ASSESSMENT REPORT

OF

IFM-LtPF Methodology

Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)

Voluntary Carbon Standard (VCS 2007.1, 2008)

REPORT NO.
BVKL/09/JT/Q567

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Carbon Planet Limited	BVKL/ 09/ JT/ Q567

Summary

To meet the requirement of VCS Double Approval process, second assessment for the "IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)" is carried out by Bureau Veritas Certification. Assessment is on the basis of Voluntary Carbon Standard Program (VCS Program) which includes the Voluntary Carbon Standard (VCS 2007.1, 2008), the VCS Program Guidelines, and the VCS Agriculture Forestry and Other Land Use (AFOLU) project tools. The VCS 2007.1, 2008 is designed for project proponents, validators and verifiers and provides a global standard for voluntary GHG emission reduction and removal projects and their validation and verification. The core of this standard are the requirements in ISO 14064-2:2006, ISO 14064-3:2006 and ISO 14065:2007.

The first output of the evaluation process is a checklist of Corrective Actions Requests (CARs) and Clarifications (CLs), presented in Annex A. In terms of this output, the methodology proponent revised the new methodology document.

The validation is an independent third party assessment of the new methodology. In particular the validation has to confirm that the baseline, the monitoring plan, and the entire methodology are in compliance with relevant VCS rules and procedures. The validation of the new methodology done through a double approval process, according to VCS standard, is required as necessary to provide assurance to stakeholders of the quality of the new methodology.

According to the above mentioned double approval process, a proposed VCS methodology has to be available for public comments for 30 days. This happened with this methodology from 5th of August 2009 to 4th of September 2009 and received four set of comments. Project proponent has adequately responded to the issues raised for which the details are presented in Annex B.

In summary, it is Bureau Veritas Certification's opinion that the new methodology correctly meets the relevant Voluntary Carbon Standard (VCS 2007.1, 2008) requirements.

Report No.:	Subject Group:	
	VCS- AFOLU-IFM	
Project title: IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)		
Work carried out by: Dr. P.C Anil		
Work verified by: Mr. Flavio Gomes		
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Indexing terms

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Abbreviations

AFOLU	Agriculture Forestry and Other Land Use
AM	Approved Methodology
A\R	Afforestation and Reforestation (Under CDM)
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CH_4	Methane
CL	Clarification Request
CO_2	Carbon Dioxide
GHG	Greenhouse Gases
GIS	Geographic Information System
GPS	Global Positioning System
IFM	Improved Forest Management
IPCC	Intergovernmental Panel on Climate Change
LtPF	Logged to Protected Forest
LULUCF	Land Use, Land Use Change and Forestry
N_2O	Nitrous Dioxide
PD	Project Description
PP	Project Proponent
PRA	Participatory Rural Appraisal
RA	Rainforest Alliance
VCS	Voluntary Carbon Standard

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1 INTRODUCTION

Bureau Veritas Certification (BVC) has performed the second assessment under the VCS Double Approval Process for IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management) prepared by Carbon Planet.

This report summarizes the findings of assessment of the new methodology, performed on the basis of the criteria proposed to provide consistent Voluntary Carbon Standard (2007.1, 2008) application, monitoring and reporting.

Bureau Veritas Certification operated in the capacity of second validator.

This assessment is prepared based on the following documented methodology IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management). Version: 3.1.1 dated 6, October, 2010.

2 OBJECTIVE

2.1 The purpose of independent entity assessment report is to review the new methodology documentation and to assess whether the following issues are found appropriate and adequate:

Methodology's applicability criteria;

Project baseline;

Additionality;

Definition of the project's physical boundary;

Sources and types of gases included;

Estimation of baseline emissions;

Estimation of project emissions, and emission reductions;

Approach for calculating leakage;

Monitoring approach;

Monitored and not monitored data and parameters used in emissions calculations.

2.2 The new methodology has to comply with the following VCS 2007.1 requirements:

All methodologies applying for approval under the VCS Program shall be approved via the double approval process (VCS, 2007.1, Section 6.1);

VCS Program methodologies shall comply with all requirements in the VCS 2007.1, clause 6.1 to 6.4.4 (VCS, 2007.1, Section 6.1);

VCS Program methodologies shall include (VCS, 2007.1 Section 6.1):

- Applicability criteria that defines the area of project eligibility;

- A process that determines whether the project is additional or not (based on criteria laid down in clause 6.4);
- Determination criteria for the most likely baseline scenario; and
- All necessary monitoring aspects related to monitoring and reporting of accurate and reliable GHG emission reductions or removals;

Methodologies shall be informed by a comparative assessment of the project and its alternatives in order to identify the baseline scenario (VCS, 2007.1, Section 6.1);

The project proponent shall select the most conservative baseline scenario for the methodology. This shall reflect what most likely would have occurred in the absence of the project (VCS, 2007.1, Section 6.3).

In developing the baseline scenario, the project proponent shall select the assumptions, values and procedures that help ensure that GHG emission reductions or removal enhancements are not overestimated (VCS, 2007.1, Section 6.3)

Based on selected or established criteria and procedures, the project proponent shall quantify GHG emissions and/or removals separately for:

- Each relevant GHG, for each GHG source, sink and/or reservoir relevant for the project; and each GHG source, sink and/or reservoir relevant for the baseline scenario;
- When highly uncertain data and information are relied upon, the project proponent shall select assumptions and values that ensure that the quantification does not lead to an overestimation of GHG emission reductions or removal enhancements (VCS, 2007.1, Section 6.5.2).

2.3 For the case of AFOLU methodology, what is the case of this proposed methodology, the new methodology also have to comply with the VCS Tool for AFOLU Methodological Issues and the VCS Guidance for Agriculture, Forestry and Other Land Use Projects.

3 ASSESSMENT SCOPE

The assessment scope is defined as an independent and objective review of the new baseline and monitoring methodology document. The information in this document is reviewed against the i) Voluntary Carbon Standard 2007.1,2008 (VCS 2007.1,2008). ii) VCS Program Normative Document: Double Approval Process, v1.0, iii) VCS Tool for AFOLU Methodological Issues iv) VCS Guidance for Agriculture, Forestry and Other Land Use Projects and v) IPCC 2006 Guidelines (GL) for AFOLU, and also against the A/R methodologies and technical documents referenced by the methodology.

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The scope of this assessment, as required by the VCS Program Normative Document: Double Approval Process, v1.0 includes at a minimum, the following:

i. Eligibility criteria. Assessment of whether the methodology's eligibility criteria are appropriate and adequate.

ii. Baseline approach: Assessment of whether the approach for determining the project baseline is appropriate and adequate.

iii. Additionality: Assessment of whether the approach/tools for determining whether the project is additional are appropriate and adequate.

iv. Project boundary: Assessment of whether an appropriate and adequate approach is provided for the definition of the project's physical boundary and sources and types of gases included.

v. Emissions: Assessment of whether an appropriate and adequate approach is provided for calculating baseline emissions, project emissions and emission reductions.

vi. Leakage: Assessment of whether the approach for calculating leakage is appropriate and adequate.

vii. Monitoring: Assessment of whether the monitoring approach is appropriate and adequate.

viii. Data and parameters: Assessment of whether monitored and not monitored data and parameters used in emissions calculations are appropriate and adequate.

ix. Adherence to the project-level principles of the VCS Program: Assessment of whether the methodology adheres to the project-level principles of the VCS Program (see Section 5.1.1).

The evaluation is not meant to provide any consulting towards the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the methodology design.

4 EVALUATION PROCESS

The evaluation process consisted of the following three phases:

- Desk review of the new methodology document;
- Follow-up interviews with project stakeholders;
- Resolution of outstanding issues and the issuance of the final assessment report and opinion.

The overall validation, from Contract Review to Assessment Report and Opinion, was conducted using Bureau Veritas Certification internal procedures.

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5 CONFLICT OF INTEREST REVIEW

Prior to beginning of the independent assessment work on the methodology, Bureau Veritas Certification has conducted an evaluation to identify any potential conflicts of interest associated with the task. No potential conflicts were found for this project.

6 ASSESSMENT TEAM

Bureau Veritas Certification assessment team consisted of the following individuals who was selected based on his GHG validation experience, as well as familiarity with the sectoral scope 14 (Agriculture, Forestry and Other Land Use):

Flavio Gomes – Internal Technical Reviewer

Anil P.C – Forestry Expert and Verifier

7 CORRECTIVE, CLARIFICATIONS, FORWARD ACTIONS REQUESTS AND SUPPLEMENTAL INFORMATION

The team requested clarification and supplemental information as well as several corrective actions during the validation. The corrective action, clarifications, forward actions requests, supplemental information and the responses provided are summarized in the following sections in Annex A for transparency reasons.

8 ASSESSMENT RESULTS: EVALUATION OF THE PROPOSED NEW METHODOLOGY BY THE DESK REVIEWER

Evaluation of the proposed methodology as per the guidance of VCS – AFOLU Project Standard to meet the guidelines, requirement and necessary tools for addressing the methodological issues has been completed. It has been confirmed that the requirements against the Standard are appropriately and adequately met, addressing the scope of the methodology.

The validation process focussed on assessing the appropriateness and adequacy of the new methodology's applicability criteria, baseline approach, additionality, project boundary, emissions, leakage, monitoring, data and parameters, and compliance in the application of the new methodology with the Voluntary Carbon Standard (VCS, 2007.1, 2008). The assessment results are summarized below, which are further substantiated with details in the following sections and in the Annex A.

