METHODOLOGY ELEMENT ASSESSMENT REPORT TITLE

Document Prepared By Rainforest Alliance

Methodology Element Title	Carbon Accounting for Grouped Mosiac and Landscape-scale REDD Projects
Version	14.0
Methodology Element Category	Methodology Revision
Sectoral Scope(s)	AFOLU
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Methodology Assessment Dates:	Third Assessment: 19-27 Mar, 11-12 Jun 2012 Second Assessment: 20 Oct - 12 Nov 2011 First Assessment: 13-21 Jun 2011
Lead Auditor:	Adam Gibbon
Audit Team Member(s):	Manuel Estrada Jared Nunery
Senior Internal Reviewer	Jeffrey Hayward**
Audit Standard:	*VCS Version 3*
Methodology Version:	14.0
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*Report Reconciliation completed on 23 September 2013
**Reconciliation conducted by Campbell Moore, Internal Review by Lawson Henderson

Summary:

Methodology Description:

This methodology provides procedures for quantifying emission reductions and/or removals from activities aimed at reducing unplanned anthropogenic deforestation and forest degradation of the mosaic configuration. The methodology may be combined with Improved Forest Management (IFM) and Afforestation, Reforestation and Revegetation (ARR) methodologies to implement a landscape-scale Reduced Emissions from Deforestation and Forest Degradation (REDD) project that addresses land and resource needs of communities in a holistic way. Emission reductions/removals from REDD activities are calculated by taking the difference between, on the one hand, *ex-post* monitored changes in carbon stocks in the project areas, and on the other hand *ex-ante* changes in baseline carbon stocks, *ex-post* monitored emissions from leakage, and *ex-post* monitored emission sources. Baseline emissions from unplanned deforestation and degradation in the project area are calculated based on historical deforestation or forest degradation rates in a reference region that is similar to the project area.

Under this methodology, new project activity instances referred to as discrete project parcels can be added after the start of the project as per Verified Carbon Standard (VCS) requirements on project grouping.

The main elements of the methodology are:

- Net emission reductions (NERs) from avoided deforestation and avoided forest degradation are treated separately. When changes in forest biomass cannot be measured with sufficient accuracy, emissions reduction/removals from avoided forest degradation must be excluded.
- The quantification of baseline deforestation/degradation rates is based on field-calibrated remote sensing analyses over a historical reference period. More specifically, the baseline rates of deforestation and degradation are quantified by classifying the discrete land cover classes, or forest strata, and analyzing transitions from one class or stratum to a different class or stratum over time.
- Leakage is monitored and quantified using a leakage belt approach for geographically constrained drivers, and a factor approach for geographically unconstrained drivers. Market-effect leakage must be

accounted for each project, according to the rules set forward within the VCS rules.

- Increases in forest cover through natural regeneration must be included in both the baseline and project scenarios. This is achieved by applying the empirically observed baseline regeneration rates in the reference region to the project and baseline scenarios. In other words, the baseline scenario includes both projected degradation and deforestation, but also projected regeneration and reforestation in areas that were deforested. Similarly, the project scenario must include all forest class transitions, whether they are positive or negative.
- This methodology allows silvicultural activities and enrichment planting activities within degraded parts of the forests to accelerate the natural regeneration, promote forest regeneration, and provide opportunities for local employment. The accounting of these activities is simply based on a measured increase in biomass in the area in which such activities were executed.
- Projects with more accurate monitoring and verification are rewarded through a deduction mechanism based on the empirically observed accuracy. The accuracy is quantified based on (1) accuracy of remote sensing classification, and (2) the variance of biomass stock density.
- *Ex-ante,* the relative reduction in deforestation rates inside the project area is calculated by estimating the expected effect of a project activity on each driver. The simple spatial model calibrated previously is then used to divide the total deforestation and forest degradation rates in the project scenario into forest-strata specific rates. Subsequently, emission sources from project activities are calculated.
- Procedures to monitor and account for secondary emissions from increased rice production and intensification of livestock management are included in the methodology.

The methodology was evaluated against the VCS Version 3 Program and Standard.

Assessment Conclusion

Following the second assessment approval of the methodology by DNV, Rainforest Alliance conducted a Reconciliation Review of the new approved version of the methodology (v14) and found no nonconformances. The methodology is determined to be in conformance with the VCS Program and Standard as of 23 September 2013.

Assessment Purpose and Scope:

The proposed methodology revision was evaluated by the Rainforest Alliance over three different evaluations which produced three assessment reports. The results from the first two assessment reports concluded that the proposed revision to VM0006 was not in conformance with the VCS Version 3. Following the issuance of the Second Assessment report, the methodology developer further revised the proposed revised methodology to

address outstanding NCRs. Following the review of revised documentation submitted to Rainforest Alliance on 29 May 2012, which included version 5.0 of the proposed methodology revision, the audit team has found the methodology to be in full conformance with the VCS standard. Below are summaries from each of the three assessment reports.

Summary from Third Assessment Report

The methodology underwent numerous revisions in responses to the NCRs raised in the previous report. During this process, the audit team held two meetings with the methodology developer which resulted in the revision of v4.0 and subsequently version 4.1 of the methodology. Following the second meeting, on 29 May 2012 the methodology developer revised v4.1 of the methodology to produce v5.0 and provided additional clarification on all open NCRs. The revised methodology and additional clarification provided by the methodology develoepr was found to fully address those NCRs that remained open from the November 2011 assessment.

Summary from Second Assessment Report

The methodology underwent numerous revisions in responses to the NCRs raised in the draft report. As a result of the changes 10 NCRs were closed, however 11 of the NCRs remain open and 4 new NCRs have been raised. The most significant remaining issues are the lack of clarity around the crediting from Assisted Natural Regeneration (ANR) activities. In addition, the section on adding additional activities was found to be unnecessary and not in conformance with VCS rules. The section on cookstove credits has been revised, but has small errors, and the auditors have not received confirmation from the VCS that crediting for such activities is allowable under AFOLU rules.

Summary from First Assessment Report

The methodology submitted for assessment was a "modification" to the methodology VM0006 which has already been approved to VCS v2007.1. The auditors found that whilst changes had been made to incorporate grouped projects were minor, and in most cases, would have been covered by a grouped PD since the VCS's project grouping rules occur in the Project sections of the standard. The Developers have not adequately demonstrated that this is a new methodology as per VCS rules. The audit found that the majority of the Methodology was well written, and provided detailed guidance on how to execute the steps required. However, the inclusion of direct crediting from a CDM Gold Cookstove Methodology was not well integrated into the methodology. It was also not clear that the credits generated from ANR activities were for long term additional sequestration of carbon. Whilst the sections on estimating baselines and project emissions in themselves tended to be clear, it was unclear how these all tied together to generate ex-ante net emissions reductions, and ex-post VCU calculations.

The reason for this was a lack of cross referencing between parameters and equations and also because of a relative lack of structure to the methodology within the monitoring section. The lack of results tables and/or graphs also made understanding difficult; however the boxes which summarised PD reporting were a novel and useful inclusion. The methodology did not appear to have been updated to meet V3 of the VCS standard, referencing 2007.1 material and rules that are now outdated. The methodology also contains numerous typos, equation and referencing errors that hindered understanding.

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1 INTRODUCTION

1.1 Objective

Rainforest Alliance certification and auditing services are managed and implemented within its RA-Cert Division. All related personnel responsible for audit design, evaluation, and certification/verification/validation decisions are under the purview of the RA-Cert Division, hereafter referred to as Rainforest Alliance or RA. Rainforest Alliance is an ANSI ISO 14065:2007 accredited validation and verification body; additionally, Rainforest Alliance is a member of the Climate, Community, and Biodiversity Alliance (CCBA) standards, and an approved verification body with a number of other forest carbon project standards. For a complete list of the services provided by the Rainforest Alliance, see http://www.rainforest-alliance.org/climate.cfm?id=international_standards.

Dispute resolution: If Rainforest Alliance clients encounter organizations or individuals having concerns or comments about Rainforest Alliance and our services, these parties are strongly encouraged to contact the local Rainforest Alliance regional office or the RA-Cert Division headquarters directly. Formal complaints or concerns should be sent in writing.

1.2 Scope and Criteria

Scope: The assessment of a new methodology will evaluate whether or not the methodology has been prepared consistent with the guidance provided by the VCS Program, including Section 3 (project level requirements) and Section 4 (methodologies) of the VCS Standard Version 3.

The scope of this assessment includes, as a minimum:

1. Applicability conditions: Assessment of whether the proposed methodology's applicability conditions are appropriate, adequate and in compliance with the VCS rules.
2. 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 GHGs included.
3. Procedure for determining the baseline scenario: Assessment of whether the approach for determining the baseline scenario is appropriate, adequate and in compliance with the VCS rules.
4. Procedure for demonstrating additionality: Assessment of whether the approach/tools for determining whether the project is additional are appropriate, adequate and in compliance with the VCS rules.
5. Baseline emissions: Assessment of whether the approach for calculating baseline emissions is appropriate, adequate and in compliance with the VCS rules.

6. Project emissions: Assessment of whether the approach for calculating project emissions is appropriate, adequate and in compliance with the VCS rules.
7. Leakage: Assessment of whether the approach for calculating leakage is appropriate, adequate and in compliance with the VCS rules.
8. Quantification of net GHG emission reductions and/or removals: Assessment of whether the approach for calculating the net GHG benefit of the project is appropriate, adequate and in compliance with the VCS rules.
9. Monitoring: Assessment of whether the monitoring approach is appropriate, adequate and in compliance with the VCS rules.
10. Data and parameters: Assessment of whether the specification for monitored and not monitored data and parameters is appropriate, adequate and in compliance with the VCS rules.
11. Adherence to the project principles of the VCS Program: Assessment of whether the methodology adheres to the VCS Program principles set out in the *VCS Standard*.
12. Relationship to approved or pending methodologies: Assessment of whether any existing methodology could reasonably be revised to serve the same purpose as the proposed methodology, determined in accordance with Section 5.2 of the VCS Methodology Approval process Version 3.
13. Public Review: Under the double approval process, new methodologies must be posted for public comment prior to the first assessment. Any comments made during this process will be reported here and addressed.

The methodology will be assessed against these thirteen criteria, in addition to those criteria required by the VCS Standard v3. Criteria one through twelve are outlined in the VCS Methodology Approval Process Version 3, and criterion 13 is an additional criteria required by the VCS Standard as part of the Double Approval Process. The following project level principles, based upon ISO 14064-2:2006, from Section 2.4 of the VCS Standard Version 3, were the principles considered in evaluating the methodology against the checklist criteria:

i. Relevance: Select the GHG sources, GHG sinks, GHG reservoirs, data and methodologies appropriate to the needs of the intended user.
ii. Completeness: Include all relevant GHG emissions and removals. Include all relevant information to support criteria and procedures.
iii. Consistency: Enable meaningful comparisons in GHG-related information.
iv. Accuracy: Reduce bias and uncertainties as far as is practical.
v. Transparency: Disclose sufficient and appropriate GHG-related information to allow intended users to make decisions with reasonable confidence; and
vi. Conservativeness: Use conservative assumptions, values and procedures to ensure that GHG emission reductions or removal enhancements are not overestimated

Standard criteria: Criteria from the following documents were used to assess this project:

- Verified Carbon Standard Program Guide Version 3;
- Verified Carbon Standard Version 3;

- Verified Carbon Standard Agriculture, Forestry and Other Land Use (AFOLU) Requirements Version 3;
- Verified Carbon Standard AFOLU Non-Permanence Risk Tool Version 3;
- Verified Carbon Standard Methodology Approval Process Version 3;
- Verified Carbon Standard Program Updates (please see VCS website for the latest updates); and as applicable,
- The VCS approved methodology/modules used by the project.

1.3 Summary Description of the Methodology Element

This methodology provides procedures for quantifying emission reductions and/or removals from activities aimed at reducing unplanned anthropogenic deforestation and forest degradation of the mosaic configuration. The methodology may be combined with Improved Forest Management (IFM) and Afforestation, Reforestation and Revegetation (ARR) methodologies to implement a landscape-scale Reduced Emissions from Deforestation and Forest Degradation (REDD) project that addresses land and resource needs of communities in a holistic way. Emission reductions/removals from REDD activities are calculated by taking the difference between, on the one hand, *ex-post* monitored changes in carbon stocks in the project areas, and on the other hand *ex-ante* changes in baseline carbon stocks, *ex-post* monitored emissions from leakage, and *ex-post* monitored emission sources. Baseline emissions from unplanned deforestation and degradation in the project area are calculated based on historical deforestation or forest degradation rates in a reference region that is similar to the project area.

Under this methodology, new project activity instances referred to as discrete project parcels can be added after the start of the project as per Verified Carbon Standard (VCS) requirements on project grouping.

The main elements of the methodology are:

- Net emission reductions (NERs) from avoided deforestation and avoided forest degradation are treated separately. When changes in forest biomass cannot be measured with sufficient accuracy, emission reduction/removals from avoided forest degradation must be excluded.
- The quantification of baseline deforestation/degradation rates is based on field-calibrated remote sensing analyses over a historical reference period. More specifically, the baseline rates of deforestation and degradation are quantified by classifying the discrete land cover classes, or forest strata, and analyzing transitions from one class or stratum to a different class or stratum over time.
- Leakage is monitored and quantified using a leakage belt approach for geographically constrained drivers, and a factor approach for geographically unconstrained drivers. Market-effect leakage must be accounted for each project, according to the rules set forward within the VCS rules.
- Increases in forest cover through natural regeneration must be included in both the baseline and project scenarios. This is achieved by applying the empirically observed baseline regeneration rates in the reference region to the project and baseline scenarios. In other

words, the baseline scenario includes both projected degradation and deforestation, but also projected regeneration and reforestation in areas that were deforested. Similarly, the project scenario must include all forest class transitions, whether they are positive or negative.

- This methodology allows silvicultural activities and enrichment planting activities within degraded parts of the forests to accelerate the natural regeneration, promote forest regeneration, and provide opportunities for local employment. The accounting of these activities is simply based on a measured increase in biomass in the area in which such activities were executed.
- Projects with more accurate monitoring and verification are rewarded through a deduction mechanism based on the empirically observed accuracy. The accuracy is quantified based on (1) accuracy of remote sensing classification, and (2) the variance of biomass stock density.
- *Ex-ante,* the relative reduction in deforestation rates inside the project area is calculated by estimating the expected effect of a project activity on each driver. The simple spatial model calibrated previously is then used to divide the total deforestation and forest degradation rates in the project scenario into forest-strata specific rates. Subsequently, emission sources from project activities are calculated.
- Procedures to monitor and account for secondary emissions from increased rice production and intensification of livestock management are included in the methodology.

2 ASSESSMENT APPROACH

2.1 Method and Criteria

2.1.1 Audit Team

Overview of roles and responsibilities for *Third Assessment of the review by RA, the First Assessor*:

Auditor(s)	Responsibilities							
	Lead	Desk Review	On-site visit	Climate Specialist	Biodiversity Specialist	Social Specialist	Report	Senior Internal Review
Adam Gibbon	x	x	NA	x	NA	NA	x	
Jared Nunery		x	NA	x	NA	NA	x	
Jeffrey Hayward			NA		NA	NA		x

Overview of roles and responsibilities for *Second and First Assessment*:

Auditor(s)	Responsibilities							
	Lead	**Desk Review**	**On-site visit**	**Climate Specialist**	**Biodiversity Specialist**	**Social Specialist**	**Report**	**Senior Internal Review**
Adam Gibbon	x	x	NA	x	NA	NA	x	
Manuel Estrada		x	NA	x	NA	NA	x	
Jared Nunery			NA		NA	NA		x

Auditor qualifications:

Auditor(s)	Qualifications
Adam Gibbon, Lead Auditor *Participated in:* Third Assessment Second Assessment First Assessment	Adam's role as Technical Specialist in Rainforest Alliance's Climate Program involves being a lead auditor for REDD+ projects and methodologies in the voluntary carbon market, providing training on REDD+ and climate change to a broad range of groups worldwide, and providing technical input into on adaptation and mitigation for agriculture and forestry projects. Adam has led the technical climate change related of over ten CCBA validations. He has also led five VCS methodology assessments, three VCS validations and one Plan Vivo verification. Adam is a qualified lead auditor for the Climate Action Reserve, has been appointed to the Plan Vivo Technical Advisory panel and is a VCS AFOLU expert in REDD. Adam has trained over 150 people in Indonesia, Nicaragua, Rwanda, Spain, UK, Vietnam in REDD+ project auditing and project development. Recipients of the training included Rainforest Alliance auditors, government officials, private consultants and NGO representatives. Adam has been the lead author of recent Rainforest Alliance publications such as, "Guidance on

	coffee carbon project development using the (CDM) simplified agroforestry methodology", and "Forest Carbon Project Feasibility Study in Quang Tri Province, Vietnam". He has also had published work peer reviewed scientific journals, for example; Gibbon *et al., 2010;* Ecosystem Carbon Storage Across the Grassland–Forest Transition in the High Andes of Manu National Park, Peru. Before joining Rainforest Alliance Adam worked at Oxford University as a researcher. His research emphasized the potential of carbon markets to finance sustainable management of forest resources. Adam earned a distinction on the Environmental Change and Management MSc. Program at Oxford University. He was awarded the Sir Walter Raleigh Scholarship at Oriel College, Oxford. He graduated with a first class degree from Durham University, with a BSc in Natural Sciences, specializing in Geology, Chemistry & Geography.
Manuel Estrada, Auditor *Participated in:* Second Assessment First Assessment	Manuel Estrada started working on climate change issues in 1996, when he was involved in the definition and establishment of an ad-hoc process for approving projects under the AIJ pilot phase, and provided technical guidance for the Mexican Delegation during the Kyoto Protocol negotiations. As Climate Change Director of the International Affairs Unit of the Ministry of Environment of Mexico, he was the lead CDM and LULUCF negotiator from COP7 (Marrakesh) to COP10 (Buenos Aires). After COP10, he continued involved in the international climate change negotiations as Advisor to the Mexican Government until COP13 (Bali) on, amongst other, CDM and Avoided Deforestation issues. He also advised the Paraguayan Delegation on REDD in 2008. He is a co-author of the "nested approach" to REDD, which is one of the mechanisms currently being discussed in the UNFCCC negotiations on this issue. As an independent consultant, he has collaborated with several regional organizations in Latin America, including CATIE, UN-ECLAC, UNEP, the North American Commission for Environmental Cooperation and the IDB, and has been involved in projects in a number of areas (going from climate policy, low carbon economies and the Gleneagles Dialogue to REDD and forestry CDM) with Energeias, DEFRA, the Organisation Nationale des Forests (ONFi), Climate Focus, CIFOR, Climate Decisions, Cambridge University, WWF and Silvestrum.

