ASSESSMENT REPORT

METHODOLOGY FOR "IMPROVED FOREST MANAGEMENT THROUGH CONVERSION OF LOGGED TO PROTECTED FORESTS"

REPORT NO. 2010-9415

REVISION NO. 03

ASSESSMENT REPORT

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Title of Methodology: Improved Forest Management through Conversion of Logged to Protected Forests

Assessment Phases:

☒ Desk Review
☒ Follow up interviews
☒ Resolution of outstanding issues

Assessment Status

☐ Corrective Actions Requested
☐ Clarifications Requested
☒ Recommended for approval by VCSA
☐ Negative validation opinion

In summary, it is DNV's opinion that the proposed VCS methodology element "Improved Forest Management through Conversion of Logged to Protected Forests" as described in the Version 3.2 of January 2011, meets all relevant VCS requirements for VCS methodology elements. DNV thus recommends the methodology element for approval and request VCSA to finally approve the methodology element.

Report No.:	Subject Group:	Rev. No.
2010-9415	Forestry	03

Report title:
Validation of Proposed VCS Methodology "Improved Forest Management through Conversion of Logged to Protected Forests"

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Abbreviations

A/R	Afforestation/Reforestation (under CDM)
AFOLU	Agriculture, Forestry and Other Land Uses
AFOLU Guidelines	Agriculture, Forestry and Other Land Uses section of Guidelines for National Greenhouse Gas Inventories 2006
CAR(s)	Corrective action request(s)
CDM	Clean development mechanism
CL(s)	Clarification request(s)
DNV	Det Norske Veritas
DVR	Draft Validation report
IFM	Improved forest management (under VCS)
LtPF	Logged to Protected Forest
Methodology	The proposed methodology
VCS	Voluntary Carbon Standard
VCSA	Voluntary Carbon Standard Association
VCU	Voluntary Carbon Unit

1 ASSESSMENT STATEMENT

Det Norske Veritas Certification AS (DNV) has performed the second assessment of the proposed VCS methodology "Improved Forest Management through Conversion of Logged to Protected Forests" (Methodology) developed by Green Collar Pty Ltd (Green Collar). The assessment was performed on the basis of VCS criteria for methodology development described in Section 2.2 of this document.

The Methodology element was prepared based on the requirement of VCS 2007.1 VCS Program Normative Document: Double Approval Process, version 1.1. The Methodology additionally follows the VCS guidelines and tools listed below:

- VCS Program Guidelines 2007.1 /12/;
- VCS Tool for AFOLU Methodological Issues /13/;
- VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities ;
- VCS Program Updates;
- REDD Methodology (Avoided Deforestation Partners);
- IFM Methodology - Extension of Rotation Age (Ecotrust);
- IFM Methodology - Conversion of Low-Productive forests to High-Productive forests (Silvestrum for Face the Future);
- VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination;
- Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities; and
- Tool for testing significance of GHG emissions in A/R CDM project activities /17/

The Methodology element belongs to the scope of *agriculture, forestry and other land use*.

The desk review was performed using the following artifacts –

- proposed new Methodology Version 3.0 dated June 2010 /1/, Version 3.1 dated November 2010 /2/and Version 3.2 dated January 2011 /3/
- the first methodology validation report /4/; and
- other supporting documentation including referenced, published scientific literature, reports and exiting methodologies listed in Section 2.3 of this document.

In summary, it is DNV's opinion that the proposed VCS methodology element "Improved Forest Management through Conversion of Logged to Protected Forests" as described in the Version 3.2 of January 2011 , meets all relevant VCS requirements for VCS methodology elements. DNV thus recommends the methodology element for approval and request VCSA to finally approve the methodology element Version 3.2

2 INTRODUCTION

Voluntary Carbon Standard Association (VCSA) has commissioned Det Norske Veritas Certification AS (DNV) as the second validator to perform an assessment of the methodology element "Improved Forest Management through Conversion of Logged to Protected Forests" developed by Green Collar Pty Ltd (Green Collar). This report summarizes the findings of the assessment of the methodology element, performed on the basis of VCS criteria for methodology elements. VCS criteria refer to VCS 2007.1 and the subsequent VCS Program Normative Documents.

2.1 Methodology Description

The Methodology is organised into the following nine steps (reproduced from page 9 of the Methodology):

STEP 0 – *Eligibility*, sets the criteria for eligibility of projects under the proposed LtPF methodology;

STEP 1 – *Project Boundaries and Scope*, provides guidelines for defining the geographical and temporal boundaries of the project and lists the GHG emissions sources and carbon pools to be included in the project accounts;

STEP 2 – *Baseline Selection, Additionality and Baseline Modelling*, provides guidelines to select the most conservative baseline scenario and to determine the additionality of the proposed project activities against the baseline selected;

STEP 3 – *Baseline Scenario Greenhouse Gas Emissions*, provides the detailed, step-by-step procedure to develop conservative estimates of net greenhouse gas emissions resulting from changes in carbon stocks as a result of planned timber harvest in the baseline scenario;

STEP 4 – *Project Scenario Net Greenhouse Gas Emissions*, provides the detailed, step-by-step procedure to develop conservative estimates of net greenhouse gas emissions resulting from changes in carbon stocks in the project scenario;

STEP 5 – *Project Leakage*, describes the methodology approach to account for leakage mechanisms arising from the implementation of project activities;

STEP 6 – *Net Project Greenhouse Gas Emission Reductions*, provides the methodological approach to determine the amount of net greenhouse gas emissions at the end of each year on the basis of the estimates of greenhouse gas emissions determined at steps 3 and 4 for the baseline and project scenarios respectively, and of the estimated amount of leakage determined at step 5;

STEP 7 – *Project Voluntary Carbon Units*, provides the methodological approach to determine, on the basis of the amount of net greenhouse gas emissions estimated at Step 6 and deductions to account for risk and uncertainty, the amount of carbon units that should be credited to the project each year over the crediting period; and

STEP 8 – *Project Monitoring*, provides guidelines for the implementation of a monitoring plan and identifies monitored parameters to assess carbon stock change and disturbance in the project case.

2.2 Scope and Criteria

As required by the Double Approval Process, DNV's second assessment of the methodology evaluated whether or not the Methodology has been prepared in line with VCS Program requirements, including Section 5 and Section 6 of the VCS 2007.1 /8/. The following criteria were used for the assessment:

- Eligibility Criteria: assessment of whether the methodology's eligibility criteria are appropriate and adequate;
- Baseline approach: assessment of whether the approach for determining the project baseline is appropriate and adequate;
- Additionality: assessment of whether the approach/tools for determining whether the project is additional are appropriate and adequate;
- 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;
- Emissions: assessment of whether an appropriate and adequate approach is provided for calculating baseline emissions, project emissions and emission reductions;
- Leakage: assessment of whether the approach for calculating leakage is appropriate and adequate;
- Monitoring: assessment of whether the monitoring approach is appropriate and adequate;
- Data and parameters: assessments of whether monitored and not monitored data and parameters used in emissions calculations are appropriate and adequate; and
- 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 – relevance, completeness, consistency, accuracy, transparency and conservatism.

The assessment consisted of the following three phases**:**

1. a desk review of the proposed IFM methodology document with generic information;
2. follow-up interviews with programme stakeholders; and
3. the resolution of outstanding issues and the issuance of the final assessment report.

The following sections outline each step in more detail.