The proposed methodology is equipped to address project activities which would prevent degradation from a previously logged or intact forest through the cessation of a baseline activity of selective logging.

8.1 Coverage of the Voluntary Carbon Standard 2007.1, 2008 new methodology sections as outlined in the applicable guidelines.

8.2 The language is sufficiently transparent, precise and unambiguous to undertake a full assessment.

8.3 The proposed methodology reflects methodology-specific information and not project specific information.

8.4 The baseline methodology is internally consistent i.e., the applicability conditions, project boundary, baseline emission estimation procedure, project emission estimation procedure, leakage, and monitoring.

8.5 The baseline scenario identification has a clear and concise presentation of methodological steps to identify baseline scenario and baseline emissions.

8.6 The additionality section has clear and concise presentation of methodological steps to assess additionality.

8.7 The emission reductions calculation section has relevant formula provided and all variables used are adequately explained.

8.8 All the issues raised in the methodology desk review are addressed and are sufficiently and properly explained.

8.9 The baseline methodology is internally consistent with the monitoring methodology, which is clearly documented in accordance with applicable guidelines.

9 OUTLINE CHANGES NEEDED TO IMPROVE THE METHODOLOGY DURING THE PRELIMINARY ASSESSMENT AND SUBSEQUENT REVIEWS

9.1 Major changes

No major changes or structural changes were needed to improve the methodology.

9.2 Minor changes

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Spatial definition in terms of geo-reference for the geographic boundary was not addressed. Section 2.2.1.1 in the Version 3.1.1 of the methodology document pertains only to the Project Area and the requirements stated in the Section exclusively adheres to the Project Area. Differentiation of the Project Area and the Leakage Area within the geographic boundary with geo-references was the second requirement. Therefore the CAR 01 was raised. The CAR 01 is closed with the incorporation of the requirement in Section 2.2.1.1 in the version 3.1.2 of the methodology document which explicitly states for the requirement of geo-digital maps of the geographic boundary differentiating the Project Area and the Leakage Area. The methodology is now equipped to address the geographic boundary with a spatial definition using geo-referencing digital tools. The same method will be employed to distinguish the project area and the leakage area within the geographic boundary. Both the project area and the leakage areas will have its boundaries geo-referenced, employing digital tools. This is in addition to the information provided for the project area, as provided in the methodological document and as per the VCS guidelines, such as the name, local name, compartment number, harvesting blocks, identification number and area for each forest compartment in the project area, the geographic co-ordinates obtained from the GPS or from the geo-referenced digital maps using GIS for each stratum including stratified maps for the forest area in the VCS PD. It is assumed here that the forest type maps, topographic maps, field verified aerial photographs and satellite data used for the stratification is available for the area within the geographic boundary which could be used for reference and would be made available during the validation and verification processes. This would facilitate easy identification and clear distinction of the Project Area, the Leakage Area and the geographic boundary which contains both the areas, in the field, for validation and verification purposes.

The Section 2.1.3 which deals with demonstration and assessment of additionality had only a brief mention of the three steps, regulatory surplus, implementation barriers and common practice. The footnote also does not mention or direct the PP to utilize or employ the VCS tool for demonstration and assessment of additionality. Therefore CAR 02 was raised to equip the methodology to employ the VCS approved Tool VT 0001 “Tool for the demonstration and assessment of additionality in VCS Agriculture Forestry and Other Land Use project activities” The CAR 02 is closed with the addition of a footnote in Page 14 with reference for employing the approved latest available version VCS Tool VT0001. This will facilitate the PP to carry out a detailed analysis and presentation of the project situation with reference to the demonstration

and assessment of additionality in the VCS PD. This would also help the validator in easy and effective scrutiny of the Project Activity with reference to the VCS Tool and PD.

To address occurrence of GHG emissions associated with peatland, if any, CAR 03 was raised. This CAR is closed with the project owner's response that it has been incorporated in the applicability criteria in Table 1.1 under "Type of Forest" as "except peat swamp forests" in version 3.1.2 of the document. Of the eligible types of forest listed in the applicability criteria of this methodology, peat swamp forests have been excluded.

Fuel wood harvested on a commercial scale is described in the methodology document as an important forest product and a significant driver of degradation. But this activity is not addressed and accounted as a source of leakage. CAR 04 was raised to address this issue. Version 3.1.2 of the document contains incorporation of "commercially harvested fuel wood along with the harvested wood products (sawlog and pulplog) in Section 5.1, 5.2 and 5.2.1 addressing identification of leakage, activity shifting and intensification of harvest. Subsequently the CAR 04 is closed with the aforementioned modifications.

The methodology applies to the forest area within the project area as a single land parcel. In case of any occurrence of multiple discrete land parcels, this methodology instructs for the calculation of net GHG emission reductions and non permanence assessment to be done separately for each single land parcel and included in one VCS PD (Table 1.1, page 7 of the methodology). CAR 06 is raised to address description for each discrete land parcel with well described physical boundary as per VCS requirement and guidelines. CAR 06 is closed with the requirement added in Table 1.1 of Page 7 as well as in Section 2.2 of version 3.1.2. This now reads as "If the Project Proponent intends to use this methodology for multiple discrete land parcels, the geographical boundary and the digital map of each digital map of each land parcel must be provided as a single Project Area (see section 2.2.1.1) and the calculation of net GHG emission reductions and non-permanence assessment must be done separately for each single land parcel and included in one VCS Project Description (VCS PD) (VCS 2008c, p.5)." In addition to this in the section 2.2.1.1, it is added that, "In the case this Methodology is used for multiple discrete land parcels, each land parcel is treated as a separate Project Area and requires all the detail information/documentation as well as the digital maps as stated above."

The CAR 07 is raised for elaboration in the document regarding methods and tools employed in estimation of emission resulting from natural disturbances. The Project owner has made the necessary changes and the CAR 07 is closed. Aerial and ground surveillance will monitor the incidence of fire and as well be the method employed to quantify the damage. It is incorporated

that the aerial surveillance and ground patrolling to monitor the project area for natural disturbances followed by field checking to verify the extent and areas of damage in the third dot point in Section 4.4. As there are limitation in the technology for the desired output, at the time when the methodology is getting approved, it is suggested to employ the best available satellite data and literature cited of 1998 is being replaced by a more recent one (2009) which can expect to provide the latest or most updated technological input, at the time of approval of this methodology. It has been added that the Project Proponent shall keep detail and accurate records of the emission associated with the project activities including the monitoring of the project area for natural disturbances. Such records and data must be submitted along with the monitoring report to the Verifier. The symbols used for the parameter for annual emissions due to ground and air travel being not the same in equations 4.13 & 4.14 with Table 7.3 is now changed as $KM_{monitoring\_ground,,t}$ and $KM_{monitoring\_flight,,t}$.

CAR 08 was raised to address emissions related to forest patrolling and allied activities carried out as part of forest protection and surveillance. The Project Owner responded to account for emissions resulting from forest patrolling and allied activities addressed under the emissions from aerial surveillance and ground patrolling for monitoring the Project Area. Changes are incorporated in sections 4.2.1, 4.2.2, 4.3, 4.3.1, 4.3.2, and 4.4 in the Version 3.1.2 of the methodology document and the CAR 08 is closed.

CL 03 was raised for defining non-tree with relevance to the project situation and the same was closed with the definition beingadded in Appendix A.1.

CAR 09 was raised to explain illegal harvesting activity in the methodology document within the context of the IFM-LtPF project situation for the benefit of PPs and readers of this methodology. The incorporated text which explains in Section 4.5 of Version 3.1.2 of the document now reads as ".Under the IFM-LtPF project scenario, the Project Area is completely protected and the Project Proponent must stop selective harvesting operation as well as harvesting by other agents of deforestation. All harvesting operations in the Project Area during the Project Crediting Period are considered as illegal harvesting". The explanation is within the scope and context of this methodology and CAR 09 was closed.

Investigation of illegal harvesting in the field using the field inventory method in Section 4.5.1 states that the field teams will collect data on the quantity of the wood illegally harvested from

the project area through observation or interviews. Step 1 instructs to quantify the same through field surveys. CAR 10 was raised to bring clarity on the proposed method to be employed. Project Owner responded elaborating on the method of data collection in the field to assess illegal harvesting.. For estimating the total volume of wood illegally harvested, stump diameter will be measured and species specific models will be used to predict tree volumes based on the peer reviewed literature. The literature reference is provided. To identify the sensitive areas which are more prone to, or hot spots in relation to relatively higher probability of incidence of illegal harvest and/or intensity, if any exists, appropriate PRA tools will be employed. This would also help to generate information on the causal agents continuously monitored over a period of time which would provide useful insights into the validation and verification processes in assessing the non permanence risk factors. The observation or interviews to be carried out for investigating illegal harvesting is proposed to employ PRA tools and techniques in Version 3.1.2 of the same section. Literature reference for the same is also provided. Method for the field survey is also elaborated and hence the CAR 10 is closed. It is assumed that the PP will identify relevant stakeholders and employ appropriate PRA tools and techniques for the investigation.

CAR 11 was raised to address land eligibility and with the addition as a title heading in the section 2.2.1.1 where the text contains the required information the CAR 11 was closed.

