal miners and therefore they are expected to keep their activities to these areas.

IIAP states in the technical document of geology elaborated for the Economic-Ecological Zoning of Madre de Dios that this areas have an ore grade (*ley de oro* in Spanish) between 0.28 - 0.7² g/m³.

These potential mining areas are presented in the map attached to this document, and as can be seen there are few Holocene areas that overlap the Project Area.

We do not attempt to overlook the possibility of deforestation by mining as it is real and very tangible, but basing our projections in reliable information we expect that this illegal activity represents a small proportion of threat (5.85 %) compared to other alternative activities.

¹Estimación regional del potencial aurífero del Departamento de Madre de Dios y Diagnóstico Ambiental de la minería aluvial y recomendaciones para mitigar sus efectos ecológicos. INGEMMET. 1995.

²Zonificación Ecológica Económica de Madre de Dios. Geología. IIAP. 2009.

Validator Response:

Corrections made and information provided are sufficient to close this new information request.

NIR Number 2011.53 of 79 Dated 09/16/2011

Finding:

Please provide detailed information on how the IRR values for each scenario have been calculated including assumptions, parameters, etc.

Proponent Response:

The T-ADD document was remade. The assumptions, parameters and relevant data are clearly stated now. Please check the new T-ADD document that was attached with NCR 51.

New Observation: Please demonstrate the workings to determine the IRR. We suggest inserting a table with 1) projected gross revenue, 2) costs, 3) net revenue, 4) IRR for the 10 year period for each land use scenario. Also why hasn't a scenario with timber harvesting been included given that agriculture was considered? Harvesting in the area of the Castaña concessions was witnessed during the validation visit and it was understood that some Castaña concessions can harvest as well.

Response: Wood harvest was included in the two alternative scenarios as it occurs like a complementary activity. All data for calculations can be seen in the excel document *Scenarios Calculations*.

Validator Response:

Corrections made and information provided are sufficient to close this new information request.

OFI Number 2011.54 of 79 Dated 09/16/2011

Finding:

Please replace the word 'sensibility' with 'sensitivity'

Proponent Response:

The correction has been made.

Validator Response:

The correction has been made and this opportunity information request has been closed.

NIR Number 2011.55 of 79 Dated 09/16/2011

Finding:

Please amend Table 2 to include the following: a label for the second column. What is it trying to demonstrate, and please elaborate on the 'changes in the cost of each activity' stated in the accompanying text.

Proponent Response:

The word "sensibility" was changed for "sensitivity" in all parts of the document, including the Table of Contents, which was updated. The new T-ADD document that was attached to NCR 51, as it is a reformulated one. All observations from above were solved in said document.

Validator Response:

The responses and additions made to the documentation were sufficient to close this new information request.

NCR Number 2011.56 of 79 Dated 09/16/2011

Finding:

Following on from Sub-step 2d (Sensitivity Analysis), the Common Practice Analysis (step 4) should be employed in the event that the proposed project without financial benefits from the VCS is unlikely to be the financially most attractive (option II and Option III), or the Barrier Analysis (Step 3) if the project is likely to be the most financially attractive option (Option II or Option III) then the project cannot be considered additional by means of financial analysis and step 3 must be used to demonstrate that the project activity faces other barriers that prevents the baseline scenario of occurring. Please complete the VT0001 tool as required by the VCS Standard.

Proponent Response:

The T-ADD document was reformulated and completed according to the steps proposed in the tool. As the Castañeros REDD Project resulted less financially-attractive that the alternative scenarios, we undertook step 4. Please check the new document for further details.

Validator Response:

The changes provided have closed this non-conformance report.

NIR Number 2011.57 of 79 Dated 09/16/2011

Finding:

Please comment on where the Average Investment of <US\$0.01 million for 'Artisanal gathering of brazil nuts' and US\$0.40 million of 'Agricultural activity' figures came from. If from a reference please provide the source, and if from in-house calculations, please provide the working.

Proponent Response:

A new T-ADD document was attached to NCR 51. The explanation of each calculation can be found there. However a specific change has been made to the analysis of the Agriculture-Livestock scenario so that it is more conservative:

Before, the scenario assumed that half of the area of the Brazil nut concessions (54%) were to be converted to alternative land uses (agriculture and livestock) by a mistake. The remaining Brazil nut activity in non-deforested areas was not accounted in the analysis. The result was an Average Investment of 0.4 million USD\$. Now, we are using an average deforestation rate of 1.04% per year, much more accurate for this analysis as it comes from the deforestation model developed. It also includes Brazil nut harvest in remaining areas (employing its due financial indicators). The result of this reformulated analysis shows that the Average Investment is 0.03 million USD\$.