2.3 Desk Review of the New Methodology

The following tables list the documentation that was reviewed during the validation:

2.3.1 Documentation used by DNV to validate/cross-check the information provided by the methodology developer

/1/ Green Collar Pty Ltd, Improved Forest Management Conversion of Logged to Protected Forests, Version 3.0 June 2010

/2/ Green Collar Pty Ltd, Improved Forest Management Conversion of Logged to Protected Forests, Version 3.1 November 2010

/3/ Green Collar Pty Ltd, Improved Forest Management Conversion of Logged to Protected Forests, Version 3.2 January 2011

/4/ Rainforest Alliance, Voluntary Carbon Standard Third Methodology Assessment Report for: Improved Forest Management Conversion of Logged to Protected Forests

/5/ Green Collar Pty Ltd, Natural Disturbance and the Logged to Protected Forests Methodology, 21 October 2010

/6/ Carbon Planet, Comments on GreenCollar Climate Solutions' Proposed Methodology for Improved Forest Management – Conversion of Logged to Protected Forest (IFM-LtPF) (Available at http://www.v-c-s.org/docs/Carbon-Planet_Review_of_GreenCollar_IFM-LtPF_Methodology.pdf)

/7/ Brinkman & Associates Reforestation Ltd, Review of proposed VCS LtPF methodology (Available at http://www.v-c-s.org/docs/Brinkman%20LtPF%20methodology%20review.doc)

2.3.2 Methodologies, tools and other guidance by the VCSA, UNFCCC and IPCC

/8/ VCS Voluntary Carbon Standard 2007:1

/9/ VCS Program Update 24 May 2010

/10/ VCS Guidance for Agriculture, Forestry and Other Land Use Projects (AFOLU), November 18, 2008

/11/ VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination, November 18, 2008

/12/ VCS Program Guidelines 2007.1 (18 November 2008)

/13/ VCS Tool for AFOLU Methodological Issues, November 18, 2008

/14/ CDM EB, Tool for the demonstration and assessment of additionality, version 5.2.

/15/ VCS Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities (VT0001, Version 1.0) http://www.v-c-s.org/docs/VCS-Tool-VT0001_Tool-for-Demonstration-and-Assessment-of-Additionality-in-AFOLU-Project-Acitivities.pdf

/16/ The UNFCCC tool for the "Calculation of the number of sample plots for measurements within A/R CDM project activities", version 2 (available at: http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-03-v2.pdf)

/17/ The UNFCCC "Tool for testing significance of GHG emissions in A/R project activities", Version 1 (available at: http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-04-v1.pdf)

/18/ 2006 IPCC Guidelines for national Greenhouse Gas Inventories (available at: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_14_An2_SumEqua.pdf)

/19/ VCS Association: *Update to the VCS 2007.1: Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination*. 13 April 2010. Available at: www.v-c-s.org

/20/ VCS Association: *Update to the VCS 2007.1: Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination*. 8 September 2010. Available at: www.v-c-s.org

2.4 Follow-up Interviews with Programme Stakeholders

The following telephone contacts were made to Green Collar and the VCSA to discuss aspects of the proposed methodology. Persons involved in the telephone conversions and the topic(s) discussed are listed in the Table 1 below.

Table 1: Persons involved in follow up interviews

Date	Name	Organization	Topic
24-09-2010 & 27-09-2010	Charles Wilson	Green Collar	Accounting for baseline and project scenario emissions due to fire and non-fire natural disturbances
27-10-2010	Carolyn Ching	VCSA	Accounting for carbon stock losses due to disturbances

2.5 Resolution of Outstanding Issues

The objective of this phase of the assessment is to resolve any outstanding issues that needed to be clarified prior to DNV's positive conclusion on the methodology element. The assessment findings relate to the methodology element as documented and described in the initial /1/ and subsequent /2//3/ methodology element documentation and the first methodology validation report from Rainforest Alliance /4/.

In order to ensure transparency the issues raised are documented as CAR(s) in Appendix A. Findings established during the assessment can either be seen as a non-fulfilment of VCS criteria or where a risk to the fulfilment of programme objectives is identified. Corrective action requests (CARs) are issued, where:

(a) Mistakes have been made with a direct influence on programme results;

(b) VCS methodology specific requirements have not been met; or

(c) There is a risk that the proposed Methodology would not be accepted as a VCS approved methodology for IFM LtPF or that emission reductions will not be certified.

A request for clarification (CLs) is used where additional information is needed to fully clarify an issue. Fig 1 below provides a sample table for presentation of the CARs and CLs. This table and the actual assessment protocol are presented as Appendix A.

Figure 1 ***Assessment Table: Resolution of Corrective Action and Clarification Requests***

Draft report clarifications and corrective action requests	***Methodology element developer Response***	***Assessment conclusion***
If the conclusions from the draft assessment are either a CAR or a CL, these should be listed in this section	*The responses given by the methodology element developer during the communications with the assessment team should be summarized in this section.*	*This section should summarize the assessment team's responses and final conclusions.*

2.6 Internal Quality Control

The assessment report and the methodology element underwent a technical review before DNV submitted this final assessment report to VCSA.

2.7 Validation Team

Table 2: Validation team

Role/Qualification	***Last Name***	***First Name***	Desk Review	Interviews	Reporting	Technical Review	Sectoral competence
Project Manager	Peters	Noel	√	√			
Assessment team leader	Kapambwe	Misheck	√	√	√		√
Auditor	Robinson	Mark	√				
Technical Reviewer	Espejo	Andrés				√	√

3 ASSESSMENT FINDINGS

The findings of the assessment are stated in the following sections. The findings of the methodology assessment have been documented in Appendix A.

The final assessment conclusions relate to the VCS methodology element "Improved Forest Management through Conversion of Logged to Protected Forests" as described in the Version 3.2 of January 2011 /3/.

3.1 Applicability and Eligibility Criteria

3.1.1 Applicability Criteria

The applicability of methodology element is clearly stated in the Methodology /3/ as follows:

- Only applicable to projects that protect forests that would be logged in the absence of carbon finance;
- Projects must fall within the AFOLU project category "IFM Logged to Protected Forest" as defined in the most recent version of the VCS AFOLU Guidance document; and
- Projects must be in areas that have been designated, sanctioned or approved for such activities (e.g., as logging concessions or plantations) by the national or local regulatory bodies.

The Methodology /3/ also gives the following specific conditions under which it can be used:

- Forest management in the baseline scenario must be planned timber harvest;
- Under the project scenario forest use is limited to activities that do not result in commercial timber harvest or forest degradation;
- Planned timber harvest must be estimated using forest inventory methods that determine allowable offtake as volume of timber (m^3 ha^{-1});
- The boundaries of the forest land must be clearly defined and documented;
- Baseline condition cannot include conversion to managed plantations; and
- Baseline scenario, project scenario and project case cannot include wetland or peatland.

DNV finds these applicability criteria appropriate and adequate.

3.1.2 Eligibility Criteria

The methodology element documentation clearly defines the eligibility criteria for the methodology as required by VCS standard /8/, guidelines /9/, /10/ and tools /11/. The eligibility criteria have been defined in the Methodology /1/ as:

- Legal right to harvest, issued by a relevant government body, must pre-exist the implementation of the project. The legal right to harvest must be demonstrated by documentary proof of legal permissibility for timber harvest, intent to harvest and a description of the timber resource.
- Project proponents must demonstrate intent to harvest through either documented evidence demonstrating that the project site is representative of other forestlands harvested in the country within the past two years, and that the project site is within commercially viable distance to existing transport networks and a port for timber export or a mill for timber processing, or a valid and verifiable Government-approved timber management plan for harvesting the project area.