Methodology directs to assess the Intensification of logging operations to compare the actual harvest with that of historical harvest data of the Project Proponent and for cases where history of harvesting operations is less than five years, then the actual number of operational years that the project proponent has been operating, prior to the start of the project activity must be used as the historical reference period. CAR 12 is raised to address project situations with PP having no history of logging or with less than 5 years of harvesting operations using the average volume of harvest from the actual number of operational years. It has been agreed upon that for comparison, a harvest volume data from a forest type with comparable situations and conditions is proposed to be used for comparing the intensity of the newly logged areas by the Project Proponent after the project start date. This is to account for the increased intensity (if any) than the commonly practiced volumes, (local, regional or national, a most conservative estimate) in the newly logged areas after the project start date by the Project Proponent. It is also added that the “Project Proponent shall provide the data source and collection method for the common harvest volume from the forest comparable situations and conditions to the Verifier along with the monitoring report for verification.”

In the section 5.2 addressing leakage assessment and management the following information as per the requirement provided in the VCS guidelines is incorporated. " The Project Proponent must provide documentation for the potential leakage areas due to the activity shifting (ie, other lands owned or operated by the Project Proponent) including geo-referenced or digital maps illustrating the physical location(s) and their boundaries, existing land uses and management plans at each verification period (VCS, 2008c; p.26)".CAR 13 was raised to incorporate the requirement in the Version 3.1.1 and with verification of the required modification in Version 3.1.2 of the methodology document, the CAR 13 is closed.

9.3 Changes suggested by Public Comments

According to the VCS methodology double approval process, a proposed VCS methodology has to be available for public comments for 30 days. This happened with this methodology from 5th of August 2009 to 4th September 2009 and received four set of comments. For more information regarding the public comments, the changes suggested and how they were taken due account, please refer to Annex B.

9.4 Issues raised during the reassessment of the first validator upon the version 3.1.2 of the methodology

Version 3.1.2 of methodology document with title "IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)" contains the changes incorporated during the second assessment process. This version was submitted to the appraisal of the first validator (Rainforest Alliance). The first validator assessed the changes made by the second validator and concluded that the methodology was still in conformance with the standard. No issues were raised during the reassessment by the first validator (Rainforest Alliance) and have accepted the changes made during the second assessment process by the second validator (Bureau Veritas certification).

10 GENERAL INFORMATION ON THE SUBMITTED PROPOSED NEW METHODOLOGY

The following description of each section of the IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management) was reviewed from the preliminary version of this report in order to consider the ultimate modifications done in the ultimate version (Version 3.1.2) approved by both validators.

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10.1 One sentence describing the purpose of the methodology

The methodology facilitates the quantification of the net GHG benefits associated with an Improved Forest Management – Logged to Protected Forest (IFM-LtPF) activity which prevents the degradation of a forest through the cessation of a baseline activity of selective logging.

10.2 Summary description of the methodology

1) Baseline scenario – Establishing the most likely baseline scenario is through identifying of baseline alternative scenarios. The baseline scenario shall reflect what most likely would have occurred in the absence of the project. It consists of selective logging which involves the annual removal of merchantable trees with a minimum diameter at breast height as defined by the relevant authority in the host country.

2) Additionality - The project developer will demonstrate that the proposed project activity is not the best attractive option to undertake unless the project activity could be registered under VCS.

3) Baseline emissions are calculated based on the annual GHG emissions resulting due to degradation of project area as well as annual emissions due to the selective logging operations.

4) Project activity emission is GHG emission associated with the implementation of forest protection with out selective logging.

5) Leakage emission – Leakage emission resulting from degradation due to shifting of the baseline activity and emissions from the associated activities outside the project area and emission due to shifts in supply and demand of products and services affected by the project activity.

6) Calculation and monitoring of emission reduction - Emission reduction is estimated from the annual total carbon emissions associated with the baseline activity and by subtracting the emission associated with the project activity and leakage, since the start of the IFM- LtPF project activity.

The monitoring methodology provides guidance for monitoring of the parameters employed to calculate carbon changes due to forest degradation as well as emissions due to implementation of project and baseline activities. The accounting components are:

Monitoring of carbon changes of the baseline activity of selective logging

Monitoring of emissions due to implementation of the baseline and IFM-LtPF project activity

Monitoring of leakage emissions

Estimation of ex-post total net anthropogenic GHG emission reductions

Monitoring of emission reductions would be done according to the prescription for determination of baseline and project emissions, and leakage in the proposed methodology.

10.3 Relationship with approved or pending methodologies

Some parts of the document "IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)" were taken directly from:

- Approved afforestation and reforestation baseline methodology, (CDM) AR-AM0005/Version 4, Afforestation and reforestation project activities implemented for industrial and/or commercial uses.
- Approved VCS Methodology VM0003 Version 1.0, Methodology for Improved Forest Management through extension of rotation Age.

11 DETAILS OF THE EVALUATION OF THE PROPOSED NEW METHODOLOGY

The following validation process description refers only to the assessment carried out by the second validator based in the version 3.1.1 of the methodology. This following description addresses the issues raised by the second validator.

11.1 Applicability conditions

This methodology is applicable to Improved Forest Management (IFM) activities defined by the VCS as those activities implemented on forest lands managed for harvested wood products such as sawlog, pulplog, and commercially harvested fuelwood and that are included in the IPCC category "forests remaining as forests".

Only areas that have been designated, sanctioned or approved for selective logging by the relevant authority in the host country are eligible for crediting under this VCS Improved Forest Management (IFM) Logged to Protected Forest (LtPF) project category.

In particular, this methodology is applicable to Improved Forest Management – Logged to Protected Forest in an intact forest or previously logged forest (also known as forest degraded due to logging) with no removals (eg. harvesting, planned biomass burning) occurring in the Project Area upon implementation of the actual project (with the exception of felling sample trees for validating or deriving project specific parameters)

Land within the Project Area must have qualified as forest at least 10 years before the project start date.

Forest types include tropical forests such as evergreen tropical rainforests, moist deciduous forests, tropical dry forests and tropical upland forests.
Legally sanctioned logging (timber and commercially harvested fuelwood) undertaken in accordance with the relevant laws, regulations and codes of practice of the country in which the methodology is being applied.

Project Proponents may be organization / individual(s) that has overall control and responsibility for the IFM-LtPF project activity (VCS 2008e, p. 6; ISO 2006, p. 2) that can include but is not limited to logging companies, Forestry department or its equivalent authority, within the government of the host country, Landowners and landowner companies (e.g. incorporated landowner groups), Organization contracted by any of the above to provide overall control and responsibility for the IFM-LtPF project activity.

Displaced baseline activity will be legally sanctioned selective logging for specific forest product types as mentioned in this methodology.

This Methodology applies to the forest area within the Project Area as a single land parcel. If the Project Proponent intends to use this Methodology for multiple discrete land parcels, the calculation of net GHG emission reductions and non-permanence assessment must be done separately for each single land parcel and included in the one VCS Project Description

Carbon Dioxide (CO2) is considered as the principal sink or source. Nitrous Oxide (N2O) is not included to calculate associated nitrous oxide fluxes from soil (as it is assumed negligible because no fertilizer is applied), or for residual biomass from harvesting (as it is not piled or burnt). However, it is included to calculate emissions from fossil fuel use in machinery, subject to significance. It is also included to calculate emissions from natural disturbances such as forest fires, subject to significance. Methane (CH4) is not included to calculate associated methane fluxes from soil as it is assumed to be negligible. Similarly, residual biomass from harvesting is not piled or burnt. However, it is included to calculate emissions from fossil fuel use in machinery. It is also included to calculate emissions from natural disturbances such as forest fires, subject to significance.

Carbon pools considered include aboveground biomass (AGB) of all trees as defined by the relevant authority in the host country, harvested wood products (HWPs) based on domestic production not domestic consumption and deadwood (DW)

Pools not considered include aboveground biomass (non-trees), belowground biomass, soil and

litter.

11.1.1. Consideration of the validator regarding methodology applicability conditions

The applicability conditions stated by the methodology are consistent with the proposal and the technical approaches presented by the methodology.

11.2 Definition of the project boundary

The Project Area within the geographic boundary is well addressed and referenced. Spatial geo- reference with digital definition and physical description for the geographic boundary is now incorporated differentiating the project area and leakage area, with geo-references for each area, within the geographic boundary. Design and the method for Project area stratification is conceptualized well for addressing tropical situations across the globe. This methodology applies to the forest area within the Project Area as a single land parcel. It is addressed to ensure that all the requirements including description of the boundary, both digital geo references and physical descriptions are reiterated for each discrete land parcels for multiple occurrences of discrete land parcels within the Project area, if any.

The project crediting period and the monitoring and reporting period is addressed as appropriate.

a) Inclusion and exclusion of carbon pools within the boundary with respect to this methodology is summarized below:

- Above ground tree biomass (Included)
- Above ground non-tree biomass (Not included)
- Below ground biomass (Not included)
- Dead wood (Included)
- Litter (Not Included)
- Soil (Not included)
- Harvested Wood Products (Included)

b) Physical delineation

The boundary geographically delineates the IFM project activity under the control of the project proponent. Each discrete area of land has unique digital definition recorded and archived using

GPS incorporated in a GIS data base. The Forest Inventory Report or the sanctioned or approved document will contain the description of physical boundaries of the project area as per the legally sanctioned laws, regulations and codes of practice of the relevant national or sub national regulatory authority.

c) With respect to consideration of GHGs involved, carbon dioxide is included with significant presence in both sources and sinks. Methane and nitrous oxide gases are not included for soil fluxes since soil is not included as a carbon pool, but however is included for calculating emissions from fossil fuel in machinery, subject to significance.