It is worth noting that despite the change, the Castañeros REDD Project remains additional.

Validator Response:

The changes provided have closed this new information request.

NIR Number 2011.58 of 79 Dated 09/16/2011

Finding:

Where does this 0.88 come from (for r2)? If it is determined in another module then it should be referenced here.

Proponent Response:

The new R^2 is 0.8587 and where it comes from is explained in the BL-UP document (in the updated one which will be sent when all the observations are solved). It is already presented as well in NCR 42.

The past value (0.88) has changed because we had to use another set of satellite images (for year 2009) in order to comply with the restriction of the methodology that the images must be from 3 years apart between them.

Validator Response:

The changes provided have closed this new information request.

NIR Number 2011.59 of 79 Dated 09/16/2011

Finding:

More detail is required on the Carbon Decisions International Tool. The headings in the table need to be translated into English. Are all the required parameters listed in Step 2 of X-UNC covered?

Carbon Decisions International has many tools, which one has been used in this instance? Please demonstrate that it is compatible with the methodology. The question of whether or not all of the relevant parameters identified on p4 of the X-UNC module has not been answered.

Proponent Response:

Please find attached the detailed description and the calculations requested by X-UNC module. CDI tool has been minimally used now, and all the steps of the module were strictly followed.

The parameters excluded are mentioned in the module, and the reason can be found in NIR 33 and will be also stated in REDD – MF module.

Validator Response:

The changes provided have closed this new information request.

NIR Number 2011.60 of 79 Dated 09/19/2011

Finding:

Please correct "shadows and shades" to "shadows and clouds" as per VMD0015. Also will areas covered by clouds and shadows detected on the images be removed from the analysis?

Proponent Response:

The selection of Landsat satellite images take into account the low cloud cover in the images as one of its main requirements. Moreover the pre-processing method of the satellite images includes shadows and clouds detection and removal. If it is not possible to obtain images with low cloud cover will then be used multiple images of the same 12 month period to significantly reduce cloud cover up to a level under 10%. In case the images available for the area do not overlap exactly, the indications set forth in the modules will be considered to determine the maps (BL-UP 2.1.3, M-MON 1.2.c)

Validator Response:

The changes provided have closed this new information request.

NCR Number 2011.61 of 79 Dated 09/19/2011

Finding:

Please state whether the method selected for monitoring and mapping deforestation is based on common good practice in the remote sensing field, and if the same method will be used for the entire period for which the baseline is fixed.

Proponent Response:

The method selected for monitoring and mapping of deforestation is the same implemented by the Research Institute of the Peruvian Amazon (IIAP) and the Madre de Dios Regional Government during the years 2000 and 2006, using Landsat 5 and 7 satellite images, for the determination of the deforestation in Madre de Dios during those years.

The method is based on common good practice in the remote sensing field, and consists of two modules as technological applications:

- Digital processing of satellite images (geometric correction, geo-referencing, shadows and clouds detection and removal, radiometric enhancement and construction of the mosaic).
- Generation of vector data by visual interpretation of patterns of deforestation.

This method will be used for the entire period for which the baseline is fixed.

It is worth noting that every image used in the project until this date were analyzed by IIAP's GIS department and as possible, future images would be analyzed by them as well. Also, it is important to say that this institution made the Ecologic-Economic Zoning of Madre de Dios in 2001 (which is considered official information at a regional level) and its update in 2009, and used the same methodology for mapping deforestation.

Validator Response:

The changes provided have closed this non-conformance report.

NIR Number 2011.62 of 79 Dated 09/19/2011

Finding:

Please elaborate on the bullet points provided in Step 2.1 of the M-MON document provided and ensure that the requirements of VMD0015 are met and clearly documented in the text.

Proponent Response:

Initial response was not adequate. New observation: Please tell us what steps will be taken to achieve the necessary information and provide references for the approach taken to demonstrate the approach taken.

Response: According with the guidelines and requirements of module M-MON, the detection and mapping of the deforestation by stratum in the entire Reference Region, Project area and Leakage belt will be calculated using medium resolution remotely sensed spatial data (Landsat 5TM and 7TM satellite images), and following the same method selected for monitoring and mapping of the historical deforestation in Madre de Dios, explained in detail in the NCR-61 and NIR-39 documents presented before.

2.1 Deforestation monitoring

The detection and mapping of the deforestation by stratum in the entire Reference Region, Project area and Leakage belt will be calculated using medium resolution remotely sensed spatial data and following a standard of common good practice in the remote sensing field.

This analysis will result in estimates of any deforestation occurring in the Project and Leakage areas, and the Region of Reference (a, b and c). The deforested area multiplied by emission per unit area (d) equals the Net carbon stock change (at time t).