DNV finds the eligibility criteria both appropriate and adequate.

3.2 Baseline Approach

The methodology element's approach to determine the baseline scenario is clearly defined as below:

(a) Selection of baseline

- Identify realistic and credible alternative land use scenarios that could have occurred on the land within the proposed project boundary in the absence of the proposed IFM project activity. The Methodology allows proponents to use land-use records, field surveys, data and feedback from stakeholders and information from other sources as appropriate to do this.
- Select the most realistic, feasible and conservative baseline scenario taking into account relevant national and/or sectoral policies and circumstances.
- As per the applicability conditions of the Methodology, the project must demonstrate a baseline of planned timber harvest. If such a baseline cannot be demonstrated then this methodology cannot be applied.

(b) Modelling the baseline scenario

The methodology uses two alternative approaches to model the baseline scenario: historical baseline scenario and common practice baseline scenario. The Methodology also provides guidelines on the modelling requirements of each approach.

The baseline scenario and timber harvest plan derived from historical practices of the baseline agent of timber harvest must be modelled as the project baseline if the project proponent can provide the following documentation relevant to the project area:

- Historical records of forest management exist for a minimum of 5 or more years preceeding the project start date;
- Historical records indicate that the management practices have surpassed the legal barriers provided by conforming with all local and regional forest legislation; and
- Historical records that indicate that the historical management surpasses financial barriers by providing above average financial returns.

The alternative approach is to model on common practice in the project area. Common practice will be timber harvest under the legal requirements for forest management and will be determined from a timber harvest plan developed from:

- the project area through scenario modelling as though the legal requirements were implemented in the project area; and
- a reference area (or multiple reference areas) already under timber harvest management that complies with legal requirements for forest management and selected to be representative of local common practice for timber harvest.

Where there is limited capacity to generate the baseline scenario using a reference site in the region of the project area, the Methodology allows the use of multiple reference areas so long as the reference area criteria regarding forest types, climate and elevation are met.

The Methodology requires the timber harvest plan to:

- identify the relative number of trees per hectare potentially available for harvest by species in each stratum;
- demarcate all non-harvest areas such as slope, swamp areas or conservation buffers;
- divide the harvestable forest into annual operating areas or land parcels;
- include a design and presentation of the transport system to move harvested timber products from the land parcels;
- include lists of harvest and transport machinery used;
- follow local best practice for timber harvest and the timber resource volume and extraction quotas defined in the legal requirements; and
- include a detailed planned timber harvesting schedule spelling out details of harvest for each land parcel in the project area in terms of:
    - the species to be harvested;
    - the year (*1*,*2*,*3*...) in which timber harvest of each land parcel is scheduled to occur;
    - the number of years each land parcel is in a post-harvest state during the crediting period;
    - the maximum and minimum diameters at breast height (DBH), at stump and at top for tree harvesting;

- the planned harvesting regime (clear felling, specie/stratum-selective logging, area-selective logging);
- technical specifications for the categories of wood products to be harvested; and
- the total volumes or fractions to be harvested, broken down by categories of wood products (defined as sawnwood, wood-based panels, other industrial roundwood, paper and paper board, and other).

The Methodology requires project proponent to submit the planned timber harvesting schedule as part of the VCS-PD.

(c) Stratification

The Methodology provides guidance and requires project proponents to stratify project areas that contain different forest types with different carbon density to improve the accuracy and precision of carbon stock estimates. The Methodology further requires that baseline stratification is developed ex ante and to be submitted as part of the VCS-PD.

The baseline approach is considered appropriate and adequate.

3.3 Additionality

When determining the additionality of the proposed project activities against the baseline selected, the Methodology requires project developers to use the most recent version of the VCS Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities /15/. This is deemed by DNV as appropriate and adequate.

3.4 Project Boundary

The definition of a project's physical boundary is clearly and properly defined. The carbon pools included in or excluded from a project boundary are shown in Table 3; the justification to include or exclude certain type of carbon pools is justified. DNV is satisfied that the project boundary definition, carbon pools and sources and types of gases included are appropriate, adequate and in line with VCS requirements of /8/ and /11/.

Table 3: Selected carbon pools

Carbon Pools	Selected (Yes or No)
Above ground trees	Yes
Above ground non-tree	No
Below-ground	No
Dead-wood	Yes
Harvested wood products	Yes
Litter	No
Soil organic carbon	No

The emission sources included in the project boundary area are shown in Table 4.

Table 4: Emissions sources included in the project boundary

Sources	Gas	Included/ Excluded	Justification/explanation of choice
Burning of Biomass	Methane (CH_4)	Included	Included as CO_2 equivalent emission

3.5 Emissions

3.5.1 Baseline GHG removals and emissions

Step 3 of the Methodology /3/ provides equations and guidelines required for project proponents to model the ex-ante baseline greenhouse gas accounts. The baseline net greenhouse gas emissions/removals are determined from calculation of carbon stock changes in all pools minus carbon stocks from forest regrowth post timber harvest. Carbon pools included in modelling are carbon stock changes in harvested wood products, dead-wood and above ground tree biomass (regrowth).

The Methodology also allows the use of historical or pre-existing forest inventory data provided the data represents the project strata, is not more that 10 years old and, where data is more than 10 years old, it can only be used after it has been validated using limited sampling within the project area.

The carbon stock changes in the trees, deadwood and wood products is estimated using peer reviewed forestry models of forest management across baseline period. Few examples of models that can be used have been listed in the Methodology /3/

3.5.2 Project GHG removals and emissions

The Methodology provides a detailed step-by-step procedure to develop conservative estimates of net GHG emission changes resulting from changes in carbon stocks in the project scenario in Step 4. The procedure provides steps and guidance, including equations for calculating carbon stock change in above-ground biomass due to ongoing forest growth and carbon stock change due to natural and non-natural forest disturbance in the project scenario. The net GHG emissions in the project scenario is then estimated as the annual carbon stock change in the above-ground biomass of trees minus GHG emissions from forest disturbance minus carbon stock changes due to illegal logging.

3.5.3 Emission reductions

The Methodology clearly describes the calculation of the emission reduction from improved forest management practice through conversion of logged to protected forests. The emission reductions are the net GHG emission removals by sink minus the baseline net GHG removals by sinks minus leakage.

In addition, the Methodology provides a clear process of adjusting the number of GHG credits for each year in the crediting period for total uncertainty for both the baseline and project scenario. In calculating the amount of VCU's for the project, GHG credits are further adjusted by subtracting total number of credits withheld in VCS buffer account /3/ to account for risk estimated using the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination /11/.

The approach provided for calculating baseline emissions, project emissions and emission reductions are deemed appropriate and adequate by DNV.

3.6 Leakage

The Methodology gives clear guidance on the treatment of leakage from both activity shifting and market effects. In addition, the consideration of leakage from market effects resulting from a shift in harvest through time is in line with VCS guidance for AFOLU /10/, Tool for AFOLU Methodological Issues /13/ and VCS Program Update /9/.