11.2.1. Consideration of the validator regarding the project boundary

The project boundary defined in terms of gases, emission sources and physical delineation is appropriate and rational.

11.3 Determining the baseline scenario and demonstrating additionality

a) Methodological basis for determining the baseline scenario

The most plausible baseline scenario will be the one that includes the most likely scenario in result of the combination of the most likely baseline scenarios in the absence of the proposed IFM- LtPF project activity. The application of the methodology could result in a baseline scenario that reasonably represents emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity.

b) Demonstration of additionality with methodology application

This methodology employs the VCS approved latest available version of the tool (VT0001) for the demonstration and assessment of Additionality in VCS Agriculture Forestry and Other Land Use Project Activities". This methodology is limited to a baseline scenario of selective logging and for selection of the most plausible scenario a step-wise approach justifying the determination of the same is provided. The procedure to identify the baseline scenario using the necessary steps and sub steps is basically adapted from the additionality tool for A/R CDM project activities.

11.3.1. Consideration of the validator regarding the baseline scenario determination and additionality demonstration

The application of the methodology provides a generally rational way to determine the baseline scenario.

The basis for assessing additionality is appropriate and adequate.

11.4 Methodological basis for calculating baseline emissions and emission reductions

a) Baseline emission estimation in the methodology

Baseline emission is estimated from annual emissions resulting from the degradation of the project area as well as annual emissions from the selective logging operations.

b) Project emission estimation in the methodology

Project emission is associated with forest protection without selective logging. Emission associated with actual project implementation include administration and planning, (electricity and fuel consumption), travel for design and set up (consultation and education) (fuel consumption), travel for implementing monitoring plan (from on the ground and aerial surveillance), natural disturbances such as forest fires and illegal harvesting.

11.4.1. Considerations of the validator regarding the methodological basis for calculating baseline emissions and emission reductions.

The basis for estimating of baseline emissions and emission reductions is appropriate and adequate.

11.5 Leakage

.The leakage sources considered and addressed by this methodology are of two types. Carbon from degradation due to shifting of the baseline activity and emissions from the associated activities outside the project area is the first source. The second one is the carbon from market leakage due to shifts in supply and demand of the products and services. This refers to the supply and demand of timber and commercially harvested fuel wood which is the major forest products legally sanctioned for harvest and forms the major degradation drivers.

11.5.1 Considerations of the validator regarding the leakage treatment

The treatment of leakage is appropriate and adequate.

11.6 Key assumptions

Reliable and accurate data are available for the establishment of key factors within the baseline years.

It is recommended that project participants identify key parameters that would significantly influence the accuracy of estimates. Local values that are specific to the project circumstances should then be obtained for these key parameters whenever possible.

In choosing key parameters or making important assumptions based on information that is not specific to the project circumstances, such as in use of default data, project participants should select values that will lead to an accurate estimation of net GHG emissions, taking into account uncertainties. If uncertainty is significant, project participants should choose data such that it tends to underestimate, rather than overestimate, net avoided emissions.

11.6.1 Considerations of the validator regarding the key assumptions treatment

The treatment of key assumptions is appropriate and adequate.

11.7 Data and parameters NOT monitored

Key parameters and data used with source or default values and reference to equations applied.

The proposed methodology describes each parameter with the data unit in a table, with source of the parameter, review frequency or validation and application of the parameter with reference to the equation provided in the text.

Parameters from literature review/ report verification

Biomass conversion and expansion factor in stratum

Biomass conversion and expansion factor for converting volume of extracted round wood to total above ground biomass (including bark).

Carbon fraction of wood for the tropical forest

Carbon fraction in the above ground biomass of trees for the tropical forests

Wood density for the tropical forest with corresponding climate region and ecological zone

Species specific density of wood

Volume allometric equation as a function of diameter at breast height and height

Biomass allometric equation as a function of diameter at breast height and height

Rate of decay of the dead wood pool

Factor for residual stand damage

Branch trim factor

Lumber recovery factor

Rate of oxidation for long-term harvested wood products

Rate of oxidation for short-term harvested wood products

Average regrowth per hectare per year of the aboveground biomass after logging in year, t

Fuel emission factor

Fuel consumption of equipment employed for felling and snigging per m3 of merchantable log harvested

Fuel consumption of equipment employed for trimming per m3 of trimmed material

Fuel consumption of equipment for hauling one m3 of merchantable log

Truck load capacity

Fuel efficiency for vehicle type

Electricity demand for processing per volume processed

Emission factor for electricity in the host country

Total operating time of generator in year t

Fuel consumption per hour of operation of generator

Power rating for electrical equipment, ee, in year t

Flight emission factor for trip y

Emission ratio for CH4 and N2O

Ratio of nitrogen to carbon

Global warming potential of CH4 and N2O

Parameters measured, but not monitored

Project Area at time, t=0, collected using GPS data, GIS maps and satellite data, validated/verified before the project start date.

Project Area within each stratum, j, at time, t=0 collected using GPS data, GIS maps and satellite data, validated/verified before the project start date.

Total area of sample plots, s, in stratum, j, t=0 year field measurement ex ante from the sample plots, validated/verified before the project start date.

Diameter at breast height t=0 year, field measurement ex ante from the sample plots, validated/verified before the project start date.

Height for individual tree, t=0 year, field measurement ex ante from the sample plots, validated/verified before the project start date.

Annual net harvest area for the Project Area in year, t, ex ante obtained from the harvesting plan, validated/verified before the project start date.

Annual net harvest area at the stratum level in year, t ex ante obtained from the harvesting plan, validated/verified before the project start date.

Annual log transport distance from collection depot to processing plant collected from the digital maps, validated/verified before the project start date.

Annual distance of transport from point of processing to distribution/export point collected from the digital maps, validated/verified before the project start date.

Total volume of harvest for land l that is owned and/or operated by the Project Proponent over the historical reference period collected from the project proponent records, validated/verified before the project start date.

11.7.1 Considerations of the validator regarding the treatment of Data and parameters not monitored

Data and parameters not monitored are addressed appropriate and adequate.

11.8 Key data and parameters monitored

The list of parameters provided below is monitored during the project life time for updating the GHG emission reduction calculations.

Diameter at breast height for individual tree n, of species i, in sample plot s, of stratum j, in year t measuring using a DBH tape at intervals not exceeding five years after the first monitoring event

Diameter at breast height for individual tree n, of species i, in sample plot in the naturally disturbed area and, of stratum j, in year t measuring using a DBH tape at intervals not exceeding five years after the first monitoring event

Height for individual tree n, of species i, in sample plot s, of stratum j, in year t measuring using a tree height measurement equipment at intervals not exceeding five years after the first monitoring event

Height for individual tree n, of species i, in sample plot in the naturally disturbed area S_{nd}, of stratum i, in year t measuring using a tree height measurement equipment at intervals not exceeding five years after the first monitoring event

Hours of operation of electrical equipment ee, in year t, annually from electrical equipment time log book

Distance traveled per trip y, for a total of Y trips in year t, annually, from the flight travel log

Number of passengers per trip y in year t, annually, from the flight travel log

Distance traveled per trip y, for a total of Y trips in year t, annually, from the vehicle travel log

Annual volume of fuel consumed per trip y in year t, annually, from the vehicle travel log

Distance traveled per trip y, for a total of Y trips in year t, annually, from the flight travel log

Number of passengers per trip y in year t, annually, from the flight travel log

Distance traveled per trip y, for a total of Y trips in year t, annually, from the vehicle travel log

Distance traveled per trip y, for a total of Y trips in year t, annually, from the flight travel log

Number of passengers per trip y, in year t, annually, from the flight travel log

Distance traveled per trip y, for a total of Y trips in year t, annually, from the vehicle travel log

Area of natural disturbance nd, in stratum j in year t, annually from the imagery and field measurement

Fraction of the forest naturally damaged in stratum j, in year t, annually from field survey.

Volume of wood sold as determined from field surveys in year t, annually from field survey.

Area of illegal harvest in stratum j, in year t, annually, from satellite data

Annual actual volume of harvest for land l that is owned and/or operated by the Project Proponent in year t, annually from the Project Proponent records

The data sources and measurement procedures are proposed in the tables with data for parameters monitored. They are adequate, consistent, accurate and reliable.

The monitoring frequency for the data and parameters are chosen appropriate and do not require additional changes.

The proposed baseline and monitoring methodologies should require data on the monitored data and parameters during crediting period. These data are directly used in the calculations, and will be critical in providing that the calculations are consistent across the project years and crediting periods.

11.8.1 Considerations of the validator regarding the treatment of data and parameters for monitored data

Data and parameters monitored are addressed appropriate and adequate.