	He has also acted as consultant of TerraCarbon in many projects in the land use, land use change and forestry sector, including activities related to REDD, AR CDM, baseline methodologies in peatlands and carbon market analysis. He participated in the expert groups on Afforestation, Reforestation and Revegetation and REDD of the Voluntary Carbon Standard, currently considered one of the most reliable and innovative carbon standards in the voluntary market.
Jared Nunery Auditor, *Participated in:* Third Assessment Senior Internal Reviewer, *Participated in:* Second Assessment First Assessment	Jared has led the technical review of multiple validation assessments for the VCS. In addition he has participated in two Improved Forest Management methodological reviews for the VCS. Before joining the Rainforest Alliance, Jared worked as a member of the Carbon Dynamics Lab at the University of Vermont, where he conducted research on the effects of forest management on carbon sequestration. Jared has published multiple scientific articles on forest carbon dynamics as well as general forest ecological processes. Jared has a B.S. in Environmental Sciences from the University of Vermont and earned his M.Sc. in Forestry from the University of Vermont. Jared has extensive experience in forest stand dynamics, forest carbon dynamics, forest mensuration, GHG quantification, forest growth and yield modelling, and wildlife habitat conservation. In addition Jared is a certified lead auditor with the Climate Action Reserve for Forest and Urban Forest projects. Additionally, Jared is an IFM AFOLU Expert with the Verified Carbon Standard.
Jeffrey Hayward Senior Internal Reviewer, *Participated in:* Third Assessment	Jeff Hayward is Director, Climate Program at the Rainforest Alliance. Based in Washington, DC, he leads a global program active in carbon verification, best practices and standards for climate mitigation and adaptation, REDD+ capacity building, and facilitation of carbon forestry and agroforestry projects. He has 20 years experience working to advance sustainability in natural resource management, particularly through policy mechanisms that harness markets responsibly. For nearly six years he managed the Rainforest Alliance forest certification programs in the Asia-Pacific region from Jakarta, Indonesia. Jeff earned an Msci in forestry, (Univ. of British Columbia, Canada); and a B.A. in Latin American development with a specialization on forestry (Univ. of Washington, USA). In forest certification and carbon verification, he has conducted over 100 assessments or audits. Jeff is a registered AFOLU expert with VCS and lead verifier with Climate Action Reserve.
Campbell Moore Reconciliation Reviewer	Campbell is a tropical forestry and REDD+ expert with professional experience in Africa and Southeast Asia. He is Carbon Expert with Rainforest Alliance where he conducts audits against six forest carbon standards, supervises methodology assessments, and acts as technical expert on carbon for RA-Cert globally. Campbell has experience on both the technical and policy sides

	of REDD+. Previous professional experience includes consulting work for GIZ Philippines performing carbon stock assessments of different forest types including agroforestry and plantation systems, as well as work centered on reforestation in Sri Lanka for the Environmental Leadership and Training Initiative. He additionally has worked for Climate Focus on LULUCF policy issues. Campbell received his Master of Forestry from the Yale University School of Forestry and Environmental Studies. This period included a variety of forestry projects including developing a management plan for Connecticut forest preserve, planning timber sales in a New England hardwood forest, and designing and modeling carbon sequestration potential of agroforestry systems for the Nature Conservancy's Global Climate Team. Prior to his time at Yale, Campbell worked in The Gambia for over two years as a Peace Corps Volunteer designing and implementing a wide variety of forestry, agroforestry, and agricultural projects. In addition to his Master of Forestry degree, he holds a M.A. in Environmental Studies from St. Mary's College. Campbell is fluent in Pulaar and Wolof and has experience with Spanish.
Lawson Henderson Senior Internal Reviewer of Reconciliation	Carbon Coordinator with Rainforest Alliance. Education: B.S.F. in forest management from University of New Hampshire, 2005. Experience, Forest Management Associate with SmartWood, US Region (2008 to 2012). Chain of Custody Associate with SmartWood, US Region (2007-2008). Forest Land Surveyor for a private forest/civil engineering firm in Western Oregon for two years. Auditor on more than 20 FSC forest management and chain of custody audits and assessments. Lead auditor or auditor on 11 forest carbon projects. Project manager on over 250 forest management and chain-of-custody projects. Completed SmartWood CoC Auditor Training in April 2008, Rainforest Alliance Carbon Verification and Validation Audit Training in March 2009, and SmartWood Lead Forest Management Auditor Training in June 2009. Attended the Climate Action Reserve Lead Verifier Training for the Forest Project, and Urban Forest Project Protocol in September 2010. Completed the ISO Quality Management Systems Lead Auditor Training Course (ISO 9001) in December 2010. ARB Lead Verifier credentials obtained in October 2012. Member of the Society of American Foresters.

2.1.2 Description of the Audit Process

Location/Facility	Date(s)	Length of Audit	Auditor(s)

First Assessment: Rainforest Alliance Offices	13-21 June 2011	7 days	Adam Gibbon, Manuel Estrada
Second Assessment: Rainforest Alliance Offices	20 Oct – 12 Nov 2011	7 days	Adam Gibbon, Manuel Estrada
Third Assessment: Rainforest Alliance Offices	19-27 Mar, 11-12 Jun 2012	5 days	Adam Gibbon, Jared Nunery
Reconciliation Review, Rainforest Alliance Offices	17-19 September 2013	2 days	Campbell Moore

2.2 Document Review

The following documents were viewed as part of the Methodology Assessment

Ref	Title, Author(s), Version, Date	Electronic Filename
1	Carbon Accounting for Grouped Mosaic and Landscape-scale REDD Projects, v1.1, November 2010	VCS REDD meth - v1.1
2	Carbon Accounting for Grouped Mosaic and Landscape-scale REDD projects, v5, (First validated version by RA)	VCS REDD meth-DRAFT v5-0 Clean First Validated
3	Carbon Accounting for Grouped Mosaic and Landscape-scale REDD Projects, v11 DRAFT (Version validated by DNV)	VCS REDD meth-DRAFT v11 Second Validated
4	Carbon Accounting for Grouped Mosaic and Landscape-scale REDD Projects, v14 Clean (Version validated by RA, DNV, and reviewed by VCS)	VCS REDD meth-DRAFT v14 Clean

2.3 Interviews

The following is a list of the people interviewed as part of the audit. The interviewees included those people directly, and in some cases indirectly, involved and/or affected by the project activities.

Audit Date	Name	Title
13-18 JUNE 12	Several telephone conversations were held between the audit team, Benktesh Sharma and Steven De Gryze.	Methodology Developers
20-27 March	Several telephone conversations were held between the audit	Methodology Developers

2012	team, Benktesh Sharma and Steven De Gryze.	
11 June 2012	Clarification conversation between audit team and Benktesh Sharma	Methodology Developer
18 September 2013	Clarification telephone calls with Benktesh Sharma and Campbell Moore	Methodology Developer

2.4 Use of VCS-Approved Expert

Adam Gibbon (Lead Auditor): VCS REDD AFOLU Expert

Jeffrey Hayward (Senior Internal Reviewer): VCS REDD and IFM AFOLU Expert

2.5 Resolution of Any Material Discrepancy

ACTION TAKEN BY PROJECT PROPONENT FOLLOWING THE ISSUANCE OF THE DRAFT REPORT		Date
Additional documents submitted to audit team (additional documents listed below)	☒ Yes ☐ No ☐ N/A	17 October 11 to 09 November 11 29 May 2012
Additional stakeholder consultation conducted (evidence described below)	☐ Yes ☐ No ☒ N/A	N/A
Additional clarification provided	☒ Yes ☐ No ☐ N/A	17 October 11 22 March 2012 27 March 2012 02 April 2012
Documents revised (document revision description noted below)	☒ Yes ☐ No ☐ N/A	29 May 2012
GHG calculation revised (evidence described below)	☐ Yes ☐ No ☒ N/A	N/A

*No new material discrepancies were identified in the Reconciliation Review, conducted by Campbell Moore in September 2013.

Included in the actions taken by the Project Proponent to address NCRs was the submission of the following revised files:

Ref	Title, Author(s), Version, Date	Electronic Filename

1a.	Carbon Accounting for Grouped Mosaic and Landscape-scale REDD Projects, TGC, 2.0, 10 October 11	VCS REDD meth - v1-15 Line Numbers Equations converted to text
2a.	NCR Responses to RA on Landscape REDD Methodology, TGC, 1-0, 10 October 11	NCR Responses to RA on Landscape REDD Methodology TGC 1-0
3a.	CFE Sample, TGC, V1, 09 November 11	CFE Sample
4a.	BetaRegressionData, TGC, V1, 09 November 11	BetaRegressionData
5a.	BetaRegDemonstration.R, TGC, V1, 09 November 11	BetaRegDemonstration.R
6a.	Clarification Questions, TGC and RA, v2.5 12 November 11	Clarification Questions v2.5.doc
7a.	Carbon Accounting for Grouped Mosaic and Landscape-scale REDD Projects, TGC, 5.0, June 2012	VCS REDD meth – Draft v5.0.pdf
8a.	Clarification Questions, TGC and RA, v0.7 29 May 2012	Clarification Questions, TGC 0.7.docx
9a.	LTA Demonstration v1-0, demonstration document of LTA calculation	LTAC Demonstration v 1-0.xlsx

2.6 Internal Quality Control

Rainforest Alliance served as the First Assessor of this methodology element, with DNV serving as the Second Assessor. The RA assessment was an iterative process involving three separate assessments and a final reconciliation. Normal procedure is for two assessments (a draft report and a final report) to be produced. However, at the closure of the final report, NCRs remained open. The client contracted RA for an additional assessment (this report). Internal Quality Control procedures were exercised throughout the process consistent with RA policies and procedures. A Report Review and Approval was conducted at the close of the second assessment by Jeff Hayward. An additional Report Review and Approval was conducted again by Jeff Hayward for the third assessment. Finally, following a Reconciliation Review by Campbell Moore, a third Report Review and Approval for quality control was conducted by Lawson Henderson.

3 ASSESSMENT FINDINGS

3.1 Applicability Conditions

3.1.1 VCS Standard 4.1: VCS modular approach

Methodologies may employ a modular approach in which a framework document provides the structure of the methodology and separate modules and/or tools are used to perform specific methodological tasks. Such methodologies shall use the *VCS Methodology Template* for the framework document and the *VCS Module Template* for the modules and tools. The framework document shall clearly state how the modules and/or tools are to be used within the context of the methodology.

Findings from Review on 21 JUNE 12			
The proposed methodology does not follow a modular approach.			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	N/A		

3.1.2 VCS AFOLU Requirements 4.1.2: Use of GHG emission data

As set out in the *VCS Standard*, standards and factors used to derive GHG emissions data as well as any supporting data for baseline scenarios and additionality shall be publicly available and come from a reputable and recognized source, such as *IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidelines for Land Use, Land-Use Change and Forestry*.

Findings from Review on 21 JUNE 12			
The methodology references the IPCC factors and data and requires peer-reviewed information for the estimation of emissions.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.1.3 VCS AFOLU Requirements 4.1.2: Combining AFOLU project categories

Where a methodology combines AFOLU project categories, the methodology shall adhere to all sets of requirements pertaining to each and every project category covered, either separating activities, or where activities cannot be separated, taking a conservative approach to each requirement.

Findings from Review on 21 JUNE 12			
The methodology is a REDD methodology to be used in the prevention of unplanned mosaic deforestation. According to the methodology, it may be combined with Improved Forest Management (IFM), Afforestation, Reforestation and Revegetation (ARR) methodologies to achieve a landscape-scale Reducing Emissions from Deforestation and Forest Degradation (REDD) project that addresses land and resource needs of communities in a holistic way. The text further states that *"Provisions to do so are included in the methodology"* (page 5) and that *"To avoid "double discounting", project proponents do not have to include the GHG emission sources associated with these activities, in case the leakage prevention activities are already included in the IFM, ALM or ARR projects. However, the REDD PD must unambiguously demonstrate that these emission sources are covered under the other PDs*" (page 74). However, the methodology does not specify how to combine such project types, and the guidance set by the VCS for multiple project activities is not referenced in the document. In addition, the methodology allows credits to be earned through the introduction of improved cookstoves yet it is not clear how this is related to the VCS Avoided Unplanned Deforestation (AUD) category. The methodology considers Assisted Natural Regeneration activities, but explicitly excludes reforestation. However, throughout the methodology there are a number of direct and indirect references to reforestation activities, which causes confusion regarding if and how these are integrated into the overall carbon accounting, for instance: • Figure 1. "*Outline of the procedure to calculate all land transitions*" states "*Relative reforestation and regeneration rates*" (step B) • The table in section 11.4 explains variable *nrFNFtransitions* as the "*Number of forest/non-forest transitions among land classes or forest strata, meaning transitions in which either the "from" or the "to" class are non-forests. Section 8.2.3*". Transitions from non-forests to forests implies reforestation. In summary, whilst the methodology's scope appears to be AUD, there are ambiguities regarding the integration of other activities, the inclusion of cookstove credits and reforestation. (**NCR 01/11**)		
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 01/11**		

3.1.4 VCS Standard 4.3: Applicability conditions

The methodology shall identify the project activities to which it applies and shall establish criteria that describe the conditions under which the methodology can (and cannot, if appropriate) be applied. Any applicability conditions set out in tools or modules used by the methodology shall also apply.

Findings from Review on 21 JUNE 12

The methodology contains specific applicability conditions for its use. However, applicability condition 4 which requires "*data on past land use, land cover, and forest cover are available for at least four points in time in the reference region*" contradicts the requirements in section 8.2.1, which only ask for "*at least three*" images of forest cover during the historical reference period. (**NCR 02/11**)

VM0006 (upon which this methodology is based) had as an applicability condition that "The project areas shall not include organic soils (e.g., peat-lands), or wetlands". No such applicability is in the new methodology therefore, it is not clear if the proposed methodology applies to peatlands, since its applicability conditions do not specify it. (**NCR 02/11**)

Moreover, the audit team noted that the proposed applicability conditions section could benefit if it were synthesized to clear and simple conditions, as in its current state this section seems to contain a summary of the methodology. For example, condition 5 states, "credits must be discounted based on the accuracy of the LULC classification…." This is not an applicability condition, rather a requirement of a later step in the methodology. (**OBS 01/11**)

<u>Findings from Reconciliation (18 Sept 13):</u>
The applicability conditions have changed in the following ways:

1. A previous requirement that the project area have an average historic deforestation rate of 0.5% has been removed. There is no VCS requirement relating to this condition so it continues to be in conformance.
2. Subsistence farming has been defined more clearly. This is in conformance.
3. Several applicability conditions have been added relating to ANR activities (which are optional) since the v5 methodology. These applicability conditions are deemed appropriate by the assessment team and make the methodology more robust by explicitly stating requirements that were only implicitly defined in v5 or were requirements in the baseline section of the methodology rather than applicability conditions. The applicability conditions prevent double counting of emissions reductions in areas predicted to be deforested in the baseline and that are subject to ANR activities. This is in conformance with the VCS.
4. Clarification is added such that ANR activities are now eligible for areas that have become deforested since the start of the project crediting period. This is in conformance.
5. Several Applicability Conditions relating to Cook Stove and Fuel Efficiency activities have been added similar to ANR activities. These conditions were initially defined in the baseline section but now have been appropriately moved to Applicability Conditions. The conditions are deemed appropriate and in conformance with the VCS
6. Several Applicability Conditions related to optional harvest activities have been added. These requirements were previously contained in the Project Emissions section of the methodology. The audit team deems it appropriate to move these to Applicability Conditions.
7. Several Applicability Conditions related to intensification of annual crop production, increase in flooded rice production, and increases in livestock stocking rates are now included in the Applicability Conditions section rather than in the Project Emissions section of the methodology. This is appropriate and in conformance.

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 02/11** **OBS 01/11**		

Assess whether and how the methodology's applicability conditions are appropriate, adequate and in compliance with the VCS rules.

3.2 Project Boundary

3.2.1 VCS AFOLU Requirements 4.2: Project eligibility

The methodology shall provide a methodological procedure for developing an AFOLU project type accepted VCS AFOLU as defined in section 4.2 of the VCS AFOLU Requirements Version 3.

I. Afforestation, Reforestation and Revegetation (ARR – Section 4.2.1)
II. Agricultural Land Management (ALM – Section 4.2.2)
III. Improved Forest Management (IFM – Sections 4.2.3 and 4.2.4)
IV. Reduced Emissions from Deforestation and Degradation (REDD – Sections 4.2.5 – 4.2.9)
V. Peatland Rewetting and Conservation (PRC Sections 4.2.10 – 4.2.13)

Findings from Review on 21 JUNE 12			
The REDD requirements apply to this methodology. 4.2.5 The methodology complies with criteria 4.2.5 by: • Requiring the project area to meet the definition of "forest" adopted by the Host Country for the CDM or the FAO definition • Requiring the project area to have qualified as forest at least 10 years before the project start date. 4.2.6 – 4.2.8 Not relevant. 4.2.9 The methodology, in section 2, states that it "*sets out the project conditions and carbon accounting procedures for activities aimed at reducing unplanned anthropogenic deforestation and forest degradation of the mosaic type*". However, in the list of drivers in section 4.3 it is not clear that some of these are unplanned (for example 4.3.4 – logging of timber for commercial scale). In addition, in section 8.3.3 the final bullet point gives an example of timber concessions that may be granted when discussing leakage. It is therefore not clear that the methodology is only intended for unplanned deforestation. (**NCR 03/11**)			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 03/11**		

3.2.2 VCS Standard 4.4: Project boundary

The methodology shall establish criteria and procedures for describing the project boundary. (Use this section for recording findings relevant to the procedures for defining spatial boundaries).

Findings from Review on 21 JUNE 12			
Section 5.3 identifies three spatial boundaries: the project area, the reference region and the leakage belt, which are defined in section 3. However, whilst section 5.3 states that "*After the start of the project, the reference region **may** not contain the project area and leakage belt*", section 3 reads "*After the project has started (i.e. during the crediting period) the reference region **excludes** the project and leakage areas*", and section 8.1.2 states that "*a stratified regional baseline (Sathaye and Andrasko, 2007) must be developed in a reference region **around** the project area*", and also that "*Note that before the project start date, i.e. during the historical reference period, the reference region **must** include the project and leakage areas. (…) However, after project start, the reference region **may** not include the project and leakage areas anymore*" (emphasis in bold added by the auditors). These differences in language could lead to confusion regarding when the project area shall be considered within the reference region. (**NCR 04/11**) Also, section 5.3 fixes the size of the reference region at 250,000 ha (this figure is exclusive of the project area and leakage areas) regardless of the size of the project area without providing any evidence to justify this figure. (**NCR 04/11**) Moreover, the methodology states that "*The boundaries of the reference region must coincide with natural, geopolitical or watershed boundaries. However, in case the project area shares a border with a natural, geopolitical or watershed boundary, the boundary of the reference region may be extended outwards by applying a buffer around the project area*". This provision was found to require a number of clarifications (**NCR 04/11**): • How is a natural boundary defined? • How are natural and watershed boundaries relevant to the definition of the RR (and representative of the PA)? • How can it be ensured that applying these natural and watershed boundaries will lead to conservative baseline estimations? • How are the size and boundaries of the proposed buffer determined? <u>Findings from Reconciliation (18 Sept 13):</u> Changes include: 1. A specific requirement that spatial boundaries be provided in KML file or any other file type required by VCS. This is in conformance with VCS Standard 3.10.1. 2. A specific requirement is included that the spatial boundaries of the JNR area the project is nested within (if it is within a jurisdictional program) shall be provided in the PD. This is accurate and appropriate.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 04/11**		

3.2.3 VCS Standard 4.4: GHG SSRs

I. In identifying GHG sources, sinks and reservoirs relevant to the project, the methodology shall set out criteria and procedures for identifying and assessing GHG sources, sinks and reservoirs that are controlled by the project proponent, related to the project or affected by the project (i.e., leakage).