3.7 Monitoring

The Methodology provides the following parameters for regular monitoring or estimation:

- illegal logging PRA;
- result of limited illegal logging survey;
- area disturbed in stratum *i* at time *t* ($A_{dist,i,t}$);
- area potentially impacted by illegal logging in stratum *i* ($A_{DIST\_IL,\,i}$);
- area burnt in stratum *i* at time *t* ($A_{burn,i,t}$);
- biomass carbon of trees cut and removed through illegal logging in stratum *i* at time *t* ($C_{DIST\_IL,i,t|PRJ}$);
- total area of illegal logging sample plots in stratum *i* (AP_i);
- merchantable biomass as a proportion of total above-ground tree biomass for stratum *i* (PMP_i);
- area covered by stratum *i* (A_i);
- diameter at breast height of tree (DBH).

These parameters will be required for every verification of annual carbon stock change in above-ground biomass, net GHG emissions resulting from fire disturbance and net GHG emissions resulting from non-fire natural disturbance. The Methodology also provides further guidance on the management of monitoring data records.

The Methodology provides guidance on monitoring actual carbon stock changes. Where the monitoring plan includes sampling to adjust the number and boundaries of the strata or change stratification and sampling framework used ex ante (due to unexpected disturbances during crediting period or forest management activities affecting existing stratification in the project scenario), the methodology mandates project proponents to use the most recent version of the tool for the "Calculation of the number of sample plots for measurements within A/R CDM project activities" approved by the CDM Executive Board to determine the

sample size and allocation among strata. The Methodology provides a list of resource materials to assist project proponents with the design of a verifiable forest field inventory based on best practice for sampling, data management and analysis.

The Methodology also provides a list of data and parameters not to be monitored either because default values are used or a one off measurement is sufficient.

The project monitoring approach is considered appropriate and adequate, in line with the VCS requirements and is accepted by DNV.

3.8 Data and Parameters

Both monitored and not monitored data and parameters used in emissions calculations are defined in the Methodology clearly and appropriately to make it possible for the emission reductions to be estimated and verified in the verification periods.

Data parameters not to be monitored include:

- merchantable volume for tree *l* of species *j* in sample plot *sp* in stratum *I* ($V_{l,j,i,sp}$);
- area covered by stratum *i* over land parcel *p* ($A_{i,p}$);
- mean merchantable biomass as a proportion of total aboveground tree biomass for each forest type (PML_{FT});
- forest regrowth rate post timber harvest for stratum *i* (RGR_i);
- number of years since timber harvest in stratum *i* in land parcel *p* ($TH_{i,p}$);
- mean volume of extracted timber per unit area for species *j* in stratum *i* ($V_{EX,j,i|BSL}$);
- biomass conversion and expansion factor applicable to wood removals in the project area ($BCEF_R$);
- carbon fraction of dry matter for species *j* (CF_j);
- basic wood density of species *j* (D_j);
- allometric equation(s) for species *j* linking measured tree variable(s) to aboveground biomass of living trees ($f_j(X,Y...)$;
- combustion factor for stratum *i* (vegetation type) ($COMF_i$);
- emission factor for stratum *i* for gas *g* (G_{gi});
- fraction of wood products that will be emitted to the atmosphere between 5 and 100 years after production (OF);
- fraction of wood products that will be emitted to the atmosphere within 5 years of production (SLF);
- fraction of extracted biomass effectively emitted to the atmosphere during production (WW);
- Area of sample plot (A_{sp}).

The methodology requires project proponents to retain a conservative approach when choosing key parameters or making important assumptions based on information that is not specific to the project circumstances, such as in use of existing published data: that is, if

different values for a parameter are equally plausible, a value that does not lead to over-estimation of net anthropogenic GHG removals by sinks must be selected

The references used in the Methodology for the various data parameters have been described clearly.

Requirements for data and calculation reviews are clearly defined in the Methodology and are deemed by DNV to be appropriate for reasonably reducing uncertainties related to the emission reductions.

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

The Methodology is developed in line with the project-level principles of VCS 2007.1 as demonstrated in Sections 3.1 through to 3.8 of this report. It is DNV's view that the approach to calculate and account for carbon stock losses due to forest disturbances in both the baseline and project scenarios adequately addresses the project-level principles of completeness and accuracy.

3.10 Comments by Stakeholders

Green Collar submitted the proposed Methodology "Improved Forest Management Logged to Protected Forests", to the VCSA which was published on the VCS website for public consultation with stakeholders from 13 January 2010 to 11 February 2010. Two comments were received from stakeholders during the consultation period:

- Carbon Planet (Available at: http://www.v-c-s.org/docs/Carbon-Planet_Review_of_GreenCollar_IFM - LtPF_Methodology.pdf;
- Brinkman & Associates Reforestation Ltd (Available at: ttp://www.v-c-s .org/docs/Brinkman%20LtPF%20methodology%20review.doc

Green Collar responded to these comments by making amendments to the earlier drafts of the Methodology.

3.11 Comments by First Validator

Rainforest Alliance (RA) completed the first assessment of the proposed methodology on 14 September 2010. RA requested new information and identified opportunities for improvement and non-conformance during the validation of the Methodology. Green Collar addressed all corrective action (except for outstanding CAR 39/10) and clarification requests by submitting all new information requested, addressing all opportunities for improvement and non-conformance. DNV concurs with all comments and consequent revision by Green Collar. The first assessment by RA /4/ concluded that the proposed VCS methodology element "Improved Forest Management Conversion of Logged to Protected Forests", meets relevant requirements of the VCS except calculating emissions from forest disturbance in both the baseline and project scenarios, which needed clarification from VCS.

APPENDIX A

CDM VALIDATION PROTOCOL

Table 1: Mandatory requirements for methodologies under VCS Program

Requirements	Reference	Conclusion
1. About Eligibility Criteria		
Only areas that have been designated, sanctioned or approved for such activities (e.g., as logging concessions or plantations) by the national or local regulatory bodies are eligible for crediting under the VCS Improved Forest Management (IFM) category. Activities related to improved forest management are those implemented on forest lands managed for wood products such as saw timber, pulpwood, and fuelwood and are included in the IPCC category" forests remaining as forests"	VCS Tool for AFOLU Methodological Issues, November 18, 2008 - (Section 1. Scope and applicability for IFM of /13/). VCS Guidance for Agriculture, Forestry and Other Land Use Projects (AFOLU), November 18, 2008 – (Section 3 Step 3 paragraph 2 of /10/)	OK
2. About Baseline Approach		
The methodology shall establish criteria and procedures for identifying and assessing potential baseline scenarios, and for selecting the most conservative baseline scenario for the project area. This shall reflect what most likely would have occurred in the absence of the project	VCS Voluntary Carbon Standard 2007:1 – (Section 6.3 of /8/ VCS Tool for AFOLU Methodological Issues, November 18, 2008 (II. Step 4 paragraphs 14 & 17 of /13/	OK
3. About Additionality		
The methodology shall establish and justify criteria and procedures for demonstrating that the project results in GHG emission reductions or removal enhancements that are additional to what would occur in the baseline scenario.	VCS Voluntary Carbon Standard 2007:1- (Section 6.4 of /8/	OK
4. About Project Boundary		
The methodology shall require the project proponents to clearly define the project's physical boundary, including sources and types of gases included.	VCS Tool for AFOLU Methodological Issues, November 18, 2008 – (Steps 2 & 3 paragraphs 8, 9 & 10 of /13/	OK
5. About Emissions		
In identifying GHG sources, sinks and reservoirs, the methodology shall explain criteria and procedures used for identifying and selecting the GHG sources, sinks and reservoirs relevant for baseline and the project scenarios.	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/ VCS Tool for AFOLU Methodological Issues,	OK