11.9 Assessment of uncertainties

Parameters derived from sources like IPCC (2006) default data and guidelines, statistical sampling, and expert judgment with justification, associated with sample data such as height and diameter measurements from permanent sample plots, biomass growth and rates of decay, activity data, emission factors and other coefficients may typically have uncertainties. This Methodology employs the best practice which requires the use of a 95 percent confidence interval for quantification of random errors as per IPCC (2006). Overall uncertainty for the IFM LtPF project is estimated by deducing error propagation. Equations are provided for estimating the total uncertainty related to the baseline scenario, actual project activity and leakage emissions.

11.9.1. Considerations of the validator regarding the assessment of uncertainties

The sources and the treatment of uncertainties listed by the methodology are appropriate and adequate.

11.10 Transparency, conservativeness and consistency

The baseline methodology is presented in a generally adequate and transparent manner; after some minor changes improvements were made. Whether the methodology is conservative or not will depend on the integrity of the data used and monitoring of reliable performance data.

11.10.1. Considerations of the validator regarding the transparency, conservativeness and consistency of the methodology

a) Transparency

The proposed baseline methodology is presented in a generally adequate and transparent manner

b) Conservativeness:

Whether the methodology is conservative or not will depend on the integrity of the data used for determination of baseline emissions factors and monitoring of reliable performance data.

c) Consistency:

The new baseline and monitoring methodology is internally consistent.

In general terms the proposed methodology is technical transparent, the technical approaches are conservative and the methodology as a whole is consistent.

The validator considers that the new baseline and monitoring methodology is internally consistent.

11.11 Monitoring

The proposed new methodology proposes methods for monitoring the following elements:

- Monitoring Plan
- Procedure for establishing the Permanent Sample Plots and measurement
- Procedures for stratification, and determination of shape, size and number of the plots
- Sampling design and parameters to be measured in the Permanent Sample Plots
- Monitoring Frequency
- Monitoring implementation
- Parameters monitored during the project life time, those measured once and those obtained from the literature/reports which are not monitored are provided in three different tables

- Steps involved in validating or deriving the parameters like wood density, volume and biomass allometric equations and the branch trim factor
- Buffer determination and buffer cancellation
- QA and QC with Standard Operating Procedures for Conducting field measurement, Selecting literature values, Data entry, maintenance and archiving and Contract procurement

11.11.1. Considerations of the validator regarding the monitoring methodology

The monitoring is addressed appropriate and adequate.

11.12 Adherence to the project-level principles of the VCS Program

The proposed methodology adheres to the project level principles of the VCS Program.

11.12.1 Validator considerations regarding the Adherence to the project-level principles of the VCS Program

In general terms the proposed methodology meets the VCS requirements stated in the VCS 2007.1 (clause 6.1 to 6.4.4), as well as the VCS Tool for AFOLU Methodological Issues and VCS Guidance for Agriculture, Forestry and Other Land Use Projects.

11.13 Public comments consideration

Public comments were taken due account by the project proponent in the subsequent version of the methodology. The project proponent has adequately responded to all the queries incorporating corrections, modifications and suggestions. Responses to the comments are assessed to be adequate and appropriate. During the first validation process, the auditor has reviewed the actions taken by the developer and is assessed as adequate. As a part of the double approval process the second validator has also reviewed the project proponent's response to the public comments and also in line with the changes made as a part of the second assessment and is assessed to be adequate and appropriate. For more information on the list of comments and how the comments were considered by the project proponent and approved by the first validator which has also been approved by the second validator, please refer to annex B.

11.14 Any other comments

The following CDM methodological tools have been used for evaluation of the proposed methodology:

“Estimation of direct nitrous oxide emission from nitrogen fertilization”

“Tool for testing significance of GHG emissions in A/R CDM project activities”

“Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities”

The following methodologies have been used as base for the elaboration of the proposed methodology.

- Approved afforestation and reforestation baseline methodology, (CDM) AR-AM0005/Version 4, Afforestation and reforestation project activities implemented for industrial and/or commercial uses.
- Approved VCS Methodology VM0003 Version 1.0, Methodology for Improved Forest Management through extension of rotation Age.

12 FINAL ASSESSMENT OF THE METHODOLOGY CONSIDERING THE LAST ADJUSTMENTS REQUIRED BY THE FIRST VALIDATOR

Version 3.1.2 of methodology document with title “IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)” contains the changes incorporated during the second assessment process. This version was submitted to the appraisal of the first validator (Rainforest Alliance). The first validator assessed the changes made by the second validator and concluded that the methodology was still in conformance with the standard. Version 3.1.2 of the methodology document is thus approved by both validator (Rainforest Alliance and Bureau Veritas Certification).

13 FINAL RECOMMENDATION FOR THE PROPOSED NEW VCS BASELINE AND MONITORING METHODOLOGY

The assessed and evaluated methodology with the title “IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)”, Version 3.1.2 meets the requirement of the Voluntary Carbon Standard (VCS, 2007.1, 2008).

The evaluated methodology is consistent with its objectives and meets the requirements of VCS Program which includes the Voluntary Carbon Standard (VCS, 2007.1, 2008) and the Program Guidelines.

First validation assessment carried out by Rainforest Alliance assessed the methodology using a process and evaluated for conformance. The appropriateness and adequacy of each section pertaining to the key aspects were critically evaluated. The Project Proponent has responded to these issues appropriately and adequately. The process has considerably revised and improved the draft to conform to the Standard.

The assessment team therefore recommends the methodology to be approved under the Voluntary Carbon Standard (VCS 2007.1, 2008).

14 CURRICULA VITAE OF THE ASSESSMENT TEAM MEMBERS

Mr. Flavio Gomes is a Chemical and Safety Engineer graduated from «UNICAMP – Universidade Estadual de Campinas», with a MSc title in Civil Engineer (Sanitation). He spent four years at RIPASA Pulp and Paper as Environmental Process Engineer. He is, since 2006 the Global Manager for Climate Change in Bureau Veritas Certification. Previously and since 1997, he was senior consultant for Bureau Veritas Consulting in fields of Environment, Health, Safety, Social Accountability and Sustainability audit and management systems. He also acted as Clean Development Mechanism verifier, and Social/Environmental Report auditor, in the name of Bureau Veritas Certification. Flavio is pursuing his PhD on Energy Management at the Imperial College – London.

Dr. Anil Panolil Chirikandoth has eighteen years of experience in the field of Forestry research and action. He holds a PhD in Forest Ecology and Management, a Master of Science in Ecology and a Bachelor's in Botany. Dr. Anil has experience in the field of Forest Carbon Offsets both in the regulatory and voluntary front, including project validation, development and methodology assessment. .

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ANNEX A

Table 1 List of Corrective Action Requests (CARs) and Clarifications (CLs)

- **IFM-LtPF Methodology: Estimating Green Gas Emission Reductions from Planned Degradation (Improved Forest Management)**
- **Date: 17/11/2010**
- **Person in Charge: Dr. P.C Anil**

Corrective Action Requests	Reference	Summary of project owner response	Validation team conclusion
CAR 01 The geographic boundary requires spatial definition with geo digital information for facilitating easy and effective validation and verification processes. The information/ documentation should differentiate the area for implementation for the VCS-AFOLU-IFM project area and the larger or the entire project area which includes the project area as well as the leakage area.	Page 15 of the methodology document	Section 2.2.1.1 of this Methodology has specifically stated the requirement of information and geo-reference as well as the GIS or spatial maps as suggested in the VCS Guidance for AFOLU Projects (2008) in order to differentiate the project area from the rest of the area including leakage area. However, Carbon Planet acknowledges this comment and hence, has added the following sentence in Section 2.2.1.1 of the Methodology: "The digital or GIS maps of the Project Area will explicitly distinguish the Project Area from the non-project area including leakage areas." Second Round CP has revised the sentence, which explicitly includes requirement for the geo digital maps of the geographic boundary distinguishing the Project Area and the Leakage Area.	Section 2.2.1.1 pertains to project area and the requirements stated in the text adhere only to the project area. Requirement of information provided for project area should also be explicitly stated and collected for the geographic boundary. Validator appreciates the acknowledgement and inclusion of the requirement but would request to add the term geographic boundary explicitly distinguishing the project area and the leakage area eliminating the term "non-project area". The geo digital definitions need to be provided for the geographic boundary in addition to the project

			area. **OK** **CAR 01 is closed.**
CAR 02 The methodology should equip to employ the approved available latest version of VCS Tool VT0001 "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture Forestry and Other Land Use Project Activities".	Section 2.1.3; Page 14 of the methodology document	Carbon Planet acknowledges this comment and has addressed this issue in Footnote 3 (see p 14) of the Methodology.	**OK.** **CAR 02 is closed**
CAR 03 It is assumed or believed that the proposed project activity is not implemented on peat land/soil (within the project boundaries) and hence the emission reduction or GHG removals associated with the peat layer is deemed insignificant based on the		Carbon Planet acknowledges this comment and has added "except peat swamp forests" in the applicability criteria under "Type of Forest" in Table 1-1 of the Methodology.	**OK.** **CAR 03 is closed**