II. In identifying GHG sources, sinks and reservoirs relevant to the baseline scenario, the methodology shall:
   a. Set out criteria and procedures used for identifying the GHG sources, sinks and reservoirs relevant for the project.
   b. Where necessary, explain and apply additional criteria for identifying relevant baseline GHG sources, sinks and reservoirs.
   c. Compare the GHG sources, sinks and reservoirs identified for the project with those identified in the baseline scenario, to ensure equivalency and consistency.

Findings from Review on 21 JUNE 12
The methodology identifies the GHG and sources relevant to the project in Table 1, which also indicates which of them must be included (or not) in the project and baseline estimations and provides a justification for this inclusion. Regarding the project emissions/sources, the Table was found to be consistent with VCS requirements. However, it was found that this table was not consistent with text in section 2 stating that "*All changes in GHG emissions that are not related to carbon pools and that are directly attributable to project activities, must be recorded. These include fuel CO_2 emissions due to patrolling of the forest*". It must be noted that CO_2 emissions from patrolling in the project case are considered insignificant by the VCS AFOLU requirements (see section 3.4 of this report). (**NCR 05/11**) Baseline GHG and emission sources are also identified and justified in Table 1. The table states that CH_4 emissions from deforestation and forest degradation are significant when fire is used to clear the land, however, later, in section 8.4.5 it is stated that, "Since N_2O and CH_4 emissions from forest fires increase emissions, they can be conservatively omitted for baseline calculations". The methodology is thus not internally consistent in its treatment of this source. (**NCR 05/11**) The title of Table 1 is "*GHG emissions from sources not related to changes in carbon pools ("emission sources") to be included in the GHG assessment*"; nevertheless, the table contains emissions of CO_2 from deforestation and forest degradation and considers them "*significant*". However, the bulk of carbon emissions from REDD projects arise from carbon stock changes and not in the form of CO_2 emissions from sources. (**NCR 05/11**) <u>Findings from Reconciliation (18 Sept 13):</u> Changes include: Several changes have been made to Table 1, in which GHG emissions from sources not related to changes in carbon pools are identified as to their inclusion. 1. CO2, CH4, and N20 in the baseline are now considered optional for inclusion rather than excluded. This change is as a result of the inclusion of Cookstove and Fuel Efficiency (CFE) activities. This is appropriate 2. GHG requirements for CFE activities, biomass burning, and fossil fuel usage in the project scenario are now included. This enables a more complete and accurate accounting of GHGs and is considered appropriate. 3. GHG requirements pertaining to ANR activities that include removal or burning of woody biomass during ANR activities are included.

This is appropriate.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 05/11**		

3.2.4 VCS AFOLU Requirements 4.3.1: Carbon pools

The relevant carbon pools for AFOLU project categories are aboveground tree biomass (or aboveground woody biomass in ARR and ALM projects), aboveground non-tree biomass (aboveground non-woody biomass in ARR and ALM projects), belowground biomass, litter, dead wood, soil (including peat) and wood products. Methodologies shall include the relevant carbon pools set out in Table 2 of section 4.3.1 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12			
Section 5.2 summarises the carbon pools that must be included in projects following this methodology. The identification of the carbon pools that must be included was found to be in line with VCS requirements. <u>Findings from Reconciliation (18 Sept 13) (18 September 13):</u> Changes include: 1. Aboveground non-tree biomass is now optional rather than mandatorily included. It shall be included when the baseline land cover is perennial tree crops, and is optional when the baseline land cover is annual crops or pasture. This is appropriate. 2. Belowground biomass and dead wood may be optionally omitted. Exclusion of these pools is conservative under the assumption that these pools would be larger in the project scenario.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.2.5 VCS AFOLU Requirements 4.3.3: De minimis carbon pools

Specific carbon pools and GHG sources, including carbon pools and GHG sources that cause project and leakage emissions, may be deemed *de minimis* and do not have to be accounted for if together the omitted decrease in carbon stocks (in carbon pools) or increase in GHG emissions (from GHG sources) amounts to less than five percent of the total GHG benefit generated by the project. The methodology shall establish the criteria and procedures by which a pool or GHG source may be determined to be *de minimis*. For example, peer reviewed literature or the CDM A/R methodological tool *Tool for testing significance of GHG emissions in A/R CDM project activities* may be used to determine whether decreases in carbon pools and increases in GHG emissions are *de minimis*. the project description, including identified GHG sources, sinks and reservoirs;

Further, the following GHG sources may be deemed *de minimis* and need not be accounted for:

I. ARR, IFM and REDD: N_2O emissions from project activities that apply nitrogen containing soil amendments and N_2O emissions caused by microbial decomposition of plant materials that fix nitrogen. ALM projects that apply nitrogen fertilizer and/or manure or plant nitrogen fixing species shall account for N_2O emissions;
II. ARR, IFM, REDD and PRC: GHG emissions from the removal or burning of herbaceous vegetation and collection of non-renewable wood sources for fencing of the project area; and,
III. ARR, IFM, REDD and PRC: Fossil fuel combustion from transport and machinery use in project activities. Where machinery use for selective harvesting activities may be significant in IFM project activities as compared to the baseline, emissions shall be accounted for if above *de minimis.*

Findings from Review on 21 JUNE 12			
The methodology (section 5.1) requires the application of the CDM "*Tool for testing significance of GHG emissions*" to identify insignificant emission sources and carbon pools that may be excluded. Additionally, GHG emissions from fertilizer used during enrichment planting for assisting natural regeneration in the project scenario are considered negligible and not accounted for (Table 1). This was found to be in compliance with VCS AFOLU Requirements. However, as mentioned in section 3.2 of this report, the methodology, in its section 2, requires accounting for CO2 emissions from patrolling in the project case, whilst these emissions are considered insignificant by the VCS AFOLU requirements.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.2.6 VCS AFOLU Requirements 4.3.4: Exclusion of carbon pools

Specific carbon pools and GHG sources do not have to be accounted for if their exclusion leads to conservative estimates of the total GHG emission reductions or removals generated. The methodology shall establish criteria and procedures by which a project proponent may determine a carbon pool or GHG source to be conservatively excluded. Such conservative exclusion may be determined by using tools from an approved GHG program, such as the CDM A/R methodological tool *Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected in CDM A/R project activities*, or by using peer-reviewed literature.

Findings from Review on 21 JUNE 12
The methodology allows for the conservative exclusion of the following sources and carbon pools: • Soil organic carbon may be excluded based on the result of the CDM tool "Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected" (Table 2), which is in line with the VCS guidance, since it allows the soil carbon pool to be optionally included in REDD projects where annual crops are the land cover in the baseline scenario and in all other land uses it is omitted; • N_2O emissions from burning woody biomass are assumed negligible and conservatively excluded both in the baseline and the project scenario (Table 1). This exclusion is in line with the provision in section 4.3.3 of the VCS AFOLU Requirements that deem GHG emissions from the removal or burning of herbaceous vegetation *de minimis;* • N_2O and CH_4 emissions from forest fires can be conservatively omitted for baseline calculations (section 8.4.5) • Uptake by biomass due to assisted natural regeneration changes in dead wood under the project scenario is conservatively omitted for *ex-ante* calculations (section 9.4.2.1)

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.2.7 VCS AFOLU Requirements 4.3.5: Non-CO_2 GHGs

Reductions of N_2O and/or CH_4 emissions are eligible for crediting if in the baseline scenario the project area would have been subject to livestock grazing, rice cultivation, burning and/or nitrogen fertilization.

Findings from Review on 21 JUNE 12			
The methodology does not credit reductions of N_2O or CH_4.			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	N/A		

3.2.8 VCS AFOLU Requirements 4.3.6: Methane emissions

Reductions of CH_4 emissions are eligible for crediting if fire would have been used to clear the land in the baseline scenario.

Findings from Review on 21 JUNE 12			
The methodology does not credit reductions of CH_4 emissions.			
Conformance	Yes ☐	No ☐	N/A ☒
NCR/OBS	N/A		

3.2.9 VCS AFOLU Requirements 4.3: Project specific SSRs

Project type specific guidance within the VCS AFOLU Requirements regarding the calculation of SSRs must be met.

I. ARR projects must meet additional criteria outlined in section 4.3.7 of the VCS AFOLU Requirements Version 3;
II. IFM projects must meet additional criteria outlined in sections 4.3.12 – 4.3.15 of the VCS AFOLU Requirements Version 3;
III. REDD projects must meet additional criteria outlined in sections 4.3.16 and 4.3.17 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12
VCS AFOLU Requirement VCS AFOLU Requirement 4.3.16: "Where timber removal is associated with deforestation and/or degradation in the baseline scenario, the wood product pool shall be included in the project boundary because significant quantities of carbon can be stored in wood products instead of entering the atmosphere during deforestation. The quantity of live biomass going into wood products shall be quantified if above de minimis (as set out in Section 4.3.3) or may be conservatively excluded (as set out in Section 4.3.4)". The wood product pool is included in the project boundary (Table 2), as it is considered a "*Major carbon pool affected by project activities*". *VCS AFOLU Requirement VCS AFOLU Requirement 4.3.17: "Where the baseline scenario is the conversion of forest to annual crops, additional GHG credits may be available if the soil carbon pool is included because decreases in soil carbon stocks in the baseline scenario*

can be significant." The inclusion of the soil carbon pool is optional, and may be excluded based on the result of the CDM tool "Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected" (Table 2).			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.3 Procedure for Determining the Baseline Scenario

3.3.1 VCS Standard 4.5: Baseline selection

The methodology shall establish criteria and procedures for identifying alternative baseline scenarios and determining the most plausible scenario, taking into account the following:

I. The identified GHG sources, sinks and reservoirs.
II. Existing and alternative project types, activities and technologies providing equivalent type and level of activity of products or services to the project.
III. Data availability, reliability and limitations.
IV. Other relevant information concerning present or future conditions, such as legislative, technical, economic, socio-cultural, environmental, geographic, site-specific and temporal assumptions or projections.

Findings from Review on 21 JUNE 12
The proposed methodology identifies the most plausible baseline scenario according to the CDM modalities and procedures, paragraph 22, option (a): *Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary.* This option was selected because under the mosaic typology of deforestation, the historical changes in land-use are representative for the most likely future changes in land-use. The most appropriate future scenario is that historical rates, change in rate, and dynamics of deforestation and forest degradation will continue in the future. Moreover, no new economically attractive course of action is expected in the future. This approach is applied in practice through the establishment of a reference region to estimate the rate of deforestation based on historical data, and by the identification of a number of key variables that must be compared between the reference region and project area (outlined in Table 3). In order to ensure that both areas are similar regarding drivers of deforestation, landscape configuration and socioeconomic and cultural conditions. Areas in the potential reference region where one or more of these variables differ from the project area are not eligible and must be excluded from the reference region. <u>Findings from Reconciliation (18 Sept 13):</u> Changes include:

1. The methodology has added an explicit requirement that if the project is registered under a jurisdictional REDD program, the project shall adopt the baseline of the jurisdictional REDD program in accordance with VCS JNR 3.11.14. This is in conformance. 2. Additional specific requirements pertain in Section 6.2 of the methodology when the project is included in a JNR area. These requirements follow the VCS JNR requirements.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.3.2 VCS AFOLU Requirements 4.4.1: Baseline establishment

The determination and establishment of a baseline scenario shall follow an internationally accepted GHG inventory protocol, such as the *IPCC 2006 Guidelines for National GHG Inventories*.

Findings from Review on 21 JUNE 12
The methodology complies with these requirements by: • Mandating the use AR-AM Tool 03 ("Calculation of the number of sample plots for measurements within A/R CDM project activities") to determine the number of biomass inventories required. • Recommends textbooks such as Hoover (2008) in order to define the layout of sampling plots (form, nesting, etc.). • Mandating the location of sample plots systematically with a random start based on 2003 IPCC GPG-LULUCF, or randomly within a cell of a systematic grid, based on Thompson, 2002. • Requiring project participants to summarize the sampling framework following the guidance of section 4.3.3.4 of GPG LULUCF • Requiring that the exact measurement of above-ground and below-ground tree carbon follow international standards and IPCC GPG LULUCF 2003. <u>Findings from Reconciliation (18 Sept 13):</u> Changes include: 1. Section 8.1.1.2—an explicit requirement that the project area and leakage belt be excluded ("clipped out") from the reference region after the start of the crediting period, as well as a requirement that if new instances of project areas and leakage areas are included subsequently that these also be removed from the reference region. This will promote accuracy in estimating trends in carbon stock changes within the reference region and is in conformance with the VCS. 2. Section 8.1.1.2-The requirement to create a >1km buffer between the project area boundary and the reference region boundary has been removed. This requirement did not conform to any specific VCS requirement or best practice and its removal is therefore in conformance. 3. Section 8.1.1.2-a requirement has been included that the reference region must exclude deforested areas caused by natural large-scale, extraordinary events (large geological and weather impacts). This does not relate to a VCS requirement but is highly conservative and therefore in conformance. 4. Section 8.1.1.2-the requirement that the reference region must be 15% covered in forest at the beginning of the crediting period has been amended so this requirement is not applicable when the reference region is the entire country or an entire island. The 15% threshold is not defined by any specific VCS requirement and relaxing this requirement under these conditions seems reasonable given that an area beyond the entire country or entire island would not make a credible referenc region. Further, reference regions of this scale are more likely in jurisdictional programs/JNR requirements. 5. Section 8.1.2.2-an additional requirement that the Minimum Mapping Unit should be less than 1 ha has been added. This is reasonable.

6. Section 8.1.4.2-An additional requirement has been added such that if avoided degradation credits are included a forest stratification model must be identified that is held constant for the entire baseline validity period. The model shall be based on remote sensing, radar, and LiDAR measurements as well as additional data. This follows best practice and is important to ensure accuracy of GHG reductions from avoided degradation. This is in conformance. 7. Section 8.1.3-An additional requirement has been added such that emission factors under jurisdictional programs shall be derived from the jurisdictional program. This is in conformance. 8. Section 8.1.4.4-an additional requirement is included relevant to point 6 of this section requiring that biomass measurements from inventory plots shall be assigned to the forest stratification model developed for degradation stratum. This is reasonable. 9. Section 8.1.4.3 includes several additional guidance statements for measuring forest biomass and conducting forest inventories. This additional guidance does not substantially alter and methodological requirements and provides further useful guidance. It is in conformance. 10. A minor error has been corrected in EQ34 regarding capitalization of one term in the equation. 11. Clarification has been added in section 8.1.5.4, step 5 to clarify that cells that were deforested in a given year cannot also be subject to degradation. This is logical and will decrease the chances of errors by others using the methodology. 12. Section 8.1.5.4 has added further cdlarification that the regeneration area value must be added into the modelling of LULC class transitions at the end of the process so that all classes are updated for year *t*. This is appropriate.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.3.3 VCS AFOLU Requirements 4.4: Project specific baseline requirements

The methodology must follow all project type specific requirements detailed in section 4.4 of the VCS AFOLU Requirements Version 3. Specifically,

I. ARR projects have no specific baseline scenario requirements;
II. ALM projects must meet additional criteria outlined in sections 4.4.3 and 4.4.4 of the VCS AFOLU Requirements Version 3;
III. IFM projects must meet additional criteria outlined in section 4.4.5 of the VCS AFOLU Requirements Version 3;
IV. REDD projects must meet additional criteria outlined in sections 4.4.6 and 4.4.7 and additional relevant sub-project type requirements outlined in 4.4.8 of the VCS AFOLU Requirements Version 3.
V. PRC projects must meet additional criteria outlined in sections 4.4.9 – 4.4.12 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12
4.4.6 The baseline for REDD projects is comprised of a land-use and land-cover (LU/LC) change component and a carbon stock change component. These components may be addressed separately in a methodology as their scale of analysis may differ. The baseline is comprised of an LU/LC model being derived in section 8.2 and 8.3 and 8.4. The carbon stock change component is covered by section 8.4. 4.4.7 For inclusion of the non-CO2 gases, evidence shall be provided to demonstrate that the practice for which the project plans to claim credit is not common practice in the area. The guidance in the IPCC 2003 Good Practice Guidelines for LULUCF and the IPCC 2006 Guidelines for National GHG Inventories may be used to estimate such GHG emissions.

The methodology does not credit non-CO_2 emission reductions.

4.4.8 AUDD: The criteria and procedures for identifying alternative baseline scenarios shall require the project proponent to take into account deforestation/degradation that would have occurred in the project area during the project crediting period.
a) Methodologies shall set out criteria and procedures to identify where deforestation would likely occur using spatial analysis and projections (except for certain mosaic configurations as set out in Section 4.4.8(2)(c)). Such analysis shall be based on historical factors over at least the previous 10 years that explain past patterns and can be used to make future projections of deforestation.

The quantification of deforestation and forest degradation rates under this methodology, carried out in section 8.2, requires remote sensing and other spatial data for a "historical reference period" that starts 15 years before project start. Section 8.5.3 provides guidance on how to calibrate and validate a spatial model to predict the suitability for deforestation and degradation. The output is a land-use change transition matrix for each year of the crediting period. The land-use change model incorporates the forest scarcity principle, the notion that deforestation rates decrease upon the gradual depletion of the native forest resources. Initial deforestation rates are consequently multiplied with a "forest scarcity" factor, which is initially 1, but gradually decreases as the proportion of remaining forest decreases. Equation 29 models this factor. This "scarcity factor" must be calibrated using scientific literature in an area close to the project area that has followed a more advanced deforestation route. The audit team concluded that the methodology could benefit from including default values of Sc1 and Sc2 in equation 29.(**OBS 02/11**)

Additionally, the methodology offers the option of crediting carbon stocks enhancements achieved through assisted natural regeneration activities. The extent of increase in forest cover or forest regeneration that would have happened under the baseline scenario is quantified based on historical observations in the reference region during the historical reference scenario. The historical regeneration rate is estimated in section 8.5.2. Section 8.5.4 explains how to calculate regeneration transitions, however, this step was found to be ambiguous (see section 8.1 of this report).

b) Not applicable (frontier configuration).

c) The criteria and procedures for identifying alternative baseline scenarios in the frontier and mosaic configurations shall take into account such factors as historical deforestation and/or degradation rates and require the project proponent to develop a baseline by determining and analyzing a reference area (which need not be contiguous to the project area), that shall be similar to the project area in terms of drivers and agents of deforestation and/or degradation, landscape configuration, and socio-economic and cultural conditions, noting the following.

i) Where, in the mosaic configuration, no patch of forest in project areas exceeds 1000 ha and the forest patches are surrounded by anthropogenically cleared land, or where it can be demonstrated that 25 percent or more of the perimeter of the project area is within 120 meters of land that has been anthropogenically deforested within the 10 years prior to the project start date, spatial projections to determine where in the project area deforestation is likely to occur are not required. Though not required, such spatial projections may be applied, in accordance with the methodology. Analysis of historical deforestation rates that explain past deforestation in the reference area is required and shall be applied conservatively to the project area.