Requirements	Reference	Conclusion
	November 18, 2008 – (II. Step 3 paragraph 9 of /13/.	
The methodology shall establish criteria, procedures and/or methodologies for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs relevant for the baseline and project scenarios	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/)	OK
The methodology shall establish criteria and procedures for selecting assumptions and values that ensure that the quantification does not lead to an overestimation of GHG emission reductions or removal enhancements.	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/)	OK
The methodology shall establish criteria, procedures and/or methodologies to assess the risk of a reversal of a GHG emission reduction or removal enhancement (i.e. permanence of GHG emission reduction or removal enhancement).	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/)	OK
The GHG emission reductions or removal enhancements shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario.	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/)	OK
The methodology shall use tonnes as the unit of measure and shall convert the quantity of each type of GHG to tonnes of CO2e using appropriate global warming potentials.	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/)	OK
If applicable, the methodology shall establish criteria and procedures for selecting or developing GHG emissions or removal factors that - are derived from a recognized origin; - are appropriate for the GHG source or sink concerned; - are current at the time of quantification; - take account of the quantification uncertainty and are calculated in a manner intended to yield accurate and reproducible results; and - are consistent with the intended use of the VCS PD or monitoring report as applicable.	VCS Voluntary Carbon Standard 2007:1– (Section 6.5.2 & 6.5.3 of /8/)	OK

Requirements	Reference	Conclusion
6. About Leakage		
The methodology shall require the project developers to demonstrate that there is no GHG leakage (either through activity shifting or market leakage) as a result of their projects, and also provide adequate and appropriate criteria and procedures for accounting for leakage where it exists.	VCS Tool for AFOLU Methodological Issues, November 18, 2008 – (II. Step 5 paragraphs 18, 20, 23, 24, 26 & 27 of /13/) VCS Program Update 24 May 2010 – (Section 5 of /9/) VCS Guidance for Agriculture, Forestry and Other Land Use Projects (AFOLU), November 18, 2008 - Step 5 of /10/)	OK
7. About Monitoring		
The methodology shall establish criteria and procedures for monitoring and reporting relevant GHG sources, sinks and reservoirs. The methodology shall establish and apply quality management procedures to manage data and information, including the assessment of uncertainty, relevant to the project and baseline scenario.	VCS Voluntary Carbon Standard 2007:1– (Sections 5.11, 5.12, 6.5.1 & 6.5.4 of /8/). VCS Guidance for Agriculture, Forestry and Other Land Use Projects (AFOLU), November 18, 2008 – (Section 3 Step 6 of /10/)	OK
8. About Data and Parameters		
The methodology shall establish criteria and procedures for selecting relevant GHG sources, sinks and reservoirs for either regular monitoring or estimation.	VCS Voluntary Carbon Standard 2007:1– (Section 5.5 of /8/)	OK
9. About Adherence to the Project-Level principles of the VCS Program		
The methodology shall adhere to VCS Program project-level principles - *relevance, completeness, consistency, accuracy, transparency and conservatism.*	VCS Voluntary Carbon Standard 2007:1– (Section 5.1 of /8/)	OK