- a) Deforested area in the Project Area (PA) by stratum.
- b) Deforested area in the Leakage Belt (LB) by stratum.

For both estimations (a, b) should be indicated the type of Land Use "LU" transformed in the deforested areas. To recalculate the baseline it should be established or indicated if the percentages of change in LU of the initial baseline are still the same (54% Agricultural, 40% Pastures, 4% Farmland and 2% Infrastructure).

- c) Deforested area in the Region of Reference (to evaluate the baseline).

- d) Emission per unit area

- The difference among stocks before and after deforestation results on the emission per unit area ($\Delta C_{pools, Def, i, t}$). The formula (5) from module VMD0015 is used to estimate this emission.
- The strata remain the same in the entire baseline period.
- The selected pools are maintained in the baseline. The carbon stocks in pools are estimated using the methods given in module CP-AB. All carbon pools excluded are counted as zero.
- The carbon stocks per stratum and in each post-deforestation land use are maintained across a baseline.
- The baseline is evaluated every 10 years.

Validator Response:

The changes provided have closed this new information request.

NIR Number 2011.63 of 79 Dated 09/19/2011

Finding:

"The location will be monitored". Please state which location is being referred to (i.e. RRD, project area, leakage belt)

Proponent Response:

The referenced location is the Project Area. This has been written in the document.

Validator Response:

The changes provided have closed this new information request.

NIR Number 2011.64 of 79 Dated 09/19/2011

Finding:

M-Mon Section 2.2.1 requires all access points to be considered, not just those 'nearer', 'vulnerable' or 'most important'. The area subject to degradation is equal to the distance of degradation penetration from all access points (access buffer). Please amend to comply with Section 2.2.1 of M-MON.

Proponent Response:

The correction was made. If the PRA shows that degradation potential exists for the Project Area, **all Access Points** will be taken into account when generating the access buffers.

In addition, it should be mentioned that this Access Points consists of 7 points located among the Interoceanic Highway. According to the results of the *Socioeconomic Diagnosis of the Brazil nut Sector*¹ and the preliminary results of the first PRA² developed for monitoring degradation inside our areas, these points were identified by the Brazil nut concessionaires and local experts (Brazil nut leaders) to be the access points for illegal logging inside the Brazil nut region, and were generally created for wood extraction by timber concessionaires³ located beyond the Brazil nut concessions (especially in the north-west). The degradation analysis was done according to M-Mon Module Requirements as can be seen in the monitoring report.

A map showing the concessions that suffered illegal logging until 2010 and the Access Points is being attached, and a small description of each point is presented below:

¹ Diagnóstico Socioeconómico del Sector Castaño. Bosques Amazónicos - 2010.

² The document will be included in the verification report.

³ Refers to Forest Timber Concessions whose first activity is the extraction of timber in accordance with a Forest Management Plan.

- Road 01: Locally called Schipper road, named after one of the best known wood extractors of the zone who has sawmill on the access point to the highway. Today, this road is included in the project folder by the Ministry of Transport and Commerce to be enlarged and improved.
- Road 02: Locally called Mono Mejia, named after another well-known wood extractor in the area. This road articulates the production of the La Novia sector to the Brazil nut concessions, the wood products and other agriculture products.
- Road 03: Locally called Mavila-Aposento road, it branches and runs parallel to the road Mavila-Shiringayoc, this network of roads is being articulated by the growth of rural properties and its business connection with the border of Bolivia. Place from where smuggled goods enter such as Brazil nuts and timber.
- Road 04: Locally known as Nueva Vista Road it connects to the Miraflores road. Is projected to be articulated (already articulated with the road Alto Malecon - San Carlos) to the system of roads Varsovia-Lucerna-Loreto.
- Road 05: Locally known as San Juan-Piñal road, is one of the roads that is recently articulating to the border zone with Bolivia. The town of Alegria is projecting a rapid growth to different fronts; one of those fronts is driving this road.
- Road 06 and 07: Locally called Alto Malecon - San Carlos road and Varsovia-Lucerna-Loreto

road. These two roads are managed to penetrate to the northwest of the Brazil nut industry, the first road, has an efficient system maintenance and the second was driven by the Municipality of Las Piedras. Both are projected as main roads of trade of agricultural and forest products.

Validator Response:

The changes provided have closed this new information request.

NCR Number 2011.65 of 79 Dated 09/19/2011

Finding:

Is DAP supposed to be DBH? Is so please correct, if not please explain what DAP is.

Proponent Response:

DAP stands for: Diámetro a la Altura del Pecho, which in English would be DBH: Diameter Breast Height. The proper correction has been made.