The proposed methodology uses a reference region to develop the baseline – see section 5.2 of this report.
The methodology requires spatial projections in all cases.

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	**OBS 02/11**		

3.4 Procedure for Demonstrating Additionality

3.4.1 VCS Standard 4.6: Additionality

The methodology shall establish a procedure for the demonstration and assessment of additionality based upon the requirements set out in the VCS Standard Version 3 section 4.6. Note that such requirements are for methodology development, and projects shall demonstrate and assess additionality in accordance with the requirements set out in the applied methodology.

Findings from Review on 21 JUNE 12			
The proposed methodology requires the use of the most current version of the VCS "*VT0001 Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities*" to determine additionality.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.5 Baseline Emissions

3.5.1 VCS AFOLU Requirements 4.5.1: Emission quantification

Methodologies shall establish procedures to quantify the GHG emissions or removals for the project and baseline scenario. *The IPCC 2006 Guidelines for National GHG Inventories* or the *IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry* shall be used as guidance for quantifying increases or decreases in carbon stocks and GHG emissions. The IPCC Guidelines shall also be followed in terms of quality assurance/quality control (QA/QC) and uncertainty analysis.

Findings from Review on 21 JUNE 12
The methodology has its own methods for quantifying increases or decreases in carbon stocks. These methods were not found to differ from the procedures contained in Volume 4 (AFOLU), Chapter 2, section 2.3.1.2 "Land Converted To A New Land-Use Category" and 2.3.1.1 "Land Remaining In A Land-Use Category" (in the case of ANR activities) of the I 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Section 13.3, '13.3 Calculation of Ex-post GHG Emissions and Changes in Sinks under the Project Scenario inside the Project Area' has a significant amount of text on the subject of credits derived from cookstoves,

"In the case that credits from avoided degradation were excluded from the generated NERS due to the fact that forest strata cannot be detected with sufficient accuracy, credits from the introduction of fuel-efficient woodstoves may still be issued, as explained in section 9.1 under "Decrease the consumption of fuelwood". Credits must be calculated according to the approved gold standard methodology "Indicative Programme, Baseline, and Monitoring Methodology for Improved Cookstoves and Kitchen Regimes" (Currently V.02), discounted using equation [EQ46], and added to the total NERs according to [EQ91]. The factor "0.75" is to discount the credits from fuel-efficient woodstoves to remain conservative."

However, this text is not integrated with the rest of the methodology, and it is not clear how this follows IPCC or VCS guidelines. There are further potential issues with the cookstove approach that are articulated in the paragraph below (**NCR 06/11**):

The CDM Gold website (http://www.cdmgoldstandard.org/Gold-Standard-Methodologies.347.0.html) shows that the methodology referenced has increased to version 2, and will be replaced on 30 JUNE 12 by another methodology. It is not clear why this concept of credits from cookstoves is introduced only in the monitoring section and not included throughout (for example in the baseline generation section – how do you generate baseline for cookstoves?) (e.g. The cookstove option of creating credits is not mentioned in table 1) (see also section 5.3 of this report). In TUV-SUDs report on VM0006, on page 116, the methodology proponents state that, "Regular fuel-wood harvesting does not lead to more than 25% of the total deforestation within the project." It is not clear if this criteria still included, and if not, why not. In section 14, MN61 and 62 counts of fuel efficient stoves are acquired and used are required. It is not clear where these are used because it is not stated. It is not clear if this is in addition to the monitoring requirements of the cookstove methodology. It would therefore seem that section 14 is intended to cover all the requirements for cookstove credit calculation. Still in section 13.3, it is stated that a factor of"0.75" is used to discount the credits from fuel-efficient woodstoves, It is not clear what this refers to, as no such deduction could be found in the methodology. (**NCR06/11**)

<u>QA/QC and uncertainty analysis</u>

Section 15.2 describes the methodology's Conservative Approach and Uncertainties, whilst section 15.3 covers Quality Assurance and Quality Control Procedures. Neither of these sections makes reference to the IPCC Guidelines, therefore it has not transparent how the IPCC guidelines have been followed. (**NCR 06/11**).

In section 9.4.2.1 it is stated that: *"Ex-ante, values for biomass densities in ANR areas must be based on pilot projects or data on biomass increases in regenerating forests from the literature. Ex-post, this quantity must to be monitored for actual biomass according to a network of permanent sampling plots according to the procedures within this document. Select a sampling design with a precision of minimally 90%"*. VM0006 requires a minimal precision of 95% it is not clear how this change is justified. (**NCR 06/11**)

<u>Findings from Reconciliation (18 Sept 13):</u>

Changes include:

1. Section 8.2.4.3-Clarification to prevent errors in future verifications has been added to equation 74 and equation 75. This is helpful and does not create material changes.
2. Section 8.2.5.2-Further clarification has been added to describe the overarching theory of quantification of GHGs associated with

CFE activities. This clarification is helpful and does not impact conformance with VCS requirements. 3. Section 8.2.6 includes a requirement that if ANR activities have been implemented on an area historically, that if harvesting activities are planned on that area that that area shall be assessed (for GHG reductions) under the relevant section for GHG emissions from harvesting, rather than from ANR. This serves to avoid overlap in those areas and possible errors in quantification and is in conformance. 4. Section 8.2.6.3 has been amended such that fossil fuel emissions from forest harvesting activities can be considered de minimis rather than using the VCS tool for quanitification. Although it would be more conservative to account for these emissions it is considered reasonable by the audit team to neglect these emissions given that avoided emissions from deforestation and degradation will likely be substantially greater than emissions from fossil fuels from harvesting under almost any conceivable scenario.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 06/11**		

3.5.2 VCS AFOLU Requirements 4.5.2: Use of IPCC 2006 Guidelines for National GHG Inventories

The *IPCC 2006 Guidelines for National GHG Inventories* may be referenced to establish procedures for quantifying GHG emissions/removals associated with the following carbon pools including:

I. Litter;
II. Dead wood;
III. Soil (methodologies may follow the IPCC guidelines for the inclusion of soil carbon, including the guidelines that are in sections not related to forest lands); and
IV. Belowground biomass (estimated using species-dependent root-to-shoot ratios, the Mokany et al.[1] ratios and equations, or the Cairns equations).

Findings from Review on 21 JUNE 12			
Section 8.4.4 "*Measure Carbon Density Stocks*" mandates that "*the exact measurement of above-ground and below-ground tree carbon must follow international standards and follow IPCC GPG LULUCF 2003*". In section 9.4.2, The calculation of the GHG removals by sinks due to assisted natural regeneration activities is based on the CDM methodology AR-ACM0001 version 3, which follows IPCC guidance.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

[1] Mokany, K., Raison, R. J., and Prokushkin, A. S. 2006. *Critical analysis of root:shoot ratios in terrestrial biomes*. Global Change Biology 12: 84-96

3.5.3 VCS AFOLU Requirements 4.5.3: Long term average carbon stock quantification

Where ARR or IFM projects include harvesting, the loss of carbon due to harvesting shall be included in the quantification of project emissions. The maximum number of GHG credits available to projects shall not exceed the long-term average GHG benefit. The GHG benefit of a project is the difference between the project scenario and the baseline scenario of carbon stocks stored in the selected carbon pools and adjusted for any project emissions of N_2O, CH_4 and fossil-derived CO_2, and leakage emissions. The long-term average GHG benefit shall be calculated using the procedure outlined in section 4.5.3 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12			
Not applicable to REDD. <u>Findings from Reconciliation (18 Sept 13):</u> V14 of the methodology includes optional harvesting in the project area. As such the proponent has included procedures and requirements to account for the long term average carbon stock density in harvest areas. EQ79 if the methodology provides the relevant equation. This is in conformance with the VCS.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.5.4 REDD projects only

REDD projects only: Procedures for quantifying GHG emissions/removals in all selected carbon pools may reference *IPCC 2006 Guidelines for National GHG Inventories* sections on *conversion of forest to non-forest* (for deforestation) and *forests remaining as forest* (for degradation).

Findings from Review on 21 JUNE 12			
The relevant sections of the methodology do not reference the *IPCC 2006 Guidelines for National GHG Inventories* sections on *conversion of forest to non-forest* (for deforestation) and *forests remaining as forest*.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.5.5 VCS AFOLU Requirements 4.5.14: REDD projects only

REDD projects only: Procedures for quantifying GHG emissions/removals in long-lived wood products (e.g., wood products lasting longer than five years) may reference published scientific peer-reviewed literature (such as Skog et al. 2004).

Findings from Review on 21 JUNE 12
In section 11.1, the methodology calculates the proportion of wood products that have not been emitted to the atmosphere 100 years after harvest and assumes that this proportion is permanently sequestered. All factors are derived from Winjum et al. (1998).

Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

Assess whether and how the procedures for calculating baseline emissions are appropriate, adequate and in compliance with the VCS rules.

3.6 Project Emissions

3.6.1 VCS AFOLU Requirements 4.5.1: Emission quantification

Methodologies shall establish procedures to quantify the GHG emissions or removals for the project and baseline scenario. *The IPCC 2006 Guidelines for National GHG Inventories* or the *IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry* shall be used as guidance for quantifying increases or decreases in carbon stocks and GHG emissions. The IPCC Guidelines shall also be followed in terms of quality assurance/quality control (QA/QC) and uncertainty analysis.

Findings from Review on 21 JUNE 12
The methodology has its own methods for quantifying increases or decreases in carbon stocks. These methods were not found to differ from the procedures contained in Volume 4 (AFOLU), Chapter 2, section 2.3.1.2 “Land Converted To A New Land-Use Category” and 2.3.1.1 “Land Remaining In A Land-Use Category” (in the case of ANR activities) of the I 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Section 13.3, ‘13.3 Calculation of Ex-post GHG Emissions and Changes in Sinks under the Project Scenario inside the Project Area’ has a significant amount of text on the subject of credits derived from cookstoves, *“In the case that credits from avoided degradation were excluded from the generated NERS due to the fact that forest strata cannot be detected with sufficient accuracy, credits from the introduction of fuel-efficient woodstoves may still be issued, as explained in section 9.1 under “Decrease the consumption of fuelwood”. Credits must be calculated according to the approved gold standard methodology “Indicative Programme, Baseline, and Monitoring Methodology for Improved Cookstoves and Kitchen Regimes” (Currently V.02), discounted using equation [EQ46], and added to the total NERs according to [EQ91]. The factor “0.75” is to discount the credits from fuel-efficient woodstoves to remain conservative.”* However, this text is not integrated with the rest of the methodology, and it is not clear how this follows IPCC or VCS guidelines. There are further potential issues with the cookstove approach that are articulated in the paragraph below (**NCR 06/11**): The CDM Gold website (http://www.cdmgoldstandard.org/Gold-Standard-Methodologies.347.0.html) shows that the methodology referenced has increased to version 2, and will be replaced on 30 JUNE 12 by another methodology. It is not clear why this concept of credits from cookstoves is introduced only in the monitoring section and not included throughout (for example in the baseline generation section – how do you generate baseline for cookstoves?) (e.g. The cookstove option of creating credits is not mentioned in table 1) (see also section 5.3 of this

report). In TUV-SUDs report on VM0006, on page 116, the methodology proponents state that, "Regular fuel-wood harvesting does not lead to more than 25% of the total deforestation within the project." It is not clear if this criteria still included, and if not, why not. In section 14, MN61 and 62 counts of fuel efficient stoves are acquired and used are required. It is not clear where these are used because it is not stated. It is not clear if this is in addition to the monitoring requirements of the cookstove methodology. It would therefore seem that section 14 is intended to cover all the requirements for cookstove credit calculation. Still in section 13.3, it is stated that a factor of"0.75" is used to discount the credits from fuel-efficient woodstoves, It is not clear what this refers to, as no such deduction could be found in the methodology. (**NCR06/11**)

QA/QC and uncertainty analysis

Section 15.2 describes the methodology's Conservative Approach and Uncertainties, whilst section 15.3 covers Quality Assurance and Quality Control Procedures. Neither of these sections makes reference to the IPCC Guidelines, therefore it has not transparent how the IPCC guidelines have been followed. (**NCR 06/11**).

In section 9.4.2.1 it is stated that: *"Ex-ante, values for biomass densities in ANR areas must be based on pilot projects or data on biomass increases in regenerating forests from the literature. Ex-post, this quantity must to be monitored for actual biomass according to a network of permanent sampling plots according to the procedures within this document. Select a sampling design with a precision of minimally 90%*". VM0006 requires a minimal precision of 95% it is not clear how this change is justified. (**NCR 06/11**)

Findings from Reconciliation (18 Sept 13):

Changes include:

5. Section 8.2.4.3-Clarification to prevent errors in future verifications has been added to equation 74 and equation 75. This is helpful and does not create material changes.
6. Section 8.2.5.2-Further clarification has been added to describe the overarching theory of quantification of GHGs associated with CFE activities. This clarification is helpful and does not impact conformance with VCS requirements.
7. Section 8.2.6 includes a requirement that if ANR activities have been implemented on an area historically, that if harvesting activities are planned on that area that that area shall be assessed (for GHG reductions) under the relevant section for GHG emissions from harvesting, rather than from ANR. This serves to avoid overlap in those areas and possible errors in quantification and is in conformance.
8. Section 8.2.6.3 has been amended such that fossil fuel emissions from forest harvesting activities can be considered de minimis rather than using the VCS tool for quanitification. Although it would be more conservative to account for these emissions it is considered reasonable by the audit team to neglect these emissions given that avoided emissions from deforestation and degradation will likely be substantially greater than emissions from fossil fuels from harvesting under almost any conceivable scenario.

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 06/11**		

3.7 Leakage

The methodology shall contain an approach for calculating leakage that is appropriate and adequate.

3.7.1 VCS AFOLU Requirements 4.6.1: Leakage quantification

Methodologies shall establish procedures to quantify all significant sources of leakage. Leakage is defined as any increase in GHG emissions that occurs outside the project boundary (but within the same country), and is measurable and attributable to the project activities. All leakage shall be accounted for, in accordance with this Section 4.6. The three types of leakage are:

I. Market leakage occurs when projects significantly reduce the production of a commodity causing a change in the supply and market demand equilibrium that results in a shift of production elsewhere to make up for the lost supply.
II. Activity shifting leakage occurs when the actual agent of deforestation and/or degradation moves to an area outside of the project boundary and continues their deforesting activities elsewhere.
III. Ecological leakage occurs in PRC projects where a project activity causes changes in GHG emissions or fluxes of GHG emissions from ecosystems that are hydrologically connected to the project area.

Findings from Review on 21 JUNE 12
Section 10 of the methodology refers to leakage estimates ex-ante, whilst section 13.7 explains the ex-post quantification. In section 10.1 the methodologies approach to leakage is explained as follows: The methodology quantifies leakage based on the driver that is avoided. The drivers are divided between geographically constrained drivers and geographically unconstrained drivers. This division is logical. In addition it is stated, "*The procedure to quantify leakage differs between drivers that are geographically constrained and geographically unconstrained drivers (see Table 8),).* *Ex-ante activity-shifting leakage from the* ***geographically constrained drivers*** *uses a factor-approach based on rural appraisals and expert knowledge; ex-post leakage from these drivers is based on the remotely sensed deforestation/degradation rates in the leakage area.* *Ex-ante activity-shifting leakage from the* ***geographically unconstrained drivers*** *is based on a factor-approach based on rural appraisals and expert knowledge. Ex-post activity shifting leakage is based on a factor-approach using conservative assumptions*. " (Section 10.1) In all cases leakage from deforestation and degradation are treated separately, and later added. **I Market Leakage** In section 10.1 there is an assumption that market leakage will be "negligible" because the methodology, "does not allow that timber from the

project area is sold or transferred beyond the participating communities" (Section 10.1). However, the auditors cannot find any such restriction in the methodology. Applicability condition 4.3.4 is, "logging of timber for commercial scale (i.e., wood planks or poles for commercial scale)". Nothing is mentioned about the buyers of this wood. Therefore, it is not clear to what extent market leakage needs to be quantified. (**NCR 07/11**)

II Activity Shifting Leakage

Section 10.2 describes how to estimate leakage from geographically constrained drivers. The approach taken is sophisticated. It involves, for each driver, using equations to estimate how much leakage is likely, and thus deriving a leakage cancellation rate, this is then multiplied by the relative impact of the driver it is related to (Eqn 69). These factors are summed for all drivers (Eqn 69) and then multiplied by the deforestation rate in the baseline scenario (Eqn 67-68) to determine the expected leakage induced deforestation/degradation rates in any given year. The baseline deforestation in the leakage belt is calculated by using the project area's deforestation/degradation rate and scaling it based on the relative size of the leakage belt (Eqn 80-81). An estimate of the deforestation during the project scenario in the leakage belt is then made by adding the expected leaked area to the expected baseline deforested area (Eqn 82-83). Equation 93 then calculates the net leakage for use in determining the net emissions reductions of the project. This equation logic was found to be acceptable and correctly executed.

However, in the sub-sections of 10.2.1 where the leakage cancellation rates are calculated, there was found to be inadequate description in the parameters and surrounding text to clearly explain how the equations need to be completed. For example in 6, "fuelwood collection for domestic and local industrial needs it is not clear what the subscripts, "project", "baseline" and "allowed" mean, and thus it is not clear how the equation should be executed. (**NCR 07/11**)

The leakage belts themselves are demarcated using the process described in section 10.2.2 based on the mobility of the most mobile agent. This was found to be acceptable.

Section 10.3 describes how to estimate leakage from geographically unconstrained drivers. The 'leakage cancellation rate' needs to be determined through social assessments, scientific literature and reports. This is then, for each driver, multiplied by the relative driver impact. This value is then used to calculate leakage emissions by multiplying it by the area of deforestation/degradation in the project area multiplied by a national emissions factor for forests (see equation 84).

III Ecological Emissions

These are not applicable because the methodology does not have a peat component.

<u>Findings from Reconciliation (18 Sept 13):</u>

Changes include:

1. Section 8.3.1—This section has added text to clarify that market leakage is mandatorily included.
2. Section 8.3.1—clarification has been added that if the project is part of a jurisdicational REDD program that leakage shall be measured using the requirements of the jurisdictional program rather than the methodology itself. This is appropriate.
3. A section (8.3.3.4) requiring a test to determine whether CH4 emissions from small scale fires must or must not be monitored has been removed. The DNV team felt this was appropriate as a means of simplification of the methodology. The assumption this

removal is predicated on is i) that these emissions would always be insignificant (less than 5% of GHG reductions) and ii) that it is reasonable to assume that these fires would have equally been present in the baseline scenario and cannot reasonably be attributed to the project activities which focus on conserving forest biomass. The audit team agrees these assumptions are reasonable with the understanding that large scale fires will be dealt with per the VCS requirements around catastrophic events.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 07/11**		

3.7.2 VCS AFOLU Requirements 4.6.2: De minimis leakage

Leakage that is determined, in accordance with Section 4.3.3 of the VCS AFOLU Requirements Version 3, to be below *de minimis* (i.e., insignificant) does not need to be included in the GHG emissions accounting. The significance of leakage may also be determined using the CDM A/R methodological tool *Tool for testing significance of GHG Emissions in A/R CDM Project Activities*.