Table 2 Requirement Checklist

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
1. About Eligibility Criteria					
1.1 Does the Methodology clearly define the eligibility and applicability criteria?	/1/ /11/ /10/	DR	The Methodology clearly defines the eligibility and applicability criteria as required by VCS standard, guidelines and tools. The Methodology also includes specific conditions under which it can be used /1/. Green Collar is requested to clarify if text is missing from the last dot point sentence "*Baseline scenario, project scenario and project case cannot include wetland or peatland; and*" on page 8 of Methodology /1/. GreenCollar is requested to clarify how project proponents will demonstrate legal permissibility for timber harvest in the project area in Step 0 of the Methodology /1/	~~CL 1~~ ~~CL 2~~	OK OK
2. About Baseline Approach					
2.1 Does the Methodology provide appropriate and adequate criteria and procedures for identifying and assessing potential baseline scenarios?	/1/	DR	Step 2.1 to 2.3 of the Methodology /1/ provides appropriate and adequate guidance, procedures and criteria for selecting and modelling realistic and credible land use.		OK
2.2 Does the Methodology require the project proponents to select the most conservative, realistic and credible baseline scenario for the project that reflects what most likely would have occurred in the absence of the project?	/1/ /8/ /13/	DR	Step 2.1 of the Methodology /1/ requires project proponents to identify realistic and credible land use scenarios in accordance with section 6.3 of the VCS Voluntary Carbon Standard 2007.1 /8/ and specific requirements of paragraph 14 of the VCS Tool for		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			AFOLU Methodological Issues /13/ for project developers to provide specific information (about documented history of the operator, legal requirements for forest management and land use in the area and proof that their environmental practices equal or exceed those commonly considered a minimum standard in the project area) to prove that they meet minimum acceptable standards for establishing a baseline. In paragraph 1 of Step 2.2.1 of the Methodology /1/, it is not sufficiently clear that the baseline is built on the historical management of the baseline agent as a priority with the common practice scenario as the next best method. Green Collar is requested to clarify that the baseline is built on the historical management of the baseline agent as a priority. Section (c) of timber harvest plan in Box 1 requires project proponents to "divide the harvestable forest into annual operating areas (referred to throughout this methodology as *land parcels*" but does not provide guidance on how this division should be done. Green Collar is requested to clarify the basis used for dividing harvestable forest into annual operating areas. The VCS tool referred to in Step 2.1 and Step 2.4 of the Methodology /1/ is revised or updated overtime and project proponents would need to use the most recent version of this document for project design and implementation. GreenCollar is requested to clarify	~~CL3~~ ~~CL4~~	OK OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			why the methodology does not require that the *most recent version* of the document be used.	~~CL5~~	OK
3. About Additionality					
3.1 Does the methodology provide adequate and appropriate criteria and procedures by which project proponents can demonstrate that the project results in GHG emission reductions or removal enhancements that are additional to what would occur in the baseline scenario?	/1/ /15/	DR	The Methodology requires project developers to use, as a default tool, the current version of the "VCS Tool for the Demonstration and Assessment of Additionality in VCS AFOLU project activities" /15/ to test the additionality of the project.		OK
4. About Project Boundary					
4.1 Does the methodology require that the project boundaries (including carbon pools and greenhouse gases to be included or excluded) are clearly defined, and is adequate and appropriate guidance provided in the Methodology to achieve this?	/1/ /13/ /17/	DR	The Methodology requires project proponents to clearly define the project's geographical and temporal boundaries (crediting and monitoring periods). This is in line with VCS requirements of the VCS Tool for AFOLU Methodological Issues /13/. The Methodology also provides adequate guidance on how to achieve this. The carbon pools included in or excluded from the project boundary are given in Table 1 of the Methodology /1/; reasonable justification to include or exclude certain types of carbon pools is provided. The emission sources included in or excluded from the project boundary area, including justification, are also given in Table 2 of the Methodology /1/. The "Tool for testing significance of GHG emission in A/R CDM project activities" /17/ shall be applied to determine significant emission sources to account for in the project boundary. GreenCollar is requested to clarify inclusion of the	~~CL6~~	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			sentence "***Following the VCS definition of market leakage the geographic boundaries for leakage from market effects are those of the country in which the project area occurs***" in Step 1.1 of the Methodology /1/. GreenCollar is requested to clarify which VCS documents are being referred in Step 1.2.1 and Step 1.2.2 of the Methodology /1/.	~~CL7~~	OK
5. About Emissions					
5.1 Does the methodology provide adequate and appropriate criteria and procedures for calculating greenhouse gas emissions relevant for baseline scenario?	/1/ /6/	DR	Step 3 of the Methodology /1/ provides equations and guidelines required for project proponents to model the ex-ante baseline greenhouse gas accounts. The Methodology clearly differentiates between emissions to be modeled - Emission from wood product conversion - Decomposition of deadwood from harvested trees - Emissions from wood product retirement - Stock change due to regrowth following timber harvest And those to be excluded from modelling		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			- Decomposition of trees incidentally killed during tree felling - Decomposition of trees killed through skid trail creation - Decomposition of trees killed through road construction - Emissions through fossil fuels burned in baseline harvesting practices - Emissions through subsequent forest re-entry Hence, the net carbon stock change across all land parcels in the baseline to be converted to emissions is equal to the sum of carbon stock change in all land parcels as a result of timber harvest plus the sum of all carbon stock change resulting from conversion and retirement of wood products in all land parcels minus the sum of carbon sequestration from forest regrowth after harvest in all land parcels. The net carbon stock change across the baseline is then annualised by dividing by the crediting period for the project. The carbon stock changes in the trees, deadwood and wood products are estimated using guidelines and default values adopted from the VCS, UNFCCC and IPCC, and peer reviewed forestry models of forest management across baseline period. Few examples of models that can be used have been listed in the Methodology /1/ While *ex post* emissions from forest disturbance (fire and non-fire) are estimated and deducted from the		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			carbon stocks in the project scenario, forest disturbance emissions are not estimated ex ante for the baseline scenario. Green Collar was requested to justify why emissions from forest disturbance are not estimated *ex ante* for the baseline scenario. The justification provided was deemed appropriate and adequate /6/. The CDM tool referred to in Step 3.1 of the Methodology /1/ is revised or updated overtime and project proponents would be need to use the most recent version of this document for project design and implementation. GreenCollar is requested to clarify why the methodology does not require that the *most recent version* of the document be used. The sentence "*The net carbon stock change…must be converted to net greenhouse gas emissions and is calculated as*:" is not consistent with Equation (12) which converts the net carbon stock change to tCO_2e. GreenCollar is requested to clarify this inconsistence in first paragraph after Equation (11) of the Methodology /1/.	~~CL8~~ ~~CL9~~	OK OK
5.2 Does the Methodology establish criteria and procedures for quantifying GHG emissions and/or removals for selected GHG sources, sinks and/or reservoirs relevant for project scenario for each year of the proposed crediting period?	/1/ /18/ /8/	DR	The Methodology provides a detailed step-by-step procedure to develop estimates of net GHG emission changes resulting from changes in carbon stocks in the project scenario in Step 4. The procedure provides guidance, including equations for calculating carbon		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			stock change in above-ground biomass due to ongoing forest growth and carbon stock change due to forest disturbance (through fire and non-fire damage, illegal logging) in the project scenario. The net GHG emissions in the project scenario is then estimated as the annual carbon stock change in the above-ground biomass of trees minus GHG emissions from forest disturbance minus carbon stock changes due to illegal logging. According to the IPCC /18/, "it is *good practice* to report all areas affected by disturbances such as fires, pest outbreaks and windstorms that occur in managed forest lands irrespective of whether these were the result of human activity". In Equations 18 and 19 of /1/, only emissions attributable to carbon stock losses of *harvested biomass* per unit area of species are calculated. This does not adequately account for carbon stock losses from other categories of above-ground biomass in the affected area. This approach potentially over-estimates the net carbon stocks and the VCUs, hence non-conservative and non-conforming to VCS conservatism principle of /8/. Green Collar was requested to justify the approach used for calculating carbon stock losses from forest disturbances. Green Collar provided justification for the approach used and this was deemed adequate /6/. GreenCollar is requested to clarify the inconsistence in	~~CL10~~	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			the use of terminology for net GHG emission reductions in Step 6 of the Methodology /1/. The heading of Step 6 refers to "Net project Greenhouse Gas Emission Reductions". However, paragraph 1 below this heading talks about estimation of net GHG emissions resulting at the end of each year. GreenCollar is requested to clarify usage of the word 'across' in parameter definitions for Equation (24) of the Methodology /1/. Step 4.2.1.2 of the Methodology /1/ refers to non-fire natural disturbance. Paragraph 3 of Step 4.2.1.2 refers to fires disturbance occurring *ex post*. GreenCollar is requested to clarify this discrepancy. GreenCollar is requested to clarify that only the parcels that would be harvested in the baseline within the crediting period shall be considered in the calculations by making a change to this sentence: "Therefore, net change in carbon stock across all parcels in the baseline scenario since the start of the project activity is calculated as" in Step 3.5.	~~CL11~~ ~~CL12~~ ~~CL19~~	OK OK OK
5.3 If highly uncertain data and information are relied upon, does the methodology provide criteria and procedures for selecting assumptions and values that ensure that the quantification does not lead to an overestimation of GHG emission reductions or removal enhancements?	/1/ /8/ /14/	DR	Uncertainty is calculated as the square root of the sum of the squares of project uncertainty and baseline uncertainty and is calculated at the time of reporting through propagating the error in the baseline stocks and the error in the project stocks. The Methodology /1/ provides guidance to project		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			proponents to quantify uncertainties associated with parameters and coefficients including estimates of area, carbon stocks, and regrowth and expansion factors. Specific guidelines are provided regarding choice of appropriate allometric equations for tree species in the project area and use of pre-existing forest inventory data for baseline modelling. For example, pre-existing data must represent the project strata, must not be more than 10 years old and where forest inventory data is more than 10 years old, that the volume estimate derived from the pre-existing data has been validated through field surveys with limited sampling within the project area using standard forest inventory assessment methods and the "Tool for Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities" /14/. The Methodology also recommends usage and application of standard operating procedures and quality control and quality assurance procedures from published handbooks or from the IPCC guidelines for forest inventory including field data collection and data management. In addition, the methodology provides a list of resource material to assist project proponents with the design of a verifiable forest inventory.		
5.4 Does the methodology provide criteria and procedures to assess the risk of a reversal of a GHG emission reduction or removal enhancement (i.e. permanence of	/1/ /11/	DR	The Methodology provides a clear process of adjusting the number of GHG credits for each year in the crediting period for total uncertainty for both the		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
GHG emission reduction or removal enhancement)?			baseline and project scenario. The methodology requires project proponents to apply the VCS Tool for AFOLU Non-Permanence Risk Analysis and Buffer Determination /11/ to determine the risk of reversal of GHG emission reductions and the total buffer proportion to be withheld in the VCS buffer account. In calculating the number of VCU's for the project, GHG credits are adjusted using this buffer proportion to account for risk.		OK
5.5 Are the GHG emission reductions or removal enhancements quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and reservoirs relevant for the project and those relevant for the baseline scenario?	/1/	DR	The Methodology has clearly described the calculation of the emission reduction from improved forest management practice through conversion of logged to protected forests. The emission reductions are the net GHG emission removals by sink minus the baseline net GHG removals by sinks minus leakage. The Methodology uses inventory method and applying the expansion factor to estimate carbon stocks in the baseline scenario. In the project scenario, the change in carbon stock is estimated through regrowth and by applying the allometric equation method. Green Collar is requested to clarify how the carbon stock estimates from two different accounting methods are comparable.	~~CL13~~	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
5.6 Does the methodology use tonnes as the unit of measure and shall convert the quantity of each type of GHG to tonnes of CO2e using appropriate global warming potentials?	/1/	DR	The methodology uses tonnes as the unit of measure to convert the quantity of each type of GHG to tonnes of CO_2e. Equation (17) is used to estimate greenhouse gas emissions from biomass burning: $\Delta C_{DIST\_FR,t\|PRJ} = \sum_{i=1}^{M} (A_{burn,i,t} * B_{i,t\|PRJ} * COMF_i * G_{g,i} * 10^3)$ Equation (17) appears to require a conversion from tCH_4. Green Collar is requested to amend Equation (17) so that $\Delta C_{DIST\_FR,t\|PRJ}$ is in tCO_2e as defined in the parameter list.	~~CL14~~	OK
6. About Leakage					
6.1 Does the methodology require project developers to demonstrate that there is no leakage (either through activity shifting or market leakage) in and outside their project areas?	/1/ /10/ /13/ /9/	DR	The Methodology gives clear guidance on the treatment of leakage from both activity shifting and market effects. In addition, the consideration of leakage from market effects resulting from a shift in harvest through time is in line with VCS guidance for AFOLU /10/, Tool for AFOLU Methodological Issues /13/ and VCS Program Update /9/ The Methodology also provides guidance on how to calculate adjustments that shall be made to project credits to account for potential market leakage resulting from a reduction of timber production by the application of relevant leakage factors provided by the methodology. This provides additional assurance to the		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			prevention of leakage due to project implementation. GreenCollar is requested to include reference to the VCS conditions on projects which fail to submit periodic verification in Step 5.1 of the Methodology /1/. GreenCollar is requested to clarify how project proponents will calculate an area weighted final value for LF_{ME} in Step 5.2 of the Methodology /1/. The VCS tool referred to in Step 7.2 of the Methodology /1/ is revised or updated overtime and project proponents would need to use the most recent version of this document for project design and implementation. GreenCollar is requested to clarify why the methodology does not require that the *most recent version* of the document be used.	~~CL15~~ ~~CL16~~ ~~CL17~~	OK OK OK
7. About Monitoring					
7.1 Does the methodology provide criteria and procedures for monitoring and reporting relevant GHG sources, sinks and reservoirs	/1/	DR	The scope of monitoring and the monitoring plan are clearly described. The Methodology /1/ provides the following parameters for regular monitoring or estimation: • Illegal logging PRA • Result of limited illegal logging survey • Area burnt in stratum *i* at time *t* ($A_{burn,i,t}$) • Area covered by stratum *i* (A_i) • Area potentially impacted by illegal logging in stratum *i* ($A_{DIST\_IL,\ i}$) • Biomass carbon of trees cut and removed		