Validator Response:

Clarifications provided are sufficient to close this non-conformance report.

NIR Number 2011.66 of 79 Dated 09/19/2011

Finding:

Please complete data/parameter tables so each contains: the data unit (i.e. as shown in the equation), the unit of measurement, the equation the parameter was used in, the value applied (if applicable), and any quality control/assurance steps taken. Ensure all cells have detail or are marked not applicable (n/a).

Proponent Response:

A Word document, containing the Tables of the M-MON module in accordance with Version 2.0, is being attached to this document.

Validator Response:

The changes provided have closed this new information request.

OFI Number 2011.67 of 79 Dated 02/02/2012

Finding:

Please change Picture 2 on page 37 so all text is in English. Please also replace the word 'vegetable' in the first paragraph on p42 to 'vegetation'

Proponent Response:

The observations have been corrected. An attached sheet shows the modified figure.

Validator Response:

The changes provided have closed this opportunity for improvement.

NCR Number 2011.68 of 79 Dated 02/02/2012

Finding:

Please provide further explanation regarding the calculation of the map accuracy assessment. 1) on p43 the text states that the minimum size required is 49 assessment points. Then discusses the need for 9 sampling points in each of the 6 areas. $6 \times 9 = 54$. However in the confusion matrix there seem to be only 35 data points. Please explain the difference. Also Section 2.1.4 of VMD0007 states "The minimum map accuracy shall be 90% for both the 'forest' class and the 'non-forest' class". Numbers given the confusion matrix show that the accuracy for field class 1 and map class 2 are 89.5% and 88.2% respectively, and therefore do not comply with the methodology. The methodology states that if the 90% accuracy is not met then more sampling needs to be done.

Proponent Response:

As the accuracy assessment was developed by a local NGO, who has done a similar work for their own

projects, a confusion occurred during the preparation of the report. A new report has been prepared and is attached to this response. In general terms, the steps followed for this accuracy assessment are:

- Based on a statistical formula (that can be found in the report) recommended by specialized literature, it was established the minimum number of points that need to be assessed in the field. As it is explained in the report, 49 points were required. For safety reasons, 55 points were visited.
- 6 large plots were established along the RRD, randomly distributed over transition zones (areas where deforestation was observed). These areas were selected in order to be an acid test for the work done. Areas clearly deforested and areas without any threat of deforestation do not represent any difficulty for the work of image processing.
- These 6 plots are rectangles with, as recommended by Sourcebook, a size of 5000 hectares. GOFC-GOLD Sourcebook defines this method to join plots is a common practice known as cluster sampling, with the difference that the location of these rectangles have not been defined statistically but prioritizing transition areas (close the IOH).
- Each plot is divided in 200 sub-rectangles following a grid method from where 9 points for each plot were selected.
- This points were located based on a systematically non-aligned method developed by AIDER with the support of Excel function RANDOM.
- Based on that selection, AIDER's field team went to the field to compare the type of cover of the land with what was reported in the map.
- A confusion matrix was developed with that information, which is showed below:

Predicted Class	Actual Class		Σ	Commission Errors
	1	2		
1	25	2	27	7.41
2	1	27	28	3.70
Σ	26	29	55	
Omission Errors	3.85	6.90		

Forest Accuracy **96.43%**

Deforestation Accuracy **92.59%**

Global Accuracy **94.55%**

- As recommended by GOFC-GOLD Sourcebook, User's accuracy formulae was used to determine the level of confidence for the map for both classes: forest and non-forest. In both cases, the percentage obtained was over the minimum requested by the methodology (90%).

The confusion with the number of plots and the percentage of error was generated because this report and results were applied to a map for other year and produced by other source. Detailed description of the procedure followed, the map of points selected and the results of the accuracy assesment are attached to current response.

Validator Response:

The clarification provided is sufficient to close this non-conformance report.

NIR Number 2011.69 of 79 Dated 02/02/2012
Finding:

Has a comparative analysis of soil types, slope classes and elevation of the land in the leakage belt and project area? These landscape factors need to be $\pm 20\%$ when comparing the leakage area and the project area. This is also the case for transportation factors, policy and regulations and social factors.

Proponent Response:

Peru is in a decentralization process and Regional Governments have increased their competences to develop specific regulatory frameworks, implement measures according to their prioritized activities in accordance to their view of the path for their development, etc. Regarding forest resources, Regional Governments have the rights to approve annual operational plans, to fight against illegal activities and to establish the yearly tax for harvesting right among others. In addition, until the paving of IOH, Madre de Dios was an isolated region, more integrated with Brazil than with the rest of the country. Before the construction of this highway, it could take 2-3 days to go to Cusco, while now it takes around 14 hours. For these reasons, the whole boundaries of Madre de Dios (with the exception of the north-west part of the department, which is farther than 50 km from any road and the area covered by the path-row 4-69) was selected as RRD. As RRD and PA are under the same political jurisdiction, social and regulatory factors can be considered similar.