Findings from Review on 21 JUNE 12			
Section 10.2.4 includes a procedure for determining whether there are significant small-scale fires in the area. If not, they do not need to be monitored for leakage. This was found to be acceptable. <u>Findings from Reconciliation (18 Sept 13):</u> A section (8.3.3.4) requiring a test to determine whether CH4 emissions from small scale fires must or must not be monitored has been removed. The DNV team felt this was appropriate as a means of simplification of the methodology. The assumption this removal is predicated on is i) that these emissions would always be insignificant (less than 5% of GHG reductions) and ii) that it is reasonable to assume that these fires would have equally been present in the baseline scenario and cannot reasonably be attributed to the project activities which focus on conserving forest biomass. The audit team agrees these assumptions are reasonable with the understanding that large scale fires will be dealt with per the VCS requirements around catastrophic events.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.7.3 VCS AFOLU Requirements 4.6.3: Calculating leakage

GHG emissions from leakage may be determined either directly from monitoring, or indirectly when leakage is difficult to monitor directly but where scientific knowledge provides credible estimates of likely impacts. The GHG credit calculation table provided in Section 4.7 of the VCS AFOLU Requirements Version 3 includes an example of indirect leakage accounting.

Findings from Review on 21 JUNE 12
The leakage approach taken uses both direct and indirect approaches were necessary. Section 10.1 states the following, "*The procedure to quantify leakage differs between drivers that are geographically constrained and geographically unconstrained drivers (see* ***Error! Reference source not found.****Table 8).* *Ex-ante activity-shifting leakage from the* ***geographically constrained drivers*** *uses a factor-approach based on rural appraisals and expert knowledge; ex-post leakage from these drivers is based on the remotely sensed deforestation/degradation rates in the*

leakage area. *Ex-ante activity-shifting leakage from the* ***geographically unconstrained drivers*** *is based on a factor-approach based on rural appraisals and expert knowledge. Ex-post activity shifting leakage is based on a factor-approach using conservative assumptions*. ” (Section 10.1) This was found to be acceptable.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.7.4 VCS AFOLU Requirements 4.6.4: Market leakage

Projects shall account for market leakage where the production of a commodity (eg, timber) is significantly affected by the project. The significance of timber production is determined as set out in Section 4.3.3 of the VCS AFOLU Requirements Version 3 or as set out in Section 4.6.15 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12			
In section 10.3 it is stated that market leakage for some elements of the project area calculated using the VCS market leakage approach. However, Part 5 of equation 90, which is also equation 96, does not include this. Therefore there is no mechanism in the equations by which market leakage can be accounted for. Please also see the findings in section 7.1 above. There is inconsistency about whether or not there is likely to be any market leakage in from the allowed project activities. (**NCR 08/11**)			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 08/11**		

3.7.5 VCS AFOLU Requirements: International leakage

Leakage occurring outside the host country (international leakage) does not need to be quantified.

Findings from Review on 21 JUNE 12			
The methodology does not make any mention of national vs. international leakage. Thus it is assumed that projects will follow the VCS requirement not to account for leakage that is demonstrated to be international.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.7.6 VCS AFOLU Requirements 4.6.6: Leakage mitigation

Where leakage mitigation measures include tree planting, agricultural intensification, fertilization, fodder production, and/or other measures to enhance cropland and/or grazing land areas, then any significant increase in GHG emissions associated with these activities shall be accounted for, unless deemed *de minimis* (as set out in Section 4.3.3) or conservatively excluded (as set out in Section 4.3.4).

Findings from Review on 21 JUNE 12
Section 10.4 of the methodology estimates the applicability of any emissions sources from leakage prevention activities.

In section 10.4 there is a statement that if leakage prevention activities are another carbon project and the emissions from them are being accounted for then they do not have to be double discounted. This is reasonable and will be evidenced by another PD, and subsequent monitoring reports. Equation 85 calculates the GHG from leakage prevention activities by summing emissions from increased fertilisation, flooded rice areas, livestock, woodlots and biomass loss from site preparation. Each of these individual sources of emissions are calculated in the following subsections. This was found to be a thorough approach to calculating leakage prevention emissions. However, in many of the sub-sections, "organic soils" are mentioned. The developers clarified that this meant peat. Consistent definitions and naming is required for the emissions from leakage prevention to be calculated without ambiguity. (**NCR 09/11**)			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 09/11**		

3.7.7 VCS AFOLU Requirements 4.6.7: Positive leakage

Projects shall not account for positive leakage (i.e., where GHG emissions decrease or removals increase outside the project area due to project activities).

Findings from Review on 21 JUNE 12			
The methodology does not contain explicit language on how to avoid crediting for positive leakage should the emissions in the leakage belt during the project scenario be less than projected in the baseline scenario (in equations 93 and 95). (**NCR 10/11**)			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 10/11**		

3.7.8 VCS AFOLU Requirements 4.6: Project specific leakage requirements

Additional project type specific requirements relevant to leakage calculations must be met.

I. ARR projects must meet requirements outlined in sections 4.6.8 and 4.6.9 of the VCS AFOLU Requirements Version 3.
II. IFM Projects must meet requirements outlined in sections 4.6.13 and 4.6.14.
III. REDD projects must meet requirements outlined in sections 4.6.15 and 4.6.16.

Findings from Review on 21 JUNE 12			
4.6.15.2 relevant to avoided unplanned deforestation and degradation The PD will describe the drivers of deforestation as required by the methodology. In addition, the methodology does include, in its leakage mechanisms the monitoring of surrounding forests for leakage. This is done through the demarcation of the leakage belt described above and subsequent monitoring. **4.6.16** The extent to which market leakage was covered by the methodology is not clear, as described in detail in 7.1 and **NCR 08/11**.			
Conformance	Yes ☐	No ☒	N/A ☐

NCR/OBS	**NCR 08/11**

Assess whether and how the procedures for calculating leakage are appropriate, adequate and in compliance with the VCS rules.

3.8 Quantification of Net GHG Emission Reductions and/or Removals

3.8.1 VCS Standard 4.7: GHG quantification of baseline scenario

The methodology shall establish criteria and procedures for quantifying GHG emissions and/or removals for the selected GHG sources, sinks and/or reservoirs, for the baseline scenario (this must be done separately from the project scenario – see 8.2 below).

Findings from Review on 21 JUNE 12
Baseline emissions are considered in section 8 of the methodology. The land use and land cover component of the methodology is explained in section 8.5 and is based on the information generated in steps 8.1 to 8.3. The following issues were identified by the audit team regarding the LULC component of the methodology **(NCR 11/11)**: • In section 8.1.1 the methodology states that project area parcels must be supplied in a common GIS software format. This does not comply with VCS provisions, which require KML format. • In section 8.1.2 planned deforestation areas within the reference region are not explicitly excluded from the baseline calculations in order to avoid inflating baseline emissions. • Applicability condition 4 requires that, "Accurate data on past land use, land cover, and forest cover are available for at least four points in time in the reference region". This is not consistent with what is asked for later in sections 8.2.1, and 8.2.4.3, where this requirement was reduced to 3 images (see also section 1.6 of this report). This issue also leads to confusion regarding the discount estimated in step 3 of section 8.2.4.3, which reads "*An absolute minimum of three images is required to quantify the historical deforestation and degradation rates. Credits must be further discounted by multiplying the factors from steps 1 and 2 with a factor 0.9 when only four images are used. If four or more images are used, no additional discounting is required".* • In section 8.3.2, substep 1, it is stated that the number of grazing animals is counted within, "the project boundary baseline". It is not clear what this means. • Section 8.5.3 – 7 states "*The difference in aggregated deforestation and forest degradation rates as well as forest stratum and LULC-class transition rates averaged over all the time periods (in between images of the reference period) between empirically observed and modelled rates may not be more than 15%*". VM0006, on which the proposed methodology is based, requires 10%. It is not clear why this modification was made or how it may be justified, given that it affects the accuracy of the baseline. In addition to the issues listed above, issues were found specifically with the ANR element of the methodology. The main issues are listed below **(NCR 11/11)**: • It was not clear that ANR activities are allowed under VCS AUD if the areas of forest are not going to be deforested during the

crediting period. This would appear to just be an IFM LtHP project. It is acknowledged that the AFOLU Requirements 4.2.6 state ANR is a way that can generate credits in REDD projects, but that was assumed to mean only for areas that would have been deforested.

- It was not clear that the method was generating credits for permanent sequestration that would not have happened in the absence of the project. Equation 97 gives credits in any year if the change in carbon stocks measured is greater than the change expected from the NAI rate. However, this does not consider that at some point equilibrium may be reached and growth rates may slow. The actual effect of ANR over the long term may be to speed up the time it takes to reach the equilibrium, but not actually provide any long term additional sequestration.
- *In section 8.5, it is not clear how increases in carbon stocks through Assisted Natural Regeneration are credited. Figure 2, as well as the last bullet in the text below it ("For area without ANR") and the sentence below Equation 29 ("For the area with ANR") are particularly confusing, since they fail to identify with clarity in which type of LULC in the baseline ANR activities may be credited, as well as the role of reforestation in the methodology (an invalid activity according to section 8.5.2).*
- In Section 2, bullet 4, it is stated that "In addition, assisted natural regeneration activities are allowed as a leakage prevention activity", which contradicts the treatment of this activity throughout the methodology.

In summary, the approach to claiming credits for ANR activities was not clearly demonstrated as being within VCS rules in terms of project type and also in terms of being an activity generating long terms additional carbon stocks. The approach was also ambiguously executed. **(NCR 11/11)**

Note: The methodology chooses not to claim credits for growth on areas that would have been deforested in the baseline. This is conservative.

The carbon stock change component of the methodology is set out in section 8.4 "*Determine Emission Factors for All Included Transitions*", which was found to be in conformance with VCS requirements.

It must be noted that the proposed methodology allows crediting for decreasing the consumption of fuelwood through the introduction of fuel-efficient cookstoves when avoided degradation is not credited. However, there is no guidance in the baseline section on how to develop a baseline for this activity or on how it shall be included (or not) into the overall project accounting under this methodology. Moreover, the methodology mandates the use of the approved gold standard methodology "Indicative Programme, Baseline, and Monitoring Methodology for Improved Cookstoves and Kitchen Regimes", although the Gold Standard is not an approved GHG program under the VCS. In summary, it is not clear how cookstove crediting is integrated into the methodology as a whole and whether this is permissible under VCS rules. (**NCR 11/11**)

Ex-ante estimations of baseline emissions and removals are also covered in section 13.2. However, this section only points out a number of parameters relevant to this calculation extracted from Equation 91 (which estimates net emission reductions), but does not provide specific instructions or equations to estimate baseline emissions and removals. The auditors understand that the intention is that the equations in the earlier sections are drawn upon to calculate the parameters, but the lack of explanations, a structured approach or clear cross referencing make it difficult to follow. Moreover, it is not clear why this section is included as part of the monitoring methodology and not in the baseline methodology. (**NCR 11/11**)

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 11/11**		

3.8.2 VCS Standard 4.7: GHG quantification of project scenario

The methodology shall establish criteria and procedures for quantifying GHG emissions and/or removals for the selected GHG sources, sinks and/or reservoirs, for the project scenario (including leakage) (this must be done separately from the baseline scenario – See 8.1 above).

Findings from Review on 21 JUNE 12			
The methodology establishes criteria and procedures to quantify GHG emissions and/or removals in the project scenario ex-ante (section 9) and ex-post (section 13). Ex-ante estimations of the project scenario are covered in section 9 of the proposed methodology. The ex-ante estimation of the deforestation and forest degradation rates are based on a breakdown of the effectiveness of every project activity in decreasing any deforestation driver relative to that driver's contribution to deforestation and forest degradation. A description of the REDD project activities that are included in this section, together with procedures to quantify the effectiveness or each project activity on each of the targeted drivers, which increases over time until reaching a maximum value set by the methodology for each activity. Finally, the LULC model calibrated and validated in section in section 8.5 is used to divide the total *ex-ante* deforestation and forest degradation rates under the project scenario into individual rates for every forest stratum transition. In addition, section 9.4 estimates the net GHG sequestration from assisted natural regeneration activities. All of these procedures were found to be acceptable by the audit team. However, the following issues were identified (**NCR 12/11**): • In the table in section 9.1.2 the maximal effectiveness quantification is derived for conversion of forestland to cropland by participating communities. The more conversion that is 'allowed' the higher the effectiveness quantification value is. The rationale behind this procedure is not clear. There was insufficient guidance for the equation to be used. • The introduction to section 9.3 states that the section is about emissions sources not related to pools. However, equation 59 has a 'pool loss' component. The ramifications of this were not traced through the methodology by the auditors because through discussion the Developers explained that it was an error. Leakage emissions are estimated in sections 10 (ex-ante) and 13.7 (ex-post). Please see section 7 of this report.		
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 12/11**		

3.8.3 VCS AFOLU Requirements 4.7.1: Quantification of net GHG emissions reductions and/or removals

Methodologies shall establish procedures for quantifying net GHG emission reductions and removals (the net GHG benefit), which shall be quantified as the difference between the GHG emissions and/or removals from GHG sources, sinks and carbon pools in the baseline scenario and the project scenario. The GHG emissions and/or removals in the project scenario shall be adjusted for emissions resulting

from project activities and leakage. Methodologies shall also establish procedures for quantifying the net change in carbon stocks, so that the number of buffer credits withheld in the AFOLU pooled buffer account and market leakage emissions may be quantified for the project.

Findings from Review on 21 JUNE 12			
Section 11.4 of the proposed methodology provides guidance on how to quantify net GHG emission reductions and/or removals, which are estimated through equation 91. This equation considers emissions from project activities and leakage, and allows for the quantification of net changes in carbon stocks. Nevertheless, the following issues were found by the audit team regarding this section (**NCR13/11**): • The table in this section explains variable *nrFNFtransitions* as the "Number of forest/non-forest transitions among land classes or forest strata, meaning transitions in which either the "from" or the "to" class are non-forests. Section 8.2.3". However, transitions from non-forests to forests implies reforestation, which is not allowed by the methodology. Moreover, the table contains two references to "section 0", which does not exist in the methodology. Also, not having direct references to the equations where the parameters contained in the table were calculated makes tracing values difficult. • Equation 90 was found to be unclear with regard to where with and without ANR credits for avoided DG and DF come from.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 13/11**		

3.8.4 VCS AFOLU Requirements 4.7.2: Calculation of GHG credits

The number of GHG credits issued to projects is determined by subtracting out the buffer credits from the net GHG emission reductions or removals (including leakage) associated with the project. The buffer credits are calculated by multiplying the non-permanence risk rating (as determined by the *AFOLU Non-Permanence Risk Tool*) times the change in carbon stocks only. The full rules and procedures with respect to assignment of buffer credits are set out in the VCS document *Registration and Issuance Process*. This calculation process is illustrated in the example in section 4.7.2 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12			
Equation 92 in section 11.3 estimates the amount of VCUs generated by projects by considering the net GHG emission reductions or removals (taking leakage into account) associated with the project and discounting the non-permanence buffer. It is not clear how market leakage is incorporated into this calculation. (**NCR 14/11**)			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 14/11**		

3.9 Monitoring

3.9.1 VCS Standard 4.8.2: Monitoring plan

The methodology shall establish criteria and procedures for monitoring, and specify the data and parameters to be monitored, as set out in the VCS Standard. At a minimum the methodology shall establish criteria and procedures for monitoring which shall cover the following (as required by section 4.8.2 of the VCS Standard Version 3):

I. Purpose of monitoring.
II. Monitoring procedures, including estimation, modeling, measurement or calculation approaches.
III. Procedures for managing data quality.
IV. Monitoring frequency and measurement procedures.

Findings from Review on 21 JUNE 12
Section 13 of the methodology contains the monitoring methodology description. **I Purpose of monitoring** The purpose of the monitoring is clearly explained in the introduction to section 13. However, of the listed bullet points, the first, "Monitoring deforestation drivers, project activities…." does not appear to be described any further in section 13. (**NCR 15/11**) In section 13.10 it is stated that the monitoring plan must include an explanation of how super-acceptance will be monitored. In section 10.1 it is stated that the negative effects of super-acceptance must be tracked. However, it is not clear how these results would feed back into VCU calculation. (**NCR 15/11**) **II Monitoring procedures, including estimation, modelling, measurement or calculation approaches** The approach taken by the methodology is that data gathered ex-post is input into the equations for ex-ante calculations to derive the actual values (which culminate in equations 90 and 91). Project proponents are instructed to update the parameters in section 14 with the procedures outlined in section 13. Section 13.2 explains that ex-post the baseline does not need to be monitored. This is acceptable. Section 13.3 explains the procedure for monitoring changes in emissions and sinks within the project area, focusing in detail about how net annual increment is calculated for areas where ANR is being undertaken. The main element of this methodology will be the analysis of remote sensing data to determine the extent to which deforestation and degradation have been arrested. However, on this subject the methodology only states that the actual deforestation and degradation need to be calculated, "*based on remote sensing analysis*". This was considered insufficient guidance for this important monitoring step. (**NCR 15/11**)

Section 13.3 also introduces the concept that credits can be generated using a CDM Gold methodology;

"In the case that credits from avoided degradation were excluded from the generated NERS due to the fact that forest strata cannot be detected with sufficient accuracy, credits from the introduction of fuel-efficient woodstoves may still be issued, as explained in section 9.1 under "Decrease the consumption of fuelwood". Credits must be calculated according to the approved gold standard methodology "Indicative Programme, Baseline, and Monitoring Methodology for Improved Cookstoves and Kitchen Regimes" (Currently V.02), discounted using equation [EQ46], and added to the total NERs according to [EQ91]. The factor "0.75" is to discount the credits from fuel-efficient woodstoves to remain conservative."

The CDM Gold website (http://www.cdmgoldstandard.org/Gold-Standard-Methodologies.347.0.html) shows that the methodology referenced has increased to version 2, and will be replaced on 30 JUNE 12 by another methodology. Please see section 6.1 of this report for more discussion of credits from cookstoves.

Section 13.4 explains the procedures for calculation methane emissions from fires other than controlled burning, 13.5 the procedures for small scale fires, 13.6 from large scale fires, and 13.7 for leakage. It was not clear how the data generated in 13.4-6 feed back into the equations to calculate NERs. This was partly down to a lack of clarifying text and linkages between equations, but also because often in the monitoring sections references to equations elsewhere in the methodology are incorrect. (**NCR 15/11**)

III Procedures for managing data quality

In section 15.3 of the methodology, there are thorough quality assurance and quality control procedures.