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			through illegal logging in stratum I at time t ($C_{DIST\_IL,i,t\,|\,PRJ}$) • Total area of illegal logging sample plots in stratum *i* (AP_i) • Merchantable biomass as a proportion of total above-ground tree biomass for stratum *i* (PMP_i) • Diameter at breast height of tree (DBH) These parameters have to be monitored as per the frequency indicated in the Methodology, and the latest values have to be available at each verification. The scope of monitoring and the monitoring plan are clearly described in the Methodology /1/. The monitoring plan addresses the monitoring of project implementation, actual carbon stock changes from project activity and carbon stock changes from forest disturbance and illegal logging. The methodology also provides guidance on re-sampling to adjust the number and boundaries of the strata or change stratification and sampling framework used ex ante if required in the project scenario. The CDM tool referred to in Step 8.5 of the Methodology /1/ is revised or updated overtime and project proponents would need to use the most recent version of this document for project design and implementation. GreenCollar is requested to clarify why the methodology does not require that the *most recent version* of the document be used.	~~CL18~~	OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
7.2 Does the methodology provide quality management procedures to manage data and information, including the assessment of uncertainty, relevant to the project and baseline scenario	/1/	DR	Methodology /1/ provides procedure on the management of monitoring data records. The methodology requires that data collected as part of monitoring is archived electronically and kept at least for 2 years after the end of the crediting period. Data archiving shall take both electronic and paper forms, and copies of all data shall be provided to each project participant. Project proponents are required to keep and maintain copies of all electronic data and reports on durable media such as CDs and copies of the CDs are to be stored in multiple locations. The types of data to be included in the archives are clearly specified in the Methodology.		OK
8. About Data and Parameters					
8.1 Are the monitored and not monitored data used in emissions calculations appropriate and adequate?	/1/	DR	Requirements for data and calculation reviews are clearly defined in the Methodology /1/. Both monitored and not monitored data and parameters used in emissions calculations are defined in the Methodology clearly and appropriately to make it possible for the emission reductions to be estimated and verified in the verification periods. The Methodology also provides a list of data and parameters not to be monitored (either because default values are used or a one off measurement is sufficient). Not monitored data and parameters include area of baseline stratum, biomass expansion factor, carbon		OK

Checklist Question	Ref	MoV	Assessment by DNV	Draft Concl.	Final Concl.
			fraction, wood density, root shoot ratio, etc. The references used in the Methodology for the various data parameters have been described clearly.		
9. About Adherence to the Project-Level principles of the VCS Program					
9.1 Does the methodology adhere to adheres to the VCS Program project-level principles of relevance, completeness, consistency, accuracy, transparency and conservatism?	/1/ /8/	DR	The Methodology /1/ is developed in line with the project-level principles of VCS 2007.1 as demonstrated in Sections 3.1 through to 3.8 of this report, subject to satisfactory responses to CLs.	~~Satisfactory responses to all CLs required~~	OK

Table 3 Clarification Requests

Clarification Requests	Methodology Element Developer Response	Assessment Team Conclusion
CL1 Green Collar is requested to clarify if text is missing from the last dot point sentence "*Baseline scenario, project scenario and project case cannot include wetland or peatland; and*" on page 8 of Methodology /1/.	Updated. The sentence was supposed to end in a full stop not "; and".	Methodology developer's response is sufficient. **CL1 is closed**
CL2 GreenCollar is requested to clarify how project proponents will demonstrate legal permissibility for timber harvest in the project area in the following section of the Methodology /1/: - P.10 Step 0, paragraph 5	The legal right to harvest varies greatly between countries; therefore the methodology has not been prescriptive about what documents are required to prove this, just what must be included within those documents in order for a validator to determine if the legal right to harvest exists. The methodology provides guidelines on what is the minimum acceptable information needed to demonstrate legal permissibility to harvest.	Methodology developer's response is sufficient. **CL2 is closed**
CL3 Green Collar is requested to clarify if the baseline is built on the historical management of the baseline agent and to clarify how the project proponents will prove that the timber harvest plan was not prepared solely to get carbon finance.	Added text to Step 2.2 to clarify differences between Historical Baseline or Common Practice Baseline "A Historical Baseline Scenario (Step 2.2.1) must be used where data is available, otherwise a Common Practice Baseline Scenario (Step 2.2.2) shall be used."	The Methodology now provides a distinction between the two approaches to modelling the baseline scenario. **CL3 is closed**
CL4 Section (c) of timber harvest plan in Box 1 requires project proponents to "divide the	Added text *"using common practice;"* to *"divide the harvestable forest into annual operating areas (referred*	The Methodology now provides guidance on the criteria to for dividing harvestable forest into annual operating areas.