de minimis rule of 5%. An applicability condition which could be added would enable exclusion of project activities implemented on peat lands.			
CL 01 The non-tree component of the above ground biomass is not included as eligible carbon pool in this methodology. Even though VCS considers this component as insignificant, this is based on an assumption that this pool is insignificant for IFM project cases. This condition might satisfy with the herbaceous vines and climbers but not with the woody climbers or lianas. Studies from tropical forests reveals that up to 40 percent of the volume of the above ground stock exist in the woody climbers/lianas in a typically disturbed forested environment. Technically woody lianas cannot be included under		Yes, we agree that some studies presented significant volume of woody climbers (that are non-tree) in tropical forests. However, the baseline activity under this Methodology does not account for carbon stocks in the non-tree above ground biomass components of the forest. The reasons are as follows: 1) The VCS Tool for AFOLU Methodological Issues (2010, p. 5) and VCS Program Update (2010 May 24, p. 4) do not warrant explicitly non-tree above ground biomass to be accounted. 2) It is conservative, not to account for the non-tree biomass. Conversely, the net GHG emissions reductions would be higher if the non-tree above ground biomass were included as a carbon pool. Hence, by not accounting for the non-tree above ground biomass, this Methodology conforms to the VCS guidelines as well as provides a conservative estimate of the net GHG emissions reductions from the LtPF project.	We strictly agree on the conservative aspect. You also have reported on the low probability of encountering woody biomass of non tree components in relation to your project situation. With respect to universality, in regard to the application of this methodology, if the pool is considered as "optional" what would be the implication is needed to be discussed here. Second round Awaiting clarification from VCS. Third round Response from VCS was awaited on this issue till the 20th of December, 2010 and with no clarification it was decided to move

the tree component and is a non tree component. Hence how can a project situation/case utilize this methodology while encountering such non tree components?			further with the following assumption. Definition for non tree components is now added in response to CL 03. It is assumed that the project situation will not encounter with these listed non tree components with significant above ground biomass volumes. Pool is not measured because it is not subject to significant changes or potential changes are transient in nature. **CL 01 is closed**

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CAR 04 Leakage is not addressed for commercially harvested fuel wood which is described as a forest product type and a driver of degradation.		CP acknowledges this comment and has addressed this issue in Section 5.1, 5.2 and 5.2.1 by explicitly stating "commercially harvested fuel wood" as a source of leakage.	**OK** **CAR 04 is closed**
CAR 05 Facilitation of a wider range of application of this methodology could be enabled if the list of applicability criteria includes forest plantation as a type of forest. Forest type can be an additional criterion in the list included as merchantable. This will address regions where logging/felling is restricted to only plantations where no interventions are allowed in the natural forests. In these regions, merchantable refers to only timber from plantations and not from any other forest types (natural forests).	Section 1.1 of Page 6	Yes, CP agrees with your view. However, this issue has been extensively discussed at the early stage of this methodology development and CP has taken decision to restrict the scope of this methodology as specified in the Table 1-1.	**OK** **CAR 05 is closed**
CAR 06	Section 1.1 of Page 7	CP acknowledges this comment and has addressed this issue in Table 1.1 (page 7) as well as in Section 2.2.1.1.	**OK** **CAR 06 is closed**

If the project proponent uses this methodology for multiple discrete land parcels, each land parcel should have separate well described physical boundaries as per VCS guidelines.		by reiterating the VCS requirement for each land parcel.	
CAR 07 Calculation of emission from non CO_2 gases of the pools for testing significance due to natural disturbances requires elaboration in terms of method and tools employed. For instance, incidence of forest fire which is of less magnitude/intensity spread to a small to large area may remain undetected in a satellite imagery/remote sensed application up to medium resolutions. This applies to incidences resulting from other types of natural disturbances, as well.		Three dot points in Section 4.4 of this methodology provide methods to be employed for the monitoring of the natural disturbances in the Project Area. CP assumes that the Project Proponent shall have a plan for aerial and ground surveillance in place in order to effectively mitigate the non-permanence risk especially due to fire. Further to clarification of this CAR by BV, CP has addressed this issue by incorporating the following points: 1) Suggested employing the best available satellite data in the second dot point in Section 4.4. (Since the Remote Sensing technology is advancing everyday, it is up to the VCS PD verifier to assess the quality of the data used). 2) Added "aerial surveillance and ground patrolling" to monitor the Project Area for natural disturbances followed by the field checking to verify the extent and areas of damage in	With the incorporated changes **CAR 07 is closed.**

		the third dot point in Section 4.4. 3) Replaced Skole et al., 1998 by a latest and relevant reference to Fagan and DeFries, 2009 with title "Measurement and Monitoring of the World's Forests". This Methodology provides the data source and measurement frequency for each of the parameter applied in Tables 7-1, 7-2 and 7-3. Regarding the parameters for emissions due to aerial surveillance and ground patrolling, these are annually monitored using flight travel log and vehicle travel log, respectively (Refer to Table 7-3 on Page 96). CP has added the following sentence in Section 4: "The Project Proponent shall keep detail and accurate records of the emissions associated with the project activities including the monitoring of the Project Area for natural disturbances. Such records and data must be submitted along with the monitoring report to the Verifier." The data archiving and QA/QC have been discussed in Sections 7.1.1 and 7.3, respectively.	

		It is just noticed that the parameter symbols for annual emissions due to ground travels and air travel are not the same in Equation 4-14 and the Table 7-3. The symbols Equ 4-14, $E_{monitoring\_ground,t}$ and $E_{monitoring\_flight,t}$ have been changed to $KM_{monitoring\_ground,t}$ and $KM_{monitoring\_flight,t}$, respectively.	
CAR 08 Emissions related to forest patrolling and allied activities carried out as part of forest protection and surveillance needs to be addressed in project situation..		Section 4.3 of this Methodology estimates the emissions from Project monitoring involving both ground and aerial surveillance. However, the terms "aerial surveillance and ground patrolling" were not explicit in the Methodology. Hence, CP addresses this CAR by including the emission associated with aerial surveillance and ground patrolling in Section 4.3.	**OK** **CAR 08 is closed.**
CL 02 How illegal harvesting can be differentiated using the tools employed?		Under the project scenario, the Project Proponent shall stop harvesting operation, which would have occurred under the baseline scenario (Refer to the applicability criteria in Table 1-1). Hence after implementation of the Project, all harvesting in the Project Area is considered illegal and identified by using the procedures given in Sections 4.5.1 and 4.5.2 of this	It is now made clear that the illegal logging exclusively refers to the sanctioned logging activity by the project proponent.

		Methodology.	**CL 02 is closed**
CL 03 Define non-tree with relevance to your project situation		CP includes a definition of non-tree as follows in Appendix A.1: For the purpose of this Methodology, non-tree has been broadly defined as all the vegetation except the trees with the minimum DBH as specified by the relevant authority in the host country (see footnote ## on page 18). It comprises of ground vegetation (seedlings, saplings, herbs and shrubs), hanging veins and lianas and also woody climbers. (Emailed on 29 Nov. 2010)	**OK** **CL 03 is closed**
CAR 09 Project owner's response to CL 02 could be incorporated into section 4.5 of the methodology document to explain		Perhaps there is misunderstanding of the definition of the "illegal harvesting". All harvesting or logging activity in the Project Area is illegal regardless of the types of agent of deforestation involved, whether the Project Proponent or other stakeholders.	CAR 09 is issued to incorporate the given information which would avoid the confusion of the project proponents and the readers using this methodology.

illegal harvesting for more clarity. It should also be mentioned in this section that this activity is legally sanctioned in accordance with the relevant laws, regulations and codes of practice of the country in which the methodology is being applied. (This is to explicitly state that where project situations exist with illegal logging by stake holders other than the project proponents (unsanctioned) is not eligible for crediting under the IFM category)		The suggestion to exclude the illegal harvesting by other than the Project Proponent shall increase the net GHG benefit (VCUs). This Methodology has treated illegal harvesting as a likely event after the implementation of IFM Project (i.e. the project scenario) and has subtracted the emissions associated with this activity in order to obtain the net GHG benefit. Hence in the case of illegal harvesting by other stakeholders, the exclusion of this activity from GHG accounting will increase the net GHG benefit and CP believes that such exclusion may contradict with the VCS's principle of conservativeness. This term "illegal harvesting" has the same meaning as the term "illegal logging" for IMF project as used by the VCS in the Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination (2008). **Second Response** As suggested by the Validator, the response to CL2 will be incorporated in Section 4.5 of the Methodology.	The validators have not suggested excluding the illegal harvesting by other than the project participant and also anticipate illegal harvesting as a likely event after the project implementation. The supplementary information provided as requested will distinct illegal harvesting within the scope and context of IFM project category. The scale is such that the activity causes degradation but remains as forest and not conversion to non forest. The portion at the end of the text of CAR 09 given in parenthesis is just for explanation and not for incorporation into the methodology text. **OK. CAR 09 is closed.**

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CAR 10 Field inventory method explains field teams will collect data on the quantity of wood illegally harvested from the project area through observation or interviews. The data collection method needs to be elaborated.	Section 4.5.1 page 72	Step 1 in Section 4.5.1 suggests to use field survey to estimate the volume of wood illegally harvested. CP has revised this Step to address the CAR 10 as follows: "Quantify the total volume of wood illegally harvested in the Project Area through field survey by measuring the stump diameter and developing species specific model to predict tree volumes based on the relevant peer reviewed literature (e.g. Corral-Rivas et al., 2007) Reference: *Corral-Rivas, J. J. Barrio-Anta, M. Aguirre-Calderon, O. and Dieguez-Aranda, U. (2007) Use of stump diameter to estimate diameter at breast height and tree volume for major pine species in El Salto, Durango (Mexico), Forestry, 80(1), Page 29-40* **Second response** As suggested by the Validator, CP will incorporate PRA tools for field observation and interview and refers to a book by Surhone et al (2010) in Section 4.5.1. *Surhone, L. M., Timpledon, M. T. and Marseken, S. (2010) Participatory Rural Appraisal, Verlag Dr Mueller AG*	The revised step/new incorporation is welcome and appreciated. In addition, if the observations or interviews, as mentioned in the methodology, are conceptualized using PRA tools, then prone areas or hot spots in relation to relatively higher probability of incidence of illegal harvest and/or intensity, if any exists, could be identified. Information on the causal agents continuously monitored over a time period would prove helpful during the validation and verification events, especially for assessing the non permanence risk factors. **CAR 10 is closed.**