IV Monitoring frequency and measuring procedures.

Section 14 contains boxes which have, for each data/parameter to be measured, the frequency of monitoring. This is an acceptable way of presenting this information. The sample checks carried out did not detect any inconsistencies in this field.

<u>Findings from Reconciliation (18 Sept 13):</u>

Changes include:

1. Several minor changes have been made to clarify requirements in cases when the project is nested within a jurisdictional REDD program. These changes all help improve the accuracy of usage of the methodology and are appropriate.
2. A requirement is added in Section 9.3.2 such that if credits are generated from avoided degradation, the same stratification model as was used at validation must be used during image classification and resulting accuracy assessment of the classification. This is appropriate and consistent with other new requirements that have been introduced in v14 of the methodology in Section 8.1.
3. Requirements for monitoring emissions from small-scale fires have been removed, consistent with the changes made to Section

8.3.3.4 of the methodology discussed earlier in this report (and approved). 4. Section 9.3.3.1—A caveat has been added such that if the observed deforestation rate in the reference region has increased to a higher rate than that observed in the leakage area, then the rate of deforestation/degradation in the leakage area may be adjusted informed by the rate in the reference region. This is for cases when the observed deforestation rate in the leakage area is thought to be attributed to external circumstances rather than the impacts of project activities (ie. it is not leakage that is occurring, but some larger trend, as observed in the reference region). This is less conservative. However, in principle, it is more accurate, assuming that the audit team during the verification audit fully investigates this issue. The VCS allows that Accuracy can be used to attenuate conservativeness, hence this is in conformance with the VCS standard.			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 15/11**		

3.9.2 VCS AFOLU Requirements 4.8.2: Leakage monitoring

Leakage shall be monitored as set out in Section 4.6 of the VCS AFOLU Requirements Version 3.

Findings from Review on 21 JUNE 12			
Section 10 of the methodology refers to leakage estimates ex-ante, whilst section 13.7 explains the ex-post quantification Section 13.7.1 describes the monitoring related to geographically constrained drivers. An outline of how to detect land-use change is provided. However, a procedure, "similar" to the ones used to generate the baseline must be used. It is not clear in what aspects in must be similar and in what ways it can vary. The second bullet point in the section *states, "For the project area where no ANR activities were performed, produce (a) land transition matrix/matrices between the consecutive map(s) since the last verification*." It is not clear what this has to do with calculating leakage rates. (**NCR 16/11**) Section 13.7.2 describes the monitoring related to geographically unconstrained drivers. It explains that a factor approach using, "default leakage cancelation factors set by the VCS". It is not clear what is meant by this, since the VCS does not provide leakage cancellation factors. This section does not appear to align with section 10.3, where the ex-ante estimates related to geographically unconstrained drivers are made. In 10.3 it seems to state that VCS default market leakage approach AND in equation (84). Therefore, it is not clear how market leakage will be monitored or calculated ex-post. Section13.7.2 then states, "*Use Equation [EQ91] to calculate* $GHG_{otherLeakageSources}(t)$." Equation 91 does not contain that parameter, the parameter is in equation 90 and 96, but there is no calculation to be performed in these equations. Therefore the meaning of this sentence is not clear. (**NCR 16/11**) Section 13.7.3 explains that ex-post emissions from leakage prevention activities must be calculated by submitted actual values into section 10.4 (although the reference contains a typo).			
Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 16/11**		

3.10 Data and Parameters

3.10.1 VCS Standard 4.8.1: Data and parameter reporting

The methodology shall describe the data and parameters to be reported, including sources of data and units of measurement. Standards and factors used to derive GHG emission data shall meet the following requirements (as outlined in section 4.8.1 of the VCS Standard Version 3):

I. Be publically available from a reputable and recognized source (e.g., IPCC, published government data, etc.)
II. Be reviewed as part of its publication by recognized competent organization.
III. Be appropriate for the GHG source or sink concerned.
IV. Be current at the time of quantification.

Findings from Review on 21 JUNE 12
Data and Parameters Section 12 contains a list of data and parameters not monitored. The first 5 boxes were checked and the following issues listed below were found. It was concluded that the boxes had not been thoroughly compiled. (**NCR 17/11**) • EA1: Not found in equation 64, yet it is in Eqn 65. • EA4: CF is in equation 22, but this is not listed (there may be more – the check was stopped here) • EA5: No data unit provided, no equations listed. (it is used in at least equation 10 – the check was stopped here) Section 14 contains a list of data and parameters to be monitored. The first 6 boxes were checked and the issues listed below were found. It was concluded that the boxes had not been thoroughly compiled. (**NCR 17/11**) • MN2: Equation references are incorrect. It is not clear how this is measured in the field, it would seem to be something that is derived via remote sensing data and analysis. • MN4: This parameter is not named in section 8.4.2 (or anywhere else in the methodology). The methodology would be more complete if it referenced the parameters when they were derived. • MN6: Equation reference is incorrect. The auditors then skimmed down the list looking for any data/parameters that stood out. Based on this analysis, the following questions were raised/issues (**NCR 17/11**):

- MN34: Equation reference is incorrect or unclear.
- MN41: Slope of plots does not seem to be mentioned in the methodology, and is not used in equation 30 as stated.
- MN77: Fire prevention labour does not appear to be used in the methodology.

Based on this assessment it can be concluded that the data/parameter boxes in section 12 and 14 have not been accurately and thoroughly completed. (**NCR 17/11**)

Having unique identifiers (MN XX) for the data/parameters is a useful idea, however, the failure to reference these in the methodology when they are raised, and the inability to perform a search on parameters (because they are in equation boxes which Word does not search inside), means that tracing parameters through the methodology is difficult.

Standards and Factors

The methodology contains a number of standards and factors. These are assessed below.

Table 7: Proportions of carbon loss leading to deforestation vs. degradation for different drivers.
The proportions were not from referenced sources, This was acceptable since such data is unlikely to exist, and in most cases the proportions were obvious. For example conversion of forest land to cropland is 100% deforestation and 0% degradation.

Equation 28: Forest scarcity shape factors sc1 and sc2.
Sparse literature is available on the relationship between deforestation rates and remaining forest, however peer reviewed literature is used to support the approach. This was found to be acceptable. Projects are required to derive their own values. Given the difficulty in obtaining data to derive the factors, conservative defaults (supported by literature) are necessary to guide projects and auditors. (See **OBS 02/11**)

Table 9: Wood product oxidation
The values in table 9 are taken from a commonly cited peer reviewed paper on the subject.

Section 12: Data and parameters not monitored
The data sources were checked and found to be in compliance with the VCS requirements above. For example, the GWPs for CH_4 and N_2O are consistent with those from the IPCC's second assessment report (http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html).

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 17/11, OBS 02/11**		

3.10.2 VCS Standard 4.8.1: Use of uncertain data

When highly uncertain data and information are relied upon, conservative values shall be selected that ensure that the quantification does not lead to an overestimation of net GHG emission reductions or removals.

Findings from Review on 21 JUNE 12

The methodology was found to use conservative measures when uncertain data is relied upon. For example, This is accomplished through uncertainty deductions for activities and emissions factor data in section 15.2, the handling of cloud covered images in section 8.2.4.1 and the way regressions are applied to different patterns of historical deforestation/degradation in section 8.5.1.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.10.3 VCS Standard 4.8.1: GHG quantification units

Metric tonnes shall be used as the unit of measure and the quantity of each type of GHG shall be converted to tonnes of CO2e. Consistent with UNFCCC accounting, the six Kyoto Protocol greenhouse gases shall be converted using 100 year global warming potentials derived from the IPCC's Second Assessment Report (which are also available and reprinted in the Fourth Assessment Report). Ozone-depleting substances shall be converted using 100 year global warming potentials from the Fourth Assessment Report, which provides a full set of factors relevant to ODS methodologies and projects.

Findings from Review on 21 JUNE 12			
Units of t CO_{2e} are used throughout the methodology. The GWPs for CH_4 and N_2O are consistent with those from the IPCC's second assessment report (http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html).			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.10.4 VCS Principles of transparency and accuracy: Equation logic

The methodology shall present equations in a clear, consistent, mathematically correct format which allows data to be traced through them.

Findings from Review on 21 JUNE 12
A number of examples of small mistakes/typos and breakdowns in the logic were found. It was found to be difficult to trace the parameters from the central equations 90 and 91 back through the methodology, due to a lack of referencing between equations and parameters. In addition, many errors were found in equation references and in the data/parameter table references which further compounded difficulties in tracing data through the methodology. Below, examples of these issues are highlighted(**NCR 18/11**): • The introduction to section 9.3 states that the section is about emissions sources not related to pools. However, equation 59 appears to have a 'pool loss' component. • There is an equation between equation 21 and 22 that does not have a number, or parameters listed beneath. • In section 10.4.2 parameter ΔArice(t) is described as the "annual increase in harvest area of rice". However, following discussions with the developers it became clear that it was not an 'annual' value that needs to be used but rather a cumulative one up to time t. This style of equation and parameter is used in other equations in the methodology, where it is therefore also incorrect.

- The units on the left hand side of equation 84 are incorrect because a factor with the unit tCO_2e is multiplied by 44/12.

- In Eqn 99 there is the parameter 'GHGsources,projectarea(t)'. The parameter table below states that this is, *"Emissions from sources of methane, nitrous oxide or fuel-CO_2 from activities within the project area for year t. Section* ***Error! Reference source not found.****. [tCO_2-eq]".* In section 9.3 there is equation 58 where there is a parameter called, 'GHGsources,projectArea' where it is set to 'EfireBreaks'. There is a note beneath to say that the significance of other emissions must also be tested. It is not clear which other emissions would need to be tested or how they would be included in the equation.

- Equations 99 and 100 are incorrectly referenced by equation 90 (8 = eqn 100, not eqn 99).

- As mentioned previously market leakage does not follow through into the final calculations of credits.

- In equation 101 the units do not match up on both sides of the equation.

- The methodology does not use subscript naming consistently. For example, the methodology refers to forest stratum 'i', (e.g. eqn 16-19) but 'i' also represents images (section 8.2.4.1) and forest transitions (eqn 95) etc Beneath equation 55 the methodology refers to deforestation driver 'd', whilst in the parameter list beneath equation 12 (and beneath table 6) "driver i" is referred to.

- In section 13.5, equation 102, a parameter, 'Esmall-scale fires,projectarea(t)' is calculated. However, there is no indication of where this parameter is supposed to be used. (It is noted that there is some explanation in 13.4 about adding fire emissions to a parameter 'Esources,projectArea(t)' in equation 1. It is suspected that this is an outdated reference because we cannot trace it)

- In section 13.6 MN77 is referred to. It is not clear how this parameter is used in the context described. This is one example of a number of data/parameters that cannot be traced back into the methodology.

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 18/11**		

3.11 Use of Tools/Modules

Findings from review on 21 JUNE 12			
The methodology appropriately uses and justifies tools and modules throughout. Multiple CDM tools are referenced appropriately.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.12 Adherence to the Project Principles of the VCS Program

The methodology shall adhere to the project-level principles of the VCS Program (VCS Standard Version 3; Section 2.4), for a list of the full principals see section 1.2 of this report.

3.12.1 VCS principles: VCS principle adherence

The methodology shall be compatible with the VCS project level principles, as explained in more detail in section 1.3 of this report. These principles are relevancy, completeness, consistency, accuracy, transparency and conservativeness.

Findings from Review on 21 JUNE 12
Relevancy Throughout the document there are references to VCS 2007.1 material, guidance and requirements (and logo) which are now outdated. For example, section 3, line 2. To provide another example, the methodology states in sections 10.1 and 10.3 that market leakage assessments undergo double approval when this is no longer the case under V3. In section 3.2 it is stated that there is no VCS definition of degradation, However there is a definition in VCS AFOLU Requirements section 4.2.5. In section 13 it is stated that VCS verification happens at a minimum of every 5 years, however, this is not a VCS requirement. There is a VCS requirement to verify within 5 years of validation, but not every 5 years after (please see VCS AFOLU Requirements 3.4.2.1.c and 3.6.9 for the rule rules). Therefore, in a number of places the methodology was not found to be relevant compared to the VCS v3 to which it is being assessed. (**NCR 20/11**) **Completeness** The methodology was found to be complete. **Consistency** In section 13.2 It is stated that EF cannot be updated. Then in section 13.3 despite EF not being mentioned in the box for parameters to which the section relates, it is stated that EF must be updated prior to verification. (**NCR 20/11**) Throughout the methodology typos and mis-references were found. At times, these can make following the logic of the methodology difficult (**NCR 20/11**).

Examples are provided here:

Section 8.2.4.3: the references to equations 93 and 94 are incorrect

Section 8.3.2: In parameters list, “areabaseline,fire(i)” is missing a “Δ”.

Section8.4.4: “calculating by measuring”

Section 9.4.2.2: “incases”

Equation 75, which calculates DWproject, is preceded by the text, “estimate Bprojectscenario as:”

Section 10.2.3: There is a reference to “Table 15” which does not exist.

Equation 75, which calculates DWproject, is preceded by the text, “estimate Bprojectscenario as:”

Section 8.2.4.3: There is a reference to equations 93 and 94, equations 92 and 95 which are also relevant are not referenced.

Section 10.3: A reference is made to the “overview table” without explanation (occurs elsewhere too – see 11.4).

Section 10.4.2 “CH4” missing subscript. (three times) (also 10.4.3, 13.4)

Section 10.4.2: “”It can be demonstrate that”

Eqn 90-100: In the parameters list there are two references to “section 0” which does not exist. The list is not logically ordered, making it difficult to follow.

Section 11.1: Equation 90 is incorrectly referenced.

Section 11.1.1: “products is calculating based…”

Section 11.4: Equation references do not match up to the equations.

Section 13.1 and 13.2: Equation references do not match up to the equations (including caption for table 10).

Section 13.3: (and in parameters related to equation 100), the methodology makes reference to the section, “Decrease the consumption of fuelwood” in Section 9.1. This section does not appear to exist.

Section 13.3: There is reference to, “section II.1.2.4.1” but this section does not exist. Other references in this section also appear erroneous. Equation references are also incorrect in this section.

Section 13.4: Equation references do not match up to the equations.

Section 13.7.2: Equation references do not match up to the equations.

Section 13.7.3: “10.410.4”

Section 13.8: it is stated that new project activities must take place within the “defined project geographical boundary”. This term is not defined anywhere else in the methodology.

Section 13.10 states that the baseline will be “verified”, but baselines will actually need validating.

Accuracy
The methodology was not found to have any inaccuracies other than those typos described above.

Transparency
The methodology was found to be transparent, explaining itself as it went along.

Conservativeness
No elements of the methodology were found to be lacking in conservativeness.

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 20/11**		

3.13 Relationship to Approved or Pending Methodologies

3.13.1 VCS Methodology Approval Process: Relevant VCS methodologies

The methodology developer shall list all approved or pending methodologies, under the VCS or an approved GHG program, that fall under the same sectoral scope or same AFOLU project category 4 or combination of sectoral scopes or AFOLU project categories, as applicable. The list shall include, at a minimum, all such methodologies that are available sixty days before the proposed methodology is submitted to the VCSA for public consultation. Such list of methodologies ("listed methodologies") shall contain the methodology name and reference number, and the GHG program under which it is approved or pending.

Findings from Review on 21 JUNE 11
On 27 May 2011 the Developers submitted these lists: <u>List of approved methodologies under sectoral scope 14: AFOLU of VCS</u> VM0003 Methodology for Improved Forest Management through Extension of Rotation Age, v1.0 VM0004 Methodology for Conservation Projects that Avoid Planned Land Use Conversion in Peat Swamp Forests, v1.0 VM0005 Methodology for Conversion of Low-productive Forest to High-productive Forest VM0010 Methodology for Improved Forest Management: Conversion from Logged to Protected Forest VM0012 Improved Forest Management on Privately Owned Properties in Temperate and Boreal Forests (LtPF) VM0006 Methodology for Carbon Accounting in Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation VM0007 REDD Methodology Modules (REDD-MF) VM0009 Methodology for Avoided Mosaic Deforestation of Tropical Forests VM0011 Methodology for Calculating GHG Benefits from Preventing Planned Degradation <u>List of VCS methodologies under development under scope 14: AFOLU</u> Methodology for Estimating Reductions of GHG Emissions from Frontier Deforestation Adoption of Sustainable Agricultural Land Management (SALM) Methodology for Estimating Reductions of GHG Emissions from Mosaic Deforestation Methodology for Improved Forest Management - Logged to Protected Forest (IFM-LtPF) on Lands Subject to Unextinguished Indigenous Rights and Title**

Revision to VMD0007 Estimation of baseline carbon stock changes and greenhouse gas emissions from unplanned deforestation (BL-UP) VCS Methodology for Agricultural Land Management: Improved Grassland Management Quantifying N2O Emissions Reductions in US Agricultural Crops through N Fertilizer Rate Reduction ALM Adoption of Sustainable Grassland Management through Adjustment of Fire and Grazing <u>List of inactive VCS methodologies</u> General Methodology for Quantifying the Greenhouse Gas Emission Reductions from the Production and Incorporation of Soil of Biochar in Agricultural and Forest Management Systems Afforestation/Reforestation of Agricultural Lands			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

3.13.2 VCS Methodology Approval Process: Linkage to existing methodologies

The methodology developer shall state whether, and explain how, the proposed methodology uses, includes, refers to or relies upon all or part of any of the listed methodologies. Where it does, the methodology developer shall demonstrate that none of the identified methodologies (“similar methodologies”) could have been reasonably revised (i.e., developed as a methodology revision) to meet the objective of the proposed methodology. The onus is upon the methodology developer to demonstrate that a methodology revision would not have been more appropriate, failing which the proposed methodology shall not receive a positive assessment from the validation/verification body. Examples are provided in the VCS Methodology Approval Process document.

Findings from Review on 21 JUNE 12
On 27 May 2011 the Developers submitted this defense: The objectives of the proposed methodology are to provide exact procedures to design and develop a grouped mosaic REDD project with specific drivers of deforestation/degradation mitigated by specific project activities and to specify the related procedures for GHG accounting and monitoring. As a consequence, existing IFM, ALM and ARR methodologies cannot be used for the conditions of this methodology. Only three existing methodologies or modules may be applicable to the proposed methodology: VM0006, VM0007 (and proposed revision) and VM0009. In general, in comparison to these methodologies, the proposed methodology was developed for wider applicability by allowing grouping, incorporating a wide but specific range of drivers of deforestation and degradation and project actions, and an efficient approach to baseline determination among others. Additional criteria and descriptions were added in the proposed methodology to allow for the addition of new project activities using grouping according to the VCS Guidance. Even though existing REDD methodologies and modules, as well as other AFOLU methodologies, provide procedures to quantify REDD credits are in principle similar to the proposed methodology, no existing methodology has included both grouping and accounting procedures for avoiding forest degradation. The proposed methodology allows both. More specifically, • Although REDD methodology VM0009 allows grouping of project activities, its inability to account for degradation is

considered to be a major limitation for project developers who need to develop a REDD project with a degradation component.