In the case of leakage belt, their similarity with project area is even more as leakage belt has been defined as the other Brazil nut concessions who have not joined the project yet. So, the only difference with PA is their subscription within the project agreement. There are no differences in location (as can be seen in the map), type of landholder (typical rural families), size of the concessions, among other relevant factors.

This is similar for slope and elevation as can be seen in following chart:

Elevation	PA	LB	RRD	Slope (%)	PA	LB	RRD
0 a 500	100%	100%	97%	<15%	99%	98%	95%
500 + m	0%	0%	3%	>15%	1%	2%	5%

In the case of transportation factors, navigable rivers and roads are not part of forest concessions and, as they have not been classified as forest, they cannot be part of PA and LB. For this reason, density cannot be calculated as it would be zero in both cases, even though some of these rivers and roads cross within concessions that are part of project area and, in other cases, rivers and roads are natural boundaries of project area and leakage belt, as can be seen in attached map, that also shows that there are no significant differences in density of rivers and roads throughout the relevant area classes (PA, LB, RRD).

Validator Response:

The clarification was sufficient to close this new information request.

NCR Number 2011.70 of 79 Dated 02/02/2012
Finding:

Please explicitly state the date on which the REDD project crediting period will finish, even though you have provided good information, the methodology requires the end date to be stated. Please state the date, month and year.

Proponent Response:

The format of the dates were changed to comply with the requirements:

Starting Crediting Period: 01/01/2010

End date of Crediting Period: 31/12/2040

Validator Response:

Response was adequate to close this non-conformance report.

NCR Number 2011.71 of 79 Dated 02/02/2012

Finding:

Please ensure that the equation in this section is in English; please also provide the document referred to in the text (Puyravaud, 2003). Please also define the term 'opportunity cost' as it is used in this section.

Proponent Response:

Opportunity Cost (OC) definition

The Opportunity Cost is the estimated cost based on the value of not carrying out the best alternative unrealized, from a set of mutually exclusive activities.

In our case the OC is defined among the two most common alternatives undertaken in the region: the agricultural production (represented by Corn) and the Livestock. The profit of both activities, which depends on their proximity to roads and main markets, is calculated and compared; being the highest of both considered as the OC for one specific area (pixel). This OC represents the economic benefit that a person shall renounce for keeping the forest.

The areas with an OC higher than zero define the Positive Opportunity Cost Stratum. The deforestation occurring inside this stratum is mostly caused by the planting of corn or production of meat. On the other hand areas with negative OC, where producing meat or corn is not profitable, deforestation is explained by other factors (e.g. cleared areas in forest concessions, mining concessions).

FORMULA PUYRAVAUD

The formula of annual rate of forest change used is the one proposed by FAO (1995) as quoted by Puyravaud (2003):

$$q = \left(\frac{A_2}{A_1} \right)^{1/(t_2 - t_1)} - 1$$

Where

q = Deforestation rate (per year)

A_1 = Forest cover at time t_1

A_2 = Forest cover at time t_2

Puyravaud concludes that this formula is more commonly used and gives lower values of deforestation compared to the one proposed in his study, therefore the q equation is selected since we consider it conservative for estimating deforestation.

The negative sign in the results indicates that there is a loss of forests during the period of analysis. To specify only the amount of forest cover change, the formula is expressed as:

$$q = \left[\left(\frac{A_2}{A_1} \right)^{1/(t_2 - t_1)} - 1 \right]$$

This equation has been used to determine the historical deforestation rate of Negative Opportunity Cost and Mining Strata.

The Puyravaud article, published in the Forest Ecology and Management Scientific Journal (2003) is attached to this NCR.

Bibliography:

- J. P. Puyravaud, 2003. Standardizing the calculation of the annual rate of deforestation. Forest Ecology and Management 177: 593-596.
- FAO, 1995. Forest resources assessment 1990. Global Synthesis. FAO, Rome.

Validator Response:

The complete response was adequate to close this non-conformance report.

NCR Number 2011.72 of 79 Dated 02/02/2012

Finding:

Please remove as this is no longer a step in BL-UP version 2.0

Proponent Response:

Section 2.4 is no longer part of the BL-UP document. Please revise the new version already send.

Validator Response:

The complete response was adequate to close this non-conformance report.