harvestable forest into annual operating areas (referred to throughout this methodology as *land parcels*" but does not provide guidance on how this division should be done. Green Collar is requested to clarify how the harvestable forest will be divided into annual operating areas.	*to throughout this methodology as land parcels)".*	**CL4 is closed**
CL5, CL8, CL17, CL18 VCS and CDM tools, guidelines, etc are revised or updated overtime and project proponents would be required to use the most recent versions of these VCS documents for project design and implementation. GreenCollar is requested to clarify why the methodology does not consistently require that the *most recent version* of VCS and CDM documents be used in the following sections of the Methodology /1/: - P.14 – Paragraphs 1 & 4 of *Step 2.1* ; P.17 – *Step 2.4* - P.19 – Paragraph 4 under *Step 3.1* - P.43 – *Step 7.2*, paragraph 2 - P.46 – *Step 8.5*, paragraph 3	The "most recent version" should not be referred to here, as it refers to the 2007.1 VCS program. The methodology shall have to undertake further assessment to be able to use updated versions of the VCS program. Updated text to replace *"current"* with "*most recent"* for consistency. Updated text to include "*most recent"* for consistency. Updated text to include "*most recent"* for consistency. Updated text to include "*most recent"* for consistency.	The Methodology now requires consistently that the most recent version of VCS and CDM documents be used. **CL5, CL8, CL17, CL18 are closed**
CL6	The VCS makes it clear leakage shall only be calculated	Methodology developer's response is sufficient.

GreenCollar is requested to clarify inclusion of the sentence "***Following the VCS definition of market leakage the geographic boundaries for leakage from market effects are those of the country in which the project area occurs***" in this section (P.11 – Last Paragraph of *Step 1.1* of the methodology /1/).	and addressed for any leakage that occurs within the country, and not leakage that happens outside those boarders. *e.g.* A project in Australia must only account for leakage that occurs within Australia as a result of the project, and not New Zealand.	**CL6 is closed**
CL7, CL15 GreenCollar is requested to clarify which VCS documents are being referred to in the following sections of the Methodology /1/: - P.11 – *Step 1.2.1* Paragraph 1 Line 2; Last Paragraph of *Step 1.2.2* - P.38 – *Step 5.1*, Paragraph 5	Updated text to include reference to VCS AFOLU Guidance Document (http://www.v-c-s.org/docs/Guidance%20for%20AFOLU%20Projects.pdf) Updated text to include reference to VCS AFOLU Guidance Document (http://www.v-c-s.org/docs/Guidance%20for%20AFOLU%20Projects.pdf) Updated text to include reference to VCS AFOLU Guidance Document (http://www.v-c-s.org/docs/Guidance%20for%20AFOLU%20Projects.pdf)	The documents being referred to are now referenced. **CL 7 and CL15 are closed**
CL 9 The sentence "*The net carbon stock change…must be converted to net greenhouse gas emissions and is calculated as*:" is not consistent with Equation (12) which converts the net carbon stock change to tCO_2e. GreenCollar is requested to clarify this inconsistence on P.27 – first paragraph after Equation (11) of the Methodology /1/.	GCS believes this text is correct, as the equation is converting the net carbon stock change in the baseline scenario ($\Delta C_{NET\|BSL}$) into the net greenhouse gas emissions, CO_2e ($GHG_{NET\|BSL}$).	Methodology developer's response is sufficient. **CL 9 is closed**
CL 10		

GreenCollar is requested to clarify the inconsistence in the use of terminology for net GHG emission reductions on P.41, *Step 6*, Paragraph 1of /1/. The heading of Step 6 refers to "Net project Greenhouse Gas Emission Reductions". However, paragraph 1 below this heading talks about estimation of net GHG emissions resulting at the end of each year.	Added "emission reductions" to be consistent with heading.	There is now consistence in the use of terminology. **CL 10 is closed**
CL 11 GreenCollar is requested to clarify usage of the word 'across' in parameter definitions on P.41, *Step 6*, Equation (24) of the Methodology /1/.	This was incorrect and across has been removed.	Removal of the word 'across' from parameter definitions provides more clarity in parameter definitions. **CL 11 is closed**
CL 12 Step 4.2.1.2 refers to non-fire natural disturbance. Paragraph 3 of Step 4.2.1.2 refers to fires disturbance occurring *ex post*. GreenCollar is requested to clarify this discrepancy on P.33 – *Step 4.2.1.2*, paragraph 3 of the Methodology /1/.	Updated text to "Where non-fire natural disturbances occur *ex post* in the project area, the area disturbed shall be delineated."	Methodology developer's response is sufficient. **CL 12 is closed**
CL 13 The Methodology uses inventory method and applying the expansion factor to estimate carbon stocks in the baseline scenario. In the project scenario, the change in carbon stock is	Volume estimates for both equations are based on the same underlying values of DBH and height. Significant variation between the two equations estimation of volume would not exist. This is shown as the CDM tool for estimation allows proponents to pick either method when calculating aboveground biomass, as either method will	Methodology developer's response is sufficient. **CL 13 is closed**

estimated through regrowth and applying allometric equation. Green Collar is requested to clarify how the carbon stock estimates from two different accounting methods are comparable.	not produce a significantly different result to the other, due to the underlying values of DBH and height. The difference in modelling methods is simply based on availability of expansion factors/allometric equations, and allows proponents options.	
CL 14 Green Collar is requested to amend Equation (17) so that $\Delta C_{DIST\_FR,t\|PRJ}$ is in tCO_2e as defined in the parameter list.	In the old equation the output of the equation was tonnes of CH_4. GCS has added global warming potential to the equation, which converts CH_4 to CO_2e, by multiplying by 21. E.g. every tonne of CH_4 is the equivalent of 21 tonnes of CO_2, hence the equation is now correct.	Equation (17) now converts CH_4 to CO_2e. **CL 14 is closed**
CL 16 GreenCollar is requested to clarify how project proponents will calculate an area weighted final value for LF_{ME} in the following section of the Methodology /1/: - P.40 – *Step 5.2*, last sentence in Box 2	Added the text: The area of stratum *i* as a proportion of the total project area shall be multiplied by LF_{ME}. All values are then summed to arrive at the area weighted final value of LF_{ME}.	The Methodology now provides guidance to calculate an area weighted final value for $LF_{ME.}$ **CL 16 is closed**
CL 17 GreenCollar is requested to clarify that only the parcels that would be harvested in the baseline within the crediting period shall be considered in the calculations by making a change to this sentence: "Therefore, net change in carbon stock across all parcels in	GCS has added "*all parcels harvested within the crediting period*" on page 27, and updated the parcels parameter on page 28 to include *"harvested within the crediting period"*	The Methodology now provides clarity regarding the harvested parcels. **CL 17 is closed**

the baseline scenario since the start of the project activity is calculated as" in Step 3.5.		
GRAMMATICAL ERRORS GreenCollar is requested to correct grammatical mishaps in the following sections of the Methodology /1/: - P.19 – Paragraph 4 under *Step 3.1* - P.20 – Equation (2) definition of parameter A_{sp}, - P.35 – Paragraph 9, last sentence - P.46 – *Step 8.5*, paragraph 5	GCS has updated the document to correct these errors.	Methodology developer's response is sufficient.