		& CO. Page 96	
CAR 11 Step 1 of procedures of Tool for AFOLU methodological issues (land eligibility) to be addressed	Page 4 of Tool for AFOLU methodological issues	This Methodology does not have a dedicated section on the land eligibility. However, it has been clearly stated in the introduction Section 1 of this Methodology that it applies to the land, which would be degraded through selective logging under the baseline scenario. The applicability criteria Table 1.1 in Section 1.1, has described the "Project Area" as "must be designated, sanctioned or approved by the relevant authority in the host country for the selective logging (VCS 2008c; p.11)". Section 2.2.1.1 also reiterates the land eligibility requirement for the Project Area. A separate heading for land eligibility was in the document before, however; the section was removed later to avoid redundancy. Since this Methodology applies to specific land condition i.e. sanctioned selective logging operation, a separate section for the land eligibility was found unnecessary as in the VCSA approved methodology VM0004. If the Validator is not happy with the justification above, CP will address this CAR by changing the section heading of 2.2.1 .1 to Project Area and Land Eligibility and adding the following sentence in Section 2.2.1, based on	Information pertaining to each section has to be clearly provided with proper heading. As per the response of the Developer regarding the incorporation of a section heading explaining Land Eligibility, **CAR 11 is closed.**

		the same approach as used in the VCSA approved methodology VM0003: "The land eligibility for the Project Area is discussed in Section 2.2.1.1."	
CAR 12 With reference to the historical reference period, for cases where history of harvesting operations is less than five years, then the actual number of operational years that the project proponent has been operating, prior to the start of the IFM-LtPF project activity, must be used as the historical reference period in order to analyze leakage due to implementation of the project. If the historical reference period for a project situation has only less than a year of operation then it would not be able to generate any data for equations 5-3 to 5-7. A minimum five year time frame for a historical reference period can be made mandatory which	Section 2.2.2.3 Page 17 and Section 5.2.1 of Page 75	The statements in this CAR 12 are contradicting themself. The Validator has assumed the Project Proponent has less than one year of operation in the third paragraph and stated that equation 5-3 to 5-7 would not get input data. **In the case of less than one year operation,** **V(historical_harvest, I, t=0) would be zero and could be applied to equations 5-3 to 5-7.** In the last paragraph the Validator has suggested for mandatory reference period of five year. If the Validator's assumption is considered true as made in the third paragraph, how could the PP gets data for five years reference period? CP supports the idea of using five year mandatory reference period is a good one, however; it does not deal with the situation where the PP is operating for lesser than five years. Hence it is not practical. CP believes that suggestion to use the	If the Project Proponent has not carried out any logging operations before the start of the project activity, Project Proponent's annual actual volume of harvest after the project start date, anywhere else outside the project area, has to be compared to check if it exceeds the common practice volume to assess intensification. **Response to the second round** The objective of the raised CAR 12 is to assess on the credibility and transparency of the method employed to assess the intensification of logging. It is well understood beyond doubt that section 5.2.2 deals with shifted harvesting to a new project area or

then could limit uncertainty, address leakage, natural disturbances, illegal harvesting and factors influencing non permanence, effectively.		actual number of years as the reference period in case where the PP is operating lesser than five years is practical and objective. Second response: In the case where the Project Proponent starts harvesting in **anywhere outside the project area after the project start date** is considered as leakage due to shifted logging operations and the procedure for accounting this type of leakage is presented in Section 5.2.2. Third response: Section 5.2.2 presents the emission accounting in the case of "shifted logging operations" which has been defined as the logging operation in the new land owned and/or managed by the PP after the project start date. Since the PP must ensure that there is no leakage from other land owned and/or managed by the PP, all emissions associated with the harvesting in the new land after the project start is considered leakage and is given by Equation 5-9. The volume of harvest does not need to be compared with the common practice volume as suggested by the Validator. To avoid the ambiguity associated with the "**common practice volumes**" in	commencement of harvesting operation in any new land logged by the Project Participant (PP) during the crediting period. If there is a project situation where the PP has no history of harvest or for section (5.2.2) if the Volume of actual harvest in the new area by the PP is higher than the common practice volume how can some one assess as there is no historical operation reference. As per methodology intensification is assessed based on a historical reference period for comparing a common practice volume. In the case where harvesting operations have been conducted for less than five years by the PP, instead of the use of the actual number of years for which the harvesting has been operated, there could be

		Section 5.2.1, it will be revised and reads as **"…., exceeds the average volume of harvest during the historical reference period."** However, intensification of logging is another scenario discussed in Section 5.2.1 which requires comparing the volume of harvest before and after the project start date. This Methodology has defined the intensification of logging operation as the **increase in the volume of harvest in other owned and/or operated lands to recover the harvesting loss due to the IFM-LtPF project** (refer point (ii) in Section 5.2). For example: Let's support a PP started IFM-LtPF project in year 2010 and had a concession area where the PP harvested 4000, 4500 and 3500 cum in years 2008, 2009 and 2010, respectively. The average volume of harvest in three years is 4000 cum. In year 2011, if the PP harvests 4500 cum there will be an intensification of logging by 500 cum. It compares the PP's harvesting rates before and after the start of the IFM-LtPF project in the same land and determines the leakage due to intensification of logging after the project start date. If the Validator's suggestion to use common practice volume to Section	a national, regional or a local estimate for the common practice volume which can be opted as a reference, a conservative estimate which is evidenced within the existing national concessions/ sanctions which could be compared and used. **Response to the third round.** There is no ambiguity associated with the "Common practice volume" and there is no need for the revision in section 5.2.1. Common practice volume is only referred to situation when there is no historical harvest or historical reference period for the PP. The methodology already has the provision to account for intensification, if the PP has a long historical

		5.2.1 not 5.2.2, CP considered about suggesting the common practice volume to be used to determine the intensification of logging during the initial draft of this section. However, the idea was abandoned due to the following reasons: 1) The common practice volume does not reflect the baseline volume of harvest for the land operated by the PP and is not appropriate to determine the intensification of logging. 2) The harvest volume data from the forest with the same species composition, age, conditions and the same management prescription could be comparable in the case where harvesting operation has not been commenced in the land operated by the PP before the project start date. (We do not need to compare these data as any new land logged by the PP after the project start date is considered as shifting logging and is accounted in Section 5.2.2) 3) The harvest data from the forest with the same attributes and under the management regime is not likely to be available. Since the logging intensification has	reference period. For the purpose of comparing the actual harvest outside the project area after the start date of the project for the PP with no historical harvest, the common practice volume could be referred to. The actual volume of harvest in the shifted logging operation to a new forest area by the PP needs to be compared and assessed for intensification which could be the result of the new LtPF Project activity. This methodology also applies to intact forest with no history of logging but with a legal sanction for logging and hence reference to a common practice volume has relevance. The PP can justify and convince the validators on the credibility and transparency of the data used for deriving the estimates. The reason provided for not addressing intensification in the

		been defined as the increase in harvesting in the same land operated by the PP, the baseline data for comparing must be used from the same land to assess whether there is actual increase in the volume harvested or not. The historical reference period of five years was suggested to use the most recent harvesting volume in the case where the PP is operating for more than five years. If the validator is not satisfied with the above explanation and still considers the common practice volume must be used to determine the intensification of logging, CP will reluctantly revise the Section 5.2.1 to incorporate the common practice volume to be used for determining the leakage due to intensification of logging, where the harvesting is less than five years and also Section 2.2.2.3. Fourth Response: CP acknowledges the Validator's clarification in the recent response and has revised Section 5.2.1 by including the following sentence (as stated in response to the third round by the Validator):	initial draft is not convincing and justifiable. 1) If there is a baseline volume of harvest for the land operated by the PP then there is no need to refer to a common practice volume. 2) If there is a harvest volume data from the forest with comparable situations and conditions this could be used for comparing the intensity of the new logged areas by the PP after the project start date. (To account for the increased intensity (if any) than the commonly practiced volumes, (local, regional or

		"If there is a harvest volume data from the forest with comparable situations and conditions this could be used for comparing the intensity of the new logged areas by the PP after the project start date. (To account for the increased intensity (if any) than the commonly practiced volumes, (local, regional or national, a conservative estimate) in the newly logged areas after the project start date by the PP." CP has also added in the Section, "The Project Proponent shall provide the data source and collection method for the common harvest volume from the forest comparable situations and conditions to the Verifier along with the monitoring report for verification." The last sentence of Sections 2.2.2.3 Historical reference period has been deleted to accommodate this amendment.	national, a conservative estimate) in the newly logged areas after the project start date by the PP. 3) The statement provided in point 3 seems to contradict with the statement provided in point 2. Monitoring and assessment of intensification of logging has lot of importance and scope at the project level as more LtPF projects if arise, within in the same country, can be effectively assessed for intensification with reference to the past and present management plans with respect to the significant

			shortages in supply. **Response to the fourth round** Methodology is now equipped with provision for the users to demonstrate intensification of logging as evidenced by the management plans and change in land use designations (if any) after the project start date, during the crediting period. Incorporation of provision for facilitating verification of the collected information, its source and justification is highly appreciated and welcome.