NCR Number 2011.73 of 79 Dated 02/02/2012

Finding:

Please explicitly demonstrate that the DINAMICA software meets the 4 requirements of BL-UP Section 3.1.1.

Proponent Response:

According to BL-UP, project proponents must identify the model/software that will be used to analyze where deforestation is most likely to happen in future periods. The model/software used must:

- Be peer-reviewed
- Be transparent (no “black box” calculations such as neural networks)
- Incorporate spatial datasets that have been documented to explain patterns of and are correlated with deforestation (both raster and vector)
- Be able to project location of future deforestation

As explained, we are working with DINAMICA EGO tool (<http://www.csr.ufmg.br/dinamica/>), which is a software developed by the Center of Remote Sensing from the Universidad Federal de Minas Gerais, leaded by internationally acknowledge scientist Britaldo Silveira Soares-Filho. The first version was used to model different scenarios of deforestation trend throughout the whole Amazon Basin, published in Nature magazine, Vol. 440|23 March 2006|doi:10.1038/nature04389 and has been used lately for many other institutions as Carbon Decisions International (Lucio Pedroni's consultancy company), among others. In that sense, we consider that the software has been largely peer-reviewed by recognized scientists and REDD experts worldwide. As can be read in the program guidelines, information of local experts can be introduced in substitution of pure statistical parameters, if considered.

Here is a list of other regional studies, mainly conducted in the Amazon basin and using DINAMICA EGO, confirming that it is a peer-reviewed software used to model natural and social dynamics:

- Almeida, C.M. et al Modeling Urban Land Use Dynamics through Bayesian Probabilistic Methods in a Cellular Automaton Environment. INPE- UFMG.
- Soares-Filho, B. et al. DINAMICA – a stochastic cellular automata model designed to simulate the landscape dynamics in an Amazonian Colonization Frontier. ELSEVIER, Ecological Modeling 154 (2002) 217-235.
- Mas, J.F.; Flamenco, A. 2011. Modelación de los cambios de coberturas/uso del suelo en una región tropical de México. GEOTROPICO, 5(1), Artículo 1:1-24.
- Nunes, F. et al. Economic benefits of conservation: assessing the potential rents from Brazil nut concessions in Madre de Dios, Peru, to channel REDD+ investments. Foundation for

Environmental Conservation 2012.

Validator Response:

The response was adequate to close this non conformance report..

NIR Number 2011.74 of 79 Dated 02/02/2012

Finding:

Please confirm that the remote sensing data used in section 3.1.2 meets the requirements of BL-UP sections 2.1.1-2.1.4

Proponent Response:

Given that our RRD is fully covered by the RRL, the same forest/non-forest maps were used for RRL. The elaboration of these maps were already explained in steps 2.1.1 to 2.1.4 of BL-UP, and meets all the requirements listed in said steps.

The other special datasets used in the modeling are:

Total list of Spatial Datasets gather for the Castañeros REDD Project

Nº	Spatial Dataset	Source	Year
1	Reforestation Concessions	Forestry and Wildlife General Direction (DGFFS)	2010
2	Forestry Concessions	Forestry and Wildlife General Direction (DGFFS)	2010
3	Native Communities	Instituto del Bien Común (IBC)	2009
4	Brazil Nut Concessions	Forestry and Wildlife General Direction (DGFFS)	2010
5	Mining Concessions	Geological Mining and Metallurgical Institute (INGEMMET)	2011
6	Land Use	Peruvian Amazon Research Institute (IIAP) - Regional Government of Madre de Dios (GOREMAD)	2009
7	Protected Natural Areas	National System for Protected Natural Areas (SERNANP)	2009
8	Quaternary Holocene	Peruvian Amazon Research Institute (IIAP) - Regional Government of Madre de Dios (GOREMAD)	2009
9	Agricultural Parcels (PETT)	Regional Government of Madre de Dios (GOREMAD)	2009
10	Geology	Peruvian Amazon Research Institute (IIAP) - Regional Government of Madre de Dios (GOREMAD)	2009
11	Productive Aptitude	Peruvian Amazon Research Institute (IIAP) - Regional Government of Madre de Dios (GOREMAD)	2009
12	Vegetation	Peruvian Amazon Research Institute (IIAP) - Regional Government of Madre de Dios (GOREMAD)	2009
13	Interoceanic Highway (IOH)	Regional Government of Madre de Dios (GOREMAD)	2009
14	Secondary Roads until 1999	Regional Government of Madre de Dios (GOREMAD)	2009
15	Secondary Roads until 2007	Asociación para la Conservación de la Cuenca Amazónica (ACCA)	2009
16	Hydrographic System	Peruvian Amazon Research Institute (IIAP) - Regional Government of Madre de Dios (GOREMAD)	2009

17	Settlements	Regional Government of Madre de Dios (GOREMAD)	2009
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The column Year of the above chart refers to the year in which the data was obtained from the official sources, also listed. All of these sets were received in shape (vector) files, and were converted to raster files automatically by the modeling software.