- The REDD methodological module VM0007 is applicable for developing a grouped unplanned deforestation project, but is also not applicable for project developers wishing to include degradation in REDD projects.

- While REDD methodology VM0006 allows for quantifying forest degradation for potential REDD projects, it is not applicable for grouped projects. It is important to note that allowing grouping of projects has been an important cost reduction measure for potential project development and this approach is compatible with nesting multiple REDD projects in future. Therefore, the proposed methodology was developed to facilitate REDD project development with both deforestation and degradation as a grouped project because in larger areas, deforestation and degradation are taking place at the same time and in the same place and individual project parcels are likely to be included in the project in the future.

The proposed methodology has most resemblance with VM0006, but differs from this methodology in the following key aspects:

- In order to quantify GHG emissions in a more cost-effective but still robust manner, modifications were made in the procedures to determine historical LULC transition rates and the minimal area of the reference region.

- The proposed methodology includes quantification of carbon in above ground non-tree pools and soil carbon pools making the methodology applicable for a full suite of carbon pools. In areas of the world with high rates of deforestation i.e. in Asia, Africa and Latin America, there are also high levels of non-tree perennial biomass. The VCS AFOLU Requirements document makes measurement of this carbon pool optional. The REDD methodology VM0006 does not include procedures to quantify GHG emissions from removal of non-tree and soil carbon pools. Although REDD methodologies VM0009 and VM0007 provide procedures to include these carbon pools, their treatment of degradation, grouping and baseline determination are different from the approach taken in the proposed methodology.

- The proposed methodology includes additional potential drivers of deforestation and degradation making the methodology applicable in a wider context than VM0006. Additional and more comprehensive project actions were also included in the proposed methodology. Other existing methodologies (except for VM0006) provide a generalized approach to identification of drivers but lack the illustration of how projects can be designed to reduce or stop such deforestation agents. The methodology includes exact and detailed procedures to quantify the carbon loss per driver for newly added drivers as well as the impact of project actions to prevent or reduce the loss of carbon once the project actions are implemented.

- The reference region selection process was made simpler and more relevant to larger grouped projects compared to VM0006. The proposed methodology uses a reference region selection approach with the purpose of capturing essential deforestation trends from the broader region. Because for grouped projects, the final project size may not be evident at the start of the project, the factor approach used in VM0006 and VM0007 is invalid. Therefore, a threshold project area of

250,000 hectares or greater capped by a jurisdictional boundary (i.e. entire country or territory) was used. This change captures all the essential arguments for creating a reference region while, at the same time, supporting project implementation if there is no reference region within one country. Since it would be difficult or practically impossible to develop or undertake a transboundary project, the reference region was limited to a size that is maximally available in the same country where the project resides.

In conclusion, while the proposed methodology draws on elements of existing methodologies, it is a significant departure from existing methodologies and none of the existing methodologies can be applied under the conditions that the proposed methodology is valid for.

While the methodology has been submitted to validation as a new methodology, it is acknowledged on the front page of the methodology that it is "a modification of VM0006 "Carbon Accounting Methodology for Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation"" aimed at accounting for GHG emission reductions from grouped mosaic and landscape-scale REDD Projects.

The most significant change – the introduction of the grouped project concept, is largely constrained to one section 13.8, where some criteria for including new activities or areas are listed. It does not appear that significant structural or procedural changes have been required to incorporate grouped projects. Project grouping actually comes under project requirements in VCS AFOLU Requirements and the VCS Standard V3, and therefore section 13.8 may not even be necessary to use this methodology as a grouped one. The grouped section of the methodology, 13.8, is not exhaustive in its treatment of grouped projects requirements that the VCS has. For example, VCS Standard V3 3.4 requires that new areas are added in "clearly defined geographic areas", yet this is not mentioned in 13.8. In addition some of the methodological considerations of how to execute a grouped project are not covered by the methodology (although these are not required as grouping is covered by project level VCS rules and requirements). For example, it is not clear what would happen if an area that was previously a leakage belt of one area became a new area itself, or how (or if) ex-ante baseline estimates are updated if new areas are added before the baseline is up for renewal. Other changes are small, such as changes in accuracy criteria. It was also found that the new section was somewhat ambiguous as it switched between discussing new parcels and new activities throughout.

The VCS methodology approval document provides six examples of cases where there is sufficient change to justify a new methodology vs. revising an existing one. The auditors could not find any examples that cover the changes made.

To summarise, there have been some structural changes made since VM0006, however the majority of the text and procedures remain the same. Some, but not all these changes relate to the incorporation of a grouped project approach. There are some additions for grouped projects, but it is questioned if these are necessary at the methodology level. In summary, the front page of the methodology states that it is a "modification" of VM0006, and the auditors agree with this statement, it appears to be a revision rather than a new methodology as per VCS definitions. (**NCR 21/11**)

Conformance	Yes ☐	No ☒	N/A ☐
NCR/OBS	**NCR 21/11**		

3.14 Stakeholder Comments

3.14.1 VCS Standard: Response to public comments

The Methodology shall be posted for public comment in accordance with VCS guidelines. The developer shall take due account of such comments, which means it will need to either update the methodology or demonstrate the insignificance of the comment. It shall demonstrate to each of the validation/verification bodies what action it has taken

Findings from Review on 21 JUNE 12			
The methodology was posted for public comment from 1 December 2010 to 30 December 2010. No comments were received.			
Conformance	Yes ☒	No ☐	N/A ☐
NCR/OBS	N/A		

4 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

Note: A non-conformance is defined in this report as a deficiency, discrepancy or misrepresentation that in all probability materially affects carbon credit claims. Each NCR is brief and refers to a more detailed finding in the appendices.

NCRs identified in the Draft Report must be closed through submission of additional evidence by the Project Proponents before Rainforest Alliance can submit an unqualified statement of conformance to the GHG program. Findings from additional evidence reviewed after the issuance of the draft report are presented in the NCR tables below.

NCR#:	01/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.1.2: Combining AFOLU project categories
Report Section:	Appendix A, 1.3
Description of Non-conformance and Related Evidence:	
Point 1	

According to the methodology, it may be combined with Improved Forest Management (IFM), Agricultural Land Management (ALM) and Afforestation, Reforestation and Revegetation (ARR) methodologies to achieve a landscape-scale Reducing Emissions from Deforestation and Forest Degradation (REDD) project that addresses land and resource needs of communities in a holistic way. The text further states that *"Provisions to do so are included in the methodology"* (page 5) and that *"To avoid "double discounting", project proponents do not have to include the GHG emission sources associated with these activities, in case the leakage prevention activities are already included in the IFM, ALM or ARR projects. However, the REDD PD must unambiguously demonstrate that these emission sources are covered under the other PDs*" (page 74). However, the methodology does not specify how to combine such project types, and the guidance set by the VCS for multiple project activities is not referenced in the document. In addition, the methodology allows credits to be earned through the introduction of improved cookstoves yet it is not clear how this is related to the VCS Avoided Unplanned Deforestation (AUD) category. **Point 2** The methodology considers Assisted Natural Regeneration activities, but explicitly excludes reforestation. However, throughout the methodology there are a number of direct and indirect references to reforestation activities, which causes confusion regarding if and how these are integrated into the overall carbon accounting, for instance: • Figure 2. "*Outline of the procedure to calculate all land transitions*" states "*Relative reforestation and regeneration rates*" (step B) • The table in section 11.4 explains variable *nrFNFtransitions* as the "*Number of forest/non-forest transitions among land classes or forest strata, meaning transitions in which either the "from" or the "to" class are non-forests. Section 8.2.3*". Transitions from non-forests to forests implies reforestation. In summary, whilst the methodology's scope appears to be AUD, there are ambiguities regarding the integration of other activities, such as the inclusion of cookstove credits and reforestation.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence provided for Second Assessment Report</u>** **Point 1** A new section is added to provide guidance on grouping. The added section is included below: Note that ALM activities were excluded from the grouping, since no agricultural projects can be executed in forest area. **1** ***2*** **9.3.11 Grouping of Project Areas and Activities** *This methodology allows grouped projects which are structured to permit the expansion of the project area with additional project area parcels, and crediting of GHG emissions reduction benefits from such additions subsequent to project validation, as well as the addition of new project activities. Project*

	activities are VCS eligible GHG emissions reduction activities such as REDD, IFM, ALM, ARR, and CFE. GHG emission benefits credits, arising from different project activities, can be combined and stacked, as long as these credits can be separately quantified. ***3 9.3.11.1 Addition of New Project Area Parcels*** *This mechanism is useful to add discrete project area parcels that are not yet under control of the project proponents into an existing REDD project boundary. New project parcels for which no information is available at the time of project validation and/or verification can be added at a later time. New project areas can be added during the project crediting period. However, the GHG benefit credits from new areas can only be claimed after approval in a verification. In addition to the requirements from the VCS, the following conditions must be met before a new project area parcel can be added to an existing project:* *If a new project area is inside the existing reference region boundary, that area can be added to the existing project area without the need for a separate baseline or baseline update. However, if a new project area is not inside the existing reference region boundary, a separate baseline for that area must be estimated following the procedures described in this methodology for addition into the existing project area.* *The new project area must confirm with applicability conditions of the methodology from which GHG emissions reduction benefits are quantified.* *The additionality of the project is not affected by adding new project area parcels.* *The new project area parcels are not included in another GHG registry at the time of addition.* *The addition of the new project area parcels does not increase the non-permanence risk rating of the project.* *The new project area is comparable with the reference region.* *The boundaries of existing leakage belts can be expanded or new leakage belt can be demarcated around the new project area parcels. The new leakage belts must remain located within the reference region.* *GHG benefits arising from newly added project area parcels at the year of verification must be separately calculated in the first monitoring report. Calculations can be combined in successive monitoring reports after verification.* *These conditions must be demonstrated in the monitoring report and submitted at a verification event. In addition, the monitoring report must contain the spatial boundaries of the new project areas.* ***4 9.3.11.2 Addition of New Project Activities*** *New project activities include any activity that can be implemented in the project area that creates GHG emissions reduction benefits. For example, implementation of ARR and IFM activities can be grouped with an existing REDD project. These activities can be grouped with an existing project even if they have*

	not been described in the PD at the time of validation. The following general applicability conditions must be met for the addition of new project activities: • *New project activities are implemented within the REDD project area, or directly impact the REDD project area.* • *New project activities can only generate VCUs after they have been approved at a verification event.* *GHG emissions reductions from added grouped project activities must be quantified separately at verification. Separate tables for estimated GHG emissions reduction benefits must be presented in the PD for each grouped activity.* *The following specific conditions and procedures must be followed for grouping project activities.* *a. Addition of ARR activities* • *Only areas that were not forest at the start of the project are eligible for ARR activities. However, areas that underwent a natural disaster such as a fire, hurricane, or flood, after the start of the crediting period may also qualify for ARR activities.* • *GHG emissions reduction benefits from new ARR activities must be quantified using a VCS approved ARR methodology.* *b. Addition of IFM activities* • *Eligible IFM activities can be grouped with the REDD projects provided that the average carbon stock density does not fall below the baseline carbon stock density quantified in the applicable strata of the REDD project.* • *The baseline GHG emissions reductions for IFM areas must be set equal to the GHG emissions reductions from REDD projects.* • *Leakage shall be considered insignificant if IFM activities are implemented within the REDD project area.* • *GHG emissions reduction benefits must be calculated using a VCS approved IFM methodology.* **Point 2** Under the definition of the methodology, reforestation is a transition from non-forest to forest. Reforestation may be caused by either natural processes (natural succession and colonization), or by silvicultural activities. Since the methodology has to account for natural reforestation under the baseline, the term reforestation will show up throughout the document. However, there is no reference to any reforestation activities, as was claimed by the auditor. • Reforestation rates referenced in Figure 1 relate to self-regeneration and not assisted reforestation activities. See response to “NCR#: 11/11” where we state that we will add explanation. That might clarify the confusion. • It is correct that transitions from non-forests to forests implies reforestation, but this reforestation

	can occur naturally We have explained that assisted reforestation is not part of the methodology's scope. We have completely revised the cookstove section to ensure compatibility with the scope of the project. **<u>Evidence provided for Third Assessment Report</u>** **Point 1** References to ALM in many places were due to oversight and were removed. We propose to edit the text as below: *The new project area must pass the similarity to the reference region test outlined in Table 3. The similarity must be demonstrated for the new project area as a whole and not for each individual parcel.* Guidance has been provided on when additional areas can be added as shown in the text below in section 9.3.11.1 *…New project parcels can be added at any time during the project crediting period. Credits from new project parcels can only be issued at the first verification after the time the project parcels were added. At first verification, the applicability, additionality and impacts on the non-permanence risk rating shall be evaluated for the new project parcels…….* Regarding the GHG benefits quantification arising from addition of new areas, the following extra guidance has been provided in the same section: *GHG benefits arising from newly added project area parcels at the year of verification must be separately calculated in the first monitoring report. Calculations can be combined in successive monitoring reports after verification.* For addition of new project activities, similar guidance has also been provided. *New project activities can be included at any time during the crediting period. However, they can only start crediting after they have been approved at verification event.* Due to the auditor's concern, as well as the contradiction in the previous version of the meth that ARR can only be implemented on areas that were non-forest at t=0 (which is impossible since all project area has to be forest at t=0 per applicability criteria 1), we have revised this section to focus on ARR after losses occur and the VCS requirements on losses have been correctly executed. Implementing ARR on

	these areas incentivizes good forest management and enables PPs to make up part of the lost credits. The environmental integrity of the system is guaranteed since the lost credits first have to be treated per the VCS rules and the generated credits will first go to replenish the credits in the buffer pool. This section now reads: *Despite the implementation of REDD activities, and good project planning, it is to be expected that some deforestation may still occur in the project area after the start of the project period. This deforestation can be either due to unforeseen anthropogenic reasons or non-anthropogenic reasons such as a natural disaster. In case a deforestation event occurs within the project area after the start of the crediting period, the project proponents shall follow the VCS's requirements for treatment of areas that suffer losses of forest cover and calculate the loss in credits appropriately. However, this methodology allows to conduct ARR activities on deforested areas to incentivize good forest management, accelerate forest regrowth, and enables project proponents to recuperate part of the suffered losses in credits.* • *Only areas that were forest at the start of the project but become deforested after the start of the project are eligible for ARR activities, regardless of whether the deforestation occurred due to anthropogenic or non-anthropogenic reasons such as a natural disaster.* • *ARR activities can only generate credits after all the losses in previously generated credits are duly accounted for per VCS requirements and all credits used from the VCS buffer pool are replenished.* **Point 2** We have changed the following text in Section 8.1.5.2 to ensure that the areas non-forest to forest transition described in the methodology is applicable only in the areas that were forest at the start of the project. *Likewise, both transitions from forest to non-forest and non-forest to forest (and that were forest at the start of the crediting period, per applicability condition 1) shall be included in the baseline. Note that the quantification of transitions of non-forest to forest areas shall not be based on areas on which large-scale reforestation has occurred as such areas should have been excluded from the reference region.*
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report:</u>** The changes referenced above were made in the methodology. **Point 1** In response to NCR 01/11 the developers explained that, "*...ALM activities were excluded from the grouping, since no agricultural projects can be executed in forest area.*" However ALM is still mentioned

	in the section as a project type which is inconsistent with this statement. In section 9.3.11.1 'Addition of New Project Area Parcels' it is stated, "*The new project area is comparable with the reference region*". The developers explained that they meant, "*the comparison has to be done not for all individual project parcels separately, but for the new project area as a whole.*" This section was found to be ambiguous because as written it is not clear what, "comparable" means or how that would be determined. There was also found to be insufficient guidance as to when additional areas can be added and when they can start crediting, and whether restrictions to adding areas exist (such as areas that were previously in the leakage belt for example). In section, "9.3.11.2 Addition of New Project Activities" it is stated that "*Only areas that were not forest at the start of the project are eligible for ARR activities.*" It also states, "*However, areas that underwent a natural disaster such as a fire, hurricane, or flood, after the start of the crediting period may also qualify for ARR activities.*" These statements were found not to align with the VCS's requirements for treatment of areas that suffer losses of forest cover during the project. The VCS standard has sufficient guidance on how to handle such situations and any project is free to include surrounding areas in another RA project. As such it was determined that it is incorrect and unnecessary to include such provisions regarding ARR in a REDD methodology (unless the methodology took a comprehensive approach to including ARR as an activity and included it throughout the methodology, complying with all ARR requirements). All findings related to cookstoves are now reported under NCR 06/11, and are no longer a part of this NCR. **Point 2** The developers have explained that non-forest to forest transitions are only included as part of the baseline in areas that were forest at the start of the project. This is acceptable. In 8.5.1.2 it is stated, "deforestation in the baseline may only be included if natural forest establishment under the baseline is included as well." However, following a discussion with the developers it was revealed that any transition from non-forest to forest would be included (except for large scale plantations – which would be excluded), and it would only be areas that were forest, and then were deforested. This was not clear from the text as written.

	Given the ambiguities mentioned above, this NCR remains open. **<u>Findings from Third Assessment Report</u>** **Point 1** References to ALM have been removed. The approach to similarity has been improved and is now acceptable. The timing of adding new areas is now clear. The methodology developer provided additional clarification regarding the addition of new project areas. Further, the methodology developer has revised the methodology to provide clarification on the application of equation logic for ARR projects, as well as the provided clarification with the methodology regarding the inclusion of emission removals from ARR project activities. The revised text within version 5.0 of the methodology has satisfied the reviewer concerns and as such this NCR is closed. **Point 2** The inclusion of afforestation in the baseline is now clear. As a result of the clarification of ARR activities in the baseline calculations this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	02/11
Standard & Requirement:	VCS v3, VCS Standard 4.3: Applicability conditions
Report Section:	Appendix A, 1.4
Description of Non-conformance and Related Evidence:	
Point 1 The methodology contains specific applicability conditions for its use. However, applicability condition 4 which requires "*data on past land use, land cover, and forest cover are available for at least four points in time in the reference region*" contradicts the requirements in section 8.2.1, which only ask for "*at least three*" images of forest cover during the historical reference period. **Point 2** VM0006 (upon which this methodology is based) had as an applicability condition that "The project areas shall not include organic soils (e.g., peat-lands), or wetlands". No such applicability is in the new methodology therefore, it is not clear if the proposed methodology applies to peatlands, since its applicability conditions do not specify it.	

Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** **Point 1** The applicability criteria erroneously reported the required number of images. The related applicability conditions was changed as below: *Accurate data on past land use, land cover, and forest cover are available for at least three points in time in the reference region, with at least one remote sensing image (i.e., data) from 0-1 year before the project start date, at least one image from 2-5 years before the project start date, and at least one image from 5-15 years before the project start date must be available. No images older than 15 years may be used for the historical reference period.* **Point 2** The following applicability condition was added back into the methodology to restrict using this methodology in peat-lands. *The project and leakage area must exclude organic soils or peatland.*
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report</u>** **Points 1 and 2** The methodology was changed as described above and the NCR was considered to be adequately addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	03/11
Standard & Requirement:	VCS v3, 2.1. VCS AFOLU Requirements 4.2.9: Project eligibility
Report Section:	Appendix A, 2.1
Description of Non-conformance and Related Evidence:	
The methodology, in section 2, states that it "*sets out the project conditions and carbon accounting procedures for activities aimed at reducing unplanned anthropogenic deforestation and forest degradation of the mosaic type*". However, in the list of drivers in section 4.3 it is not clear that some of these are unplanned (for example 4.3.4 – logging of timber for commercial scale). In addition, in section 8.3.3 the final bullet point gives an example of timber concessions that may be granted when discussing leakage. It is therefore not clear that the methodology is only intended for unplanned deforestation.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s)

	referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** A note on applicability criteria 3 (i.e. for drivers of deforestation) was added to indicate that drivers of deforestation applicable to planned REDD project must be excluded while applying this methodology. This note will ensure that methodology will not be applied to design a project where planned forest deforestation activities are prevalent. The added note is shown below: *None of the drivers listed here may be planned in nature. If deforestation from a specific driver is occurring as a result of planned forest conversion activities, then such a driver must be excluded from analysis.* The example mentioned in section 8.3.3 was revised to further state that this methodology is meant for unplanned mosaic type REDD projects. The revised text is shown below: *Drivers that are less geographically constrained will still be confined to a "sphere of influence". For example, illegal timber logging activities may shift outside of project boundary, possibly to outside of provincial boundary, upon inception of REDD project activity. In this case, the sphere of influence of the driver is national. However, for the purpose of this methodology, planned timber concessions, must not be considered within "sphere of influence".*
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** The methodology was changed as described above and the NCR was addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	04/11
Standard & Requirement:	VCS v3, 3.1.VCS Standard 4.4: Project boundary
Report Section:	Appendix A, 3.1
Description of Non-conformance and Related Evidence:	
Point 1 Section 5.3 identifies three spatial boundaries: the project area, the reference region and the leakage belt, which are defined in section 3. However, whilst section 5.3 states that "*After the start of the project, the reference region **may** not contain the project area and leakage belt*", section 3 reads "*After the project has started (i.e. during the crediting period) the reference region **excludes** the project and leakage areas*", and section 8.1.2 states that "*a stratified regional baseline (Sathaye and Andrasko, 2007) must be developed in a reference region **around** the project area*", and also that "*Note that before the project start date, i.e. during the historical reference period, the reference region **must***	

include the project and leakage areas. (…) However, after project start, the reference region ***may*** *not include the project and leakage areas anymore*" (emphasis in bold added by the auditors). These differences in language could lead to confusion regarding when the project area shall be considered within the reference region.

Point 2

Also, section 5.3 fixes the size of the reference region at 250,000 ha (this figure is exclusive of the project area and leakage areas) regardless of the size of the project area without providing any evidence to justify this figure.

Point 3

Moreover, the methodology states that "*The boundaries of the reference region must coincide with natural, geopolitical or watershed boundaries. However, in case the project area shares a border with a natural, geopolitical or watershed boundary, the boundary of the reference region may be extended outwards by applying a buffer around the project area*". This provision was found to require a number of clarifications:

- How is a natural boundary defined?
- How are natural and watershed boundaries relevant to the definition of the RR (and representative of the PA)?
- How can it be ensured that applying these natural and watershed boundaries will lead to conservative baseline estimations?
- How are the size and boundaries of the proposed buffer determined?

Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** **Point 1** In order to consolidate the definitions used in this methodology, we removed the geographic description of reference region boundary from definition section. The reference regarding the reference region (and exclusion of project and leakage area) was removed from section 8.1.2. Also, "around the project area" text was removed from the sentence in this section. With these changes, the only place where geographic boundary of reference region appears is in section 5.3 which makes it clear that the reference region may not contain the project area and leakage belt after the project starts and it must contain both project area and leakage belt before the project start date. We edited the statement in section 5.3 on reference region as following: *Before the start of the project, the reference region must include the project area and leakage area. After the start of the project, the reference region must exclude the project area and leakage belt.*

	These changes resolve any ambiguity caused by texts spread over difference places. **Point 2** We would like to go over a little background to justify the size of reference region. We would like to point out that sharing of reference region is not an ineligible activity for a REDD project. When multiple REDD projects are allowed under current VCS standards, a large grouped REDD project can still be designed with much smaller reference region by including multiple areas (as group members) sharing the same reference region. Thus, defining the reference region size as a factor (or in proportion) of the size of the project area as it is known at validation does not help solve the problem of having a "not large enough" reference region. The purpose of setting the size of reference region is to safeguard against circumventing the proportionality requirements (as in VMU and few other methodologies) that can arise in grouped projects. We have modified the requirement to have a reference region of at least 250,000 ha or equal to the project area size at the start of the crediting period, whichever is greatest. 250,000 ha (excluding the project area) is comparatively large to extract deforestation rate for a sub-national REDD projects of size 250,000 ha. The size of reference region is revised as below: *The minimum size of the reference region excluding the project area is at least 250,000 ha or the size of the project area at the start of the crediting period, whichever is greater. If the entire country or autonomous territory is less than this size, then the reference region must be equal to the entire country or that territory. When a project area is located on an island which is smaller than the required reference region, then it is sufficient to have the island as the reference region.* **Point 3** The following definition was added to the text.c *A natural boundary is a boundary of a naturally occurring phenomenon such as a river, mountain range, lake, ocean, or watershed.* By using existing boundaries, the probability that the boundaries are drawn just to inflate the baseline deforestation rate is reduced. However, a proposed boundary in a Project Document will still have to be verified by an auditor to ensure there is no bias. It is simply impossible to draft rules. The following text was added to reflect this rationale: *A reference region must be representative of the future trajectory of the project area in absence of project activities. For a reference region to be fully representative, and selected without any bias, the following necessary conditions must be met.* The size of the buffer was calibrated as a reasonable "sphere of influence" for typical agents of deforestation within mosaic deforestation.
Findings for Evaluation of	**<u>Findings from Second Assessment Report</u>**

Evidence:	**Point 1** The methodology was changed as described above and the NCR was addressed. **Point 2** The methodology was changed as described above and the justification was found to be adequate, thus the NCR was addressed. **Point 3** The methodology was changed as described above and the NCR was considered to be adequately addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	05/11
Standard & Requirement:	VCS v3, VCS Standard 4.4: GHG SSRs
Report Section:	Appendix A, 3.2
Description of Non-conformance and Related Evidence:	
Point 1 The methodology identifies the GHG and sources relevant to the project in Table 1, which also indicates which of them must be included (or not) in the project and baseline estimations and provides a justification for this inclusion. Regarding the project emissions/sources, the Table was found to be consistent with VCS requirements. However, it was found that this table was not consistent with text in section 2 stating that "*All changes in GHG emissions that are not related to carbon pools and that are directly attributable to project activities, must be recorded. These include fuel CO_2 emissions due to patrolling of the forest*". It must be noted that CO_2 emissions from patrolling in the project case are considered insignificant by the VCS AFOLU requirements (see section 3.4 of this report). **Point 2** Baseline GHG and emission sources are also identified and justified in Table 1. The table states that CH_4 emissions from deforestation and forest degradation are significant when fire is used to clear the land, however, later, in section 8.4.5 it is stated that, "Since N_2O and CH_4 emissions from forest fires increase emissions; they can be conservatively omitted for baseline calculations". The methodology is thus not internally consistent in its treatment of this source. **Point 3** The title of Table 2 is "*GHG emissions from sources not related to changes in carbon pools ("emission sources") to be included in the GHG assessment*"; nevertheless, the table contains emissions of CO_2 from deforestation and forest degradation and considers them "*significant*". However, the bulk of carbon emissions from REDD projects arise from carbon stock changes and not in the form of CO_2 emissions from sources.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence

	above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** **Point 1** Table 1 is edited to include only gases not already included in "Carbon pool". The statement related to emissions from patrolling activities is removed. **Point 2** The inclusion of CH_4 in Table 1 under the baseline section was incorrect and is now excluded from this table. The related sentence in section 8.4.5 was redundant with Table 1 and is now deleted. **Point 3** The title of this table is now made consistent with the contents.
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** **Point 1,2 & 3** The methodology was changed as described above and the NCR was considered to be adequately addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	06/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.5.1: Emission quantification
Report Section:	Appendix A, 6.1
Description of Non-conformance and Related Evidence:	
Point 1 Section 13.3, '13.3 Calculation of Ex-post GHG Emissions and Changes in Sinks under the Project Scenario inside the Project Area' has a significant amount of text on the subject of credits derived from cookstoves, However, this text is not integrated with the rest of the methodology, and it is not clear how this follows IPCC or VCS guidelines. There are further potential issues with the cookstove approach that are articulated in the paragraph below: The CDM Gold website (http://www.cdmgoldstandard.org/Gold-Standard-Methodologies.347.0.html) shows that the methodology referenced has increased to version 2, and will be replaced on 30 June 11 by another methodology. It is not clear why this concept of credits from cookstoves is introduced only in the monitoring section and not included throughout (for example in the baseline generation section – how do you generate baseline for cookstoves?) (e.g. The cookstove option of creating credits is not mentioned in table 1) (see also section 5.3 of this report). In TUV-SUDs report on VM0006, on page 116, the methodology proponents state that, "Regular fuel-wood harvesting does not lead to more than 25% of the total deforestation within the project." It is not clear if this criteria still included, and if not, why not. In section 14, parameters MN61 and MN62 require that counts of the number of fuel efficient stoves acquired by the project and used by the project are	

recorded. It is not clear where these parameters are used because it is not stated. It is not clear if this is in addition to the monitoring requirements of the cookstove methodology. It would therefore seem that section 14 is intended to cover all the requirements for cookstove credit calculation. Still in section 13.3, it is stated that a factor of"0.75" is used to discount the credits from fuel-efficient woodstoves, It is not clear what this refers to, as no such deduction could be found in the methodology.

Point 2
QA/QC and uncertainty analysis

Section 15.2 describes the methodology's Conservative Approach and Uncertainties, whilst section 15.3 covers Quality Assurance and Quality Control Procedures. Neither of these sections makes reference to the IPCC Guidelines, therefore it has not transparent how the IPCC guidelines have been followed.

In section 9.4.2.1 it is stated that: *"Ex-ante, values for biomass densities in ANR areas must be based on pilot projects or data on biomass increases in regenerating forests from the literature. Ex-post, this quantity must to be monitored for actual biomass according to a network of permanent sampling plots according to the procedures within this document. Select a sampling design with a precision of minimally 90%"*. VM0006 requires a minimal precision of 95% it is not clear how this change is justified.

Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence provided for Second Assessment Report** **Point 1** We completely revised the cookstove section to deal with these issues. **Point 2** It was an error. The threshold is changed to 95% CI and 15% prevision (see revised text) *Select a sampling design with a confidence level of 95%.* **Evidence for Third Assessment Report** **Point 1** We have modified the equation as below to resolve ambiguity. $nrCFE$ is defined under parameter $i =$ as an upper limit, as well as a separate line in the parameter table. $$ER_{CFE}(t) = \sum_{i=1}^{nrCFE} HH_{non-CFE}(i,t) \cdot Fuelwood(t) \cdot BEF_2 \cdot \rho_{wood} \cdot CF \cdot \left(1 - \frac{\eta_{old}}{\eta_{new}}\right) \cdot f_{NRB} \cdot NCV biomass \cdot EF_{NRWB} \cdot \frac{44}{12} \quad [EQ1]$$ where:

	$ER_{CFE}(t)$	=	Emission reduction from CFE activities during the year t from cook stoves in the project area. [t CO2e]
	$Fuelwood(t)$	=	Average annual volume of biomass fuel consumed by households in the absence of the project activity in year t for cooking purpose. [m^3 yr^{-1} HH^{-1}]
	$HH_{non-CFE}(t,i)$		Total number of households in the project area that collect biomass fuel from the project area and use i number of efficient or alternative appliances under the project scenario and do not use CFE under the baseline in year t. [-]
	i	=	Number of improved cookstoves and/or fuel efficient appliances from 1 to $nrCFE$ [-]
	$nrCFE$	=	Number of CFE activities [-]
	BEF_2	=	Biomass expansion factor for converting volumes of extracted roundwood to total above ground biomass (including bark), estimated using GPG LULUCF[-]
	ρ_{wood}	=	Basic wood density, estimated using GPG LULUCF [Mg DM m^{-3}]
	CF	=	Carbon fraction of dry biomass. [Mg C (Mg DM)$^{-1}$]
	η_{old}	=	Efficiency of the baseline cook stoves or appliances being replaced. [-]
	η_{new}	=	Efficiency of the project CFE appliances deployed. [-]
	f_{NRB}	=	Fraction of “non-renewable” woody biomass being used saved by the project activity in year t. The share of renewable and non-renewable woody biomass (i.e. the quantity of woody biomass used in the absence of the project activity) must be determined by using surveys or government data (if available) to estimate f_{NRB} . [-]
	$NCV_{biomass}$	=	Net calorific value of non-renewable biomass that is substituted. [TJ (Mg DM)$^{-1}$]

	EF_{NRWB} = Emission factor for the substitution of non-renewable woody biomass by similar consumers. [Mg DM TJ^{-1}] We were contacted by VCS on this issue and we know that credits can be included. We were also made aware that VCS provided guidance to RA in this matter. **Point 2** The lack of response to this NCR was an oversight from our side. As discussed and agreed on earlier, we propose to include the following in Section describing Conservative Approach and Uncertainty: *The IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry must be used whenever reliable local data is not available or when uncertainty in data is not known to remain conservative.* In addition, we propose to include the following in Section describing Quality Assurance and Quality Control: The stipulations in the *IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry* on quality assurance/quality control (QA/QC) analysis were followed within this methodology, and must be followed by project proponents when designing a QA/QC plan.
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report:</u>** **Point 1** The approach to the inclusion of cookstove uptake as a source of credits has been changed since the last version of the methodology. It has been simplified and the additional GHG benefit is calculated in just one equation [EQ70]. This equation was found to contain an error in that it did not calculate how many stoves were used. In discussion with developers the source of this issue was a misnamed, and incorrectly described parameter. The auditors asked for an explanation of how the methodology was able to condense the detail of methodology from which it was derived into one single equation and also how it differed from their previous approach which referenced a CDM Gold Methodology. The following response was provided by the developers, "*The following is a list of the key differences between the new approach to account for cookstoves and the one that was referenced before:* • *The current procedure in the methodology is based on an approved CDM meth and therefore qualifies as eligible procedure under VCS.* • *The CDM methodology allows the use of simple default factors to quantify the efficiency of appliances provided by the IPCC and the net calorific value of non-renewable biomass.* • *The Gold Standard Methodology, referenced in the previous version of the methodology does not*

	allow other thermal-based stoves and appliances while the CDM methodology does allow such appliances. • *The Gold Standard Methodology requires time consuming and expensive monitoring of efficiency of cookstoves. The implementation of these procedures is time consuming and expensive and only provides limited extra accuracy. The CDM methodology for cookstove is easier to use, less expensive.*" The auditors requested a spreadsheet that demonstrates the calculation in the equation. The calculation was not understood by the auditors because if the number of stoves remains constant, but the number of households NOT using improved stoves increases, then the emissions reductions increase. It was explained by the developers that the reason was because of the old equation being used, and the fact that the equation stratifies households by the number of stoves they use. This stratification was not clearly explained in the methodology because the 'nrCFE' parameter which sits above the sigma sign in equation 70 is not described beneath the equation. The VCS have not yet responded to a request from the audit team to confirm if cookstove credits can be included in a VCS v3.1 methodology, and if so, what the requirements for assessment are. As clarification from the VCS has not been provided to confirm the eligibility of credits from cookstoves, this NCR remains open. **Point 2** The NCR stated, "Section 15.2 describes the methodology's Conservative Approach and Uncertainties, whilst section 15.3 covers Quality Assurance and Quality Control Procedures. Neither of these sections makes reference to the IPCC Guidelines, therefore it has not transparent how the IPCC guidelines have been followed." This issue was not addressed by the developers. The methodology was changed as described above, but this has only resulted in the CI part of point 2 being addressed, the other elements of the NCR still need be addressed as described above. **<u>Findings from Third Assessment Report</u>** **Point 1** The equation has been clarified sufficiently and an example spreadsheet that was sent calculated emissions reductions correctly in accordance with the methodology. The VCS provided the following response with regard to cookstove credit inclusion on November 22nd (Clarification Questions to VCS from RA v0 4 – Carolyn Ching), "There is no rule against having a cookstove component with this methodology. To some degree this

	methodology includes components of sectoral scope 3, energy demand, into it. There are no specific requirements within the AFOLU Requirements that RA would audit against; however, it should be audited against the VCS Standard, similar to the fossil fuel components of an AFOLU methodology. The VCSA will request that the second validator be accredited in Sectoral Scope 3 and 14 to ensure an overarching review of combining this activity into the REDD methodology. " The changes made and confirmation from VCS means that NCR has been addressed. **Point 2** The methodology now satisfactorily references IPCC guidelines, as such this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	07/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.6.1: Leakage quantification
Report Section:	Appendix A, 7.1
Description of Non-conformance and Related Evidence:	
I Market Leakage In section 10.1 there is an assumption that market leakage will be "negligible" because the methodology, "does not allow that timber from the project area is sold or transferred beyond the participating communities" (Section 10.1). However, the auditors cannot find any such restriction in the methodology. Applicability condition 4.3.4 is, "logging of timber for commercial scale (i.e., wood planks or poles for commercial scale)". Nothing is mentioned about the buyers of this wood. Therefore, it is not clear to what extent market leakage needs to be quantified. **II Activity Shifting Leakage** in the sub-sections of 10.2.1 where the leakage cancellation rates are calculated, there was found to be inadequate description in the parameters and surrounding text to clearly explain how the equations need to be completed. For example in 6, "fuelwood collection for domestic and local industrial needs it is not clear what the subscripts, "project", "baseline" and "allowed" mean, and thus it is not clear how the equation should be executed.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation

Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** **I Market Leakage** Please see response to NCR#: 20/11. An abbreviated explanation is given here. When extraction of timber for domestic use is a driver of deforestation, leakage due to timber extraction will be detected through the monitoring of activity-shifting leakage. However, when the drivers operate to supply domestic well as global timber markets, any restriction of the timber supply may cause market leakage and the VCS Market Leakage tool must be used. The required identification and analysis of drivers of deforestation is sufficient to determine whether market leakage assessment is needed. **II Activity Shifting Leakage** We have added the following explanation for using the equation in this section: *Any variable with subscript "allowed" indicates that the amount contained in that variable is allowed under the project. Similarly, variables with subscript "project" and "baseline" respectively indicate amount demanded under project and baseline. For example, as part of the REDD project strategy, measures can be put in place to reduce the allowed extraction of certain forest products and reduce the demand for these forest products. Any demand for forest products which cannot be eliminated and cannot be met by the allowed production can cause leakage. Leakage must be calculated as a function of baseline demand, project demand and project supply. If the project intervention does not expect any reduction in demand under the project scenario, any parameter with subscript "