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			CAR 12 is closed.
CAR 13 Demonstration with documentation is required for other owned lands for addressing leakage assessment and management. "At each verification, documentation must be provided covering the other owned lands where leakage could occur, including, at a minimum, their location (s), existing land use (s), and management plans". Locations evidenced with physical maps and digital geo definitions to be incorporated.	Page 26 of VCS Guidance for AFOLU Projects. I paragraph, line 6.	The last paragraph in Section 5.2 has been revised and reads as "The Project Proponent must provide documentation for the potential leakage areas due to activity shifting (i.e. other lands owned or operated by the Project Proponent) including geo-referenced or digital maps illustrating the physical location(s) and their boundaries, existing land uses and management plans at each verification period (VCS, 2008c; p.26)."	**OK** **CAR 13 is closed.**

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ANNEX B

Table 2. List of public comments submitted to the VCS during the public comments period for the "IFM-LtPF Methodology Estimating Greenhouse Gas Emission Reductions from Planned Degradation (Improved Forest Management)"

Public Comments submitted by

- **D.K. Johnson, Independent Analyst, US**
- **Abhirup Sen, EVI, India**
- **J.A.R Correa, MGM International, Columbia**
- **G. Thoumi, MGM International, US**

Public Comments	Response from Carbon Planet	Response from Rain Forest Alliance	Response from Bureau Veritas Certification
Comments from D.K Johnson			
Given the grandeur of the Brazilian Legal Amazon its issues should be more closely serve to create templates related to forestry methodology. The creation of revenues ready to be reverted to indigenous peoples, for example, must contain more caveats delineating types of indigenous groups and their interaction with currency. Certain indigenous peoples of the Brazilian legal Amazon, for instance, would further benefit from barter or other initiatives in the socio- educational arena. Currency, in many scenarios, can lead to political manipulation and/or other types of negative socio-cultural scenarios.	Carbon Planet deems this as an informative comment, perhaps more applicable to a Project Description Document instead of our IFM methodology. Issues relating to revenue reversion, initiatives in the socio educational arena and currency are not issues that are specified by the VCS to be addressed in methodology development	Response adequate	Response adequate
The creation of mandatory social indicators used as inputs to methodology application able to tackle the livelihood of low-income surrounding communities outside or within the project's boundaries. It is the case that the Brazilian legal	Carbon Planet considers this comment to be clearly applicable to a Project Description Document rather an IFM Methodology. The issues raised relate to creating mandatory social indicators to tackle revenue distribution and is not an issue specified by VCS to be	Response adequate	Response adequate

Amazon is populated with acculturate indigenous people, the "rebeirinhos", who lost their traditional culture to modernization and now remain marginal to society at large. Reverting revenues/ opportunities to these locals is also key to the long- term sustainability of the project	addressed in methodology document.		
The creation of mandatory input indicators dealing with details surrounding land titling. It is often the case in the Brazilian legal Amazon where land titles are chaotic and/or forged	It is well known by the expert community that issues relating to land titling are addressed in a Project Description Document and not in the methodology development. Carbon Planet deems this comment as not relevant to our IFM methodology	Response adequate	Response adequate
Comments from Abhirup Sen			
In Section 4. Actual Project Activity Emissions, the emissions from activities listed in sub section 4.1 to 4.3, it will be very difficult to estimate the emissions ex-ante and the estimated data interpretation will be very subjective in nature. Hence either these emissions should be based on actual data as far as possible or else this category of emissions should be neglected if it is within a certain percentage of total emissions from the project.	Subsections 4.1 through 4.3 relate to "Actual Project Activity Emissions". Carbon Planet agrees that it is difficult to estimate the emissions ex-ante. However in the interests of a holistic IFM methodology and from a conservativeness point of view, we have provided a methodology to account for actual project activity emissions. To omit this section simply because "data interpretation will be very subjective in nature" is not justifiable. Carbon Planet therefore retains the section on "Actual Project Activity Emissions" in our IFM methodology. Carbon Planet however agrees that upon application of the methodology, if emissions from actual project activity have been determined to be immaterial (see revised material section 1.3.2), then this category of emissions should be neglected if it is within a certain percentage of total emissions from the project". We have hence inserted a statement on materiality at the	Instructions to monitor actual project related emissions in place. Hence actual data will be used in emission calculations.	Verified

	commencement of this section that reads: Omission of any of the above emission sources must follow the materiality guidelines in section 1.3.2. See also CAR 13/09 on materiality relating to project emissions		
In the project applicability conditions, drivers of deforestation other than commercial logging/ harvesting activities have been neglected or omitted. But such omission of domestic/household activities should not be done as it may not be appropriate in all cases. The applicability condition should state that commercial logging/harvesting the major driver as it may not always be the only driver in the project area.	Carbon Planet's IFM methodology focuses on legally sanctioned selective logging and therefore the "driver of deforestation" (sic, degradation) is commercial logging. Domestic/household activities are deemed to occur whether or not a carbon project has been implemented and therefore is not regarded as a driver of degradation. For clarity, the "Drivers of Degradation" in Table 1-1 has been modified to indicate, "where applicable, fuel wood harvesting for commercial purposes". Second round: As discussed in CAR 02/09, the exclusion area denoted as A_{ipalu} is now denoted as $A_{community.}$ The revised methodology defines in section 2.2.1.2 Project Area an exclusion area set aside for the community residing in the Project Boundary, $A_{community.}$ This definition also states that the exclusion area includes the land required for settlements and villages, practices such as domestic (subsistence) agriculture and gardening, fuelwood gathering for domestic use, and land set aside for cultural uses such as ceremonial or sacred sites. It is also specified in Section 2.4, Table 2.5, that fuelwood gathered for domestic use is not considered as an emission source.	Rainforest Alliance accepts that this likely to be true, however, the methodology inadequately explains which activities are allowed to carry on (but not measured) within the project activity and which must be confined to Aipalu (equation 2-2). Please see the findings related to CAR 02/09 earlier in this report. Response to the second round: The methodology now adequately addresses the comment by A Sen has now been addressed. The methodology is clearer for areas where commercial harvesting is the only driver of degradation, areas where smaller scale community biomass extraction occurs will be excluded from the project area. It is not the intention of this methodology to be able to quantify small scale extraction. Based on the response, the CAR is	Changes made and the response is adequate.

		closed.	
Comments from J. A. R. Correa			
According to the published document, the methodology is only applicable for Tropical rainforest, Insular Asia. It is considered that methodology should have a comprehensive approach enabling its use by other projects in different places, obviously under the applicability conditions. I consider that the methodology could be applied for several locations around the world, where forests were degraded due to logging, either by legal logging or commercial fuel wood harvesting. I ask you to consider expanding the geographic range of the methodology, so that it applies to all types of forest or explain which, are the specific reasons to limit the projects to Tropical Rainforests, Insular Asia.	Carbon Planet agrees that our IFM methodology is applicable to cover tropical rainforests in the wider geographical range. Consequently, the term “Insular Asia” has been removed throughout our IFM methodology.	Response acceptable	Response acceptable
Comments from G. Thoumi			
Page 12: Project boundaries must also include legal	Carbon Planet has defined the project boundary in accordance	Response adequate	Response

boundaries	with the VCS guidelines (see VCS Tool for AFOLU methodological issues p4, Step 2). The VCS guidelines do not include legal boundaries in methodological issues. Furthermore it is well known that legal boundaries are covered in Project Description Document since these legal issues are specific to individual project areas. Consequently, Carbon Planet deems this comment as not relevant to our IFM Methodology.		adequate
Page 14: Monitoring period should be no more than 5 years so as applicable under general internationally recognized best practices.	Carbon Planet agrees that the under internationally recognized practices, the monitoring period should be no more than 5 years. Consequently, section 2.2.4 has been modified to: "The minimum duration of a monitoring period is one year and the maximum duration is five years, according to international industry practices."	Response adequate	Response adequate
Page 15: Eight carbon pools mentioned, inconsistent with rest of document	In the document reviewed by G Thoumi, "Below Ground Biomass "was mentioned twice, which led to the inconsistency. In this revised methodology, we have deleted the duplicate "Below Ground Biomass". Furthermore, Table 2.1 has been revised to be more comprehensive, indicating VCS' recommendation for consideration and the consideration status for our IFM Methodology.	Fixed By CP	Verified.
Page 30: Figure 3.1 An outline of timber harvest operation s and the associated emission source is illegible. Please reimage	Figure 3.1 is now presented in high resolution for legibility	Figure has been improved in the updated version	Verified.
Page 33: In snigging operations, there is a substantial opportunity for belowground root damage of extent undamaged trees caused	Below ground biomass is not accounted for in our IFM methodology	Not necessary to account for this damage. Exclusion is	OK

by soil compression due to machinery. How is this accounted for in the methodology?		conservative	