The Data sets created from GPS coordinates, obtained during field work are:

- Reforestation Concessions
- Native Communities
- Brazil Nut Concessions
- Forestry Concessions
- Mining Concessions
- Agricultural Parcels (PETT)
- Interoceanic Highway (IOH)
- Secondary Roads until 1999
- Secondary Roads until 2007
- Settlements

Validator Response:

Clarifications are sufficient to close this new information request.

NIR Number 2011.75 of 79 Dated 02/02/2012

Finding:

Image presented in the response to requirements of BL-UP require a distance scale, north arrow, and outline of PA, RRD, and IOH

Proponent Response:

The maps showed in Image 8 are now modified, so they have all the features of a map.

These maps aimed to represent the raster files of forest and deforestation in year 2000 and 2005 that are put in the modeling software, along the other spatial datasets, to create the risk maps. Therefore it is not necessary to include the shapes of Project Area and RRD in them.

In a previous section of BL-UP we will include the historic deforestation maps in RRD.

Validator Response:

The improvements made by the project proponent are sufficient to close this issue.

NCR Number 2011.76 of 79 Dated 02/02/2012

Finding:

(Describe and provide objective evidence)

Please demonstrate and document in the PD that the FOM (figure of merit) meets the minimum eligibility criteria for frontier deforestation the FOM (i.e. a minimum of 40% to be considered eligible).

Proponent Response:

(Describe and provide objective evidence)

In order to account for the FOM estimation, we will explain first the two previous steps (3.1.2 and 3.2) so you have a complete idea of the work done. All this information will be included in the BL-UP document, along with more details.

3.1.2 Preparation of spatial datasets

We collected existing digital layers that are officially used in the MDD Region, from different institutions (GOREMAD, ACCA, COFOPRI, etc.), trying to get at least 1 factor of each of the four classes presented in the module:

Classes	Factors
Landscape	Soil Use (1)
Landscape	Holocene Quaternary (2)
Landscape	Geology (3)
Landscape	Productive Aptitude (4)
Landscape	Vegetation (5)
Accessibility	Distance to Secondary Roads (6)
Accessibility	Distance To Rivers (7)
Accessibility	Distance to Interoceanic Highway - IOH (8)
Anthropogenic	Distance to Settlements (9)
Anthropogenic	Distance to Deforested Areas (10)
Land Tenure	Reforestation Concessions (11)
Land Tenure	Native Communities (12)
Land Tenure	Forestry Concessions (13)
Land Tenure	Brazil Nut Concessions (14)
Land Tenure	Mining Concessions (15)
Land Tenure	Protected Natural Areas (16)
Land Tenure	PETT (17)

As the modeling is based on the statistical method “Weights of Evidence”, whose condition is that no correlation exists between the factor maps, and given that some of them represent similar factors (e.g. Geology's Map and Holocene Quaternary's Map); we made a correlation analysis for all the factors, using Cramer's Test and Joint Information Uncertainty's Test. The maximum acceptable values were 0.45 and 0.35 respectively¹.

The results from this analysis is that the following factors are correlated and should be discarded, or not use at the same time:

PETT	Distance to IOH
Distance to Secondary Roads	PETT
Distance to Deforested Areas	PETT
Productive Aptitude	Geology
Productive Aptitude	PETT
Productive Aptitude	Soil Use
Productive Aptitude	Vegetation
Geology	Soil Use
PETT	Vegetation
PETT	Distance to Settlements

Soil Use	Vegetation
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3.2. Preparation of Deforestation Risk Maps

With this information we created 7 scenarios that combined differently the factors mentioned above, being careful not to mix those correlated. The same correlation analysis was remade for each scenario, to check the inexistence of any correlation.

Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
12	16	16	4	16	16	16
13	13	13	16	13	13	13
15	15	15	13	15	3	2
16	16	16	15	16	15	15
14	14	14	16	14	16	16
11	11	11	14	17	14	14
1	1	5	11	11	11	11
8	9	8	8	1	8	8
9	10	9	9	10	9	9
10	6	10	10	6	10	10
6	7	6	6	7	6	6
7		7	7		7	7

* The numbers in the table correspond to the given value to each factor.

¹ These thresholds are very conservative, and were taken from “Modelling Urban Land Use Dynamics through Bayesian Probabilistic Methods in a Cellular Automaton Environment”, INPE-UFMG.

In spite of the previous selections, we found that some factors were still correlated, either by the index of Cramer or the Joint Information Uncertainty index, though it is worth mentioning that only in one scenario the correlated value exceeded 0.5 (generally from this number is considered high correlation). For this reason, we developed a Risk Map for all the scenarios, and then compared them in the next step, so that the most accurate one would be used for modeling the Baseline deforestation.

Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
8 - 9 Cramer	No Correlation	14 - 5 Cramer	4 - 14 Cramer	6 - 17 Cramer	8 - 9 J.I.U.	2 - 7 Cramer
		13 - 5 Cramer	4 - 13 Cramer	6 - 7 Cramer		8 - 9 J.I.U.
		8 - 9 J.I.U.	8 - 9 J.I.U.			

* The numbers in the table correspond to the given value to each factor.

J.I.U. = Joint Information Uncertainty

3.3 Selection of the most accurate Deforestation Risk Map

The Figure of Merit (FOM) was elaborated for each of the 7 Prediction Maps created, to test their accuracy in modeling the deforestation, as follows:

- A Prediction Map was created for each Risk Map, for the confirmation period (2005-2008).
- These Prediction Maps were overlapped to the real deforestation map of year 2008.
- Each FOM was calculated, and it resulted that all of the Prediction Maps had values over 60%, which complies with the minimum limit of 40% for frontier deforestation.

	Prediction Maps						
	1	2	3	4	5	6	7
<i>Correct</i>	275,749.30	276,135.40	279,858.70	279,131.30	275,977.10	275,946.40	276,090.50
<i>Err_A</i>	51,074.90	50,680.20	46,849.00	47,696.90	50,921.70	50,959.00	50,796.10
<i>Err_B</i>	119,466.20	119,066.40	115,232.70	116,087.20	119,157.60	119,365.80	119,261.50
FOM	61.787	61.93	63.325	63.021	61.87	61.834	61.883

Finally, we selected Prediction Map 2 that, despite of not having the biggest FOM value, its risk map was elaborated using the least number of drivers (11), and no-correlation was found between its factors.

Validator Response:

NCR Number 2011.77 of 79 Dated 02/02/2012

Finding:

Please remove reference to equation 1 of M-MON from Section 3.2 of the PD, as this equation does not demonstrate that project emissions are zero. Step 1, d of VM0007 (REDD-MF) states that 'The project shall account for any significant increases in emissions of carbon dioxide, nitrous oxide and methane relative to the baseline that are reasonably attributable to the project activity. It is not adequate to make the statement, as found in Section 2.1 of the Castana T-SIG document: The estimation of the GHG emissions by sources is not considered since there are no emissions from the project implementation (such as due to site preparation or grazing). Therefore it is only considered the possible decreases in carbon pools stocks. T_SIG must include an acknowledgement of project activities and emissions related to those activities. As such, the emissions from project activities such as forest monitoring and surveillance (including the patrolling component), construction of checkpoints and other infrastructure, use and maintenance of the machinery and equipment listed on p12 of the PD, and any emissions related to brazil nut processing or the processing plant (i.e. a diesel generator for power supply) need to be addressed and either ruled out as de minimum or included in project carbon accounting. T-SIG shall be used to determine whether an emission source is significant. If a source is included in the estimation of baseline emissions, it shall be included in the calculation of project and leakage emissions". Please use T-SIG to demonstrate emissions in the baselines; they must also be included in the with- project scenario. Exclusion of emissions from combustion of fossil fuels is only optional if shown to be insignificant using T-SIG.

Proponent Response:

The GHG emissions by sources from the project implementation are not considered since they are proved to be insignificant. The project implementation activities considered for the calculation were: Forest

monitoring and surveillance, construction of checkpoints, construction and activity of tree nursery, and activity of Brazil nut processing plant. The emissions from biomass burn inside Leakage Belt in the with-project case were also accounted, as required in step 5.2.5 of M-MON.

Validator Response:

The response provided was sufficient to close this issue.

NIR Number 2011.78 of 79 Dated 02/02/2012

Finding:

Please explicitly state if option 1 or 2 was used in the estimation of post deforestation carbon stocks.

Proponent Response:

The estimation of post-deforestation carbon stocks was performed using the simple approach (option 1) proposed at VCS Module VMD0007.

Validator Response:

The response provided and additional text presented in the project documentation was sufficient to close this issue.

NIR Number 2011.79 of 79 Dated 02/02/2012

Finding:

In the module LK-ASU please ensure all Tables are presented in English.

Proponent Response:

Tables were translated as requested.

Validator Response:

The provision of translated Tables was sufficient to close this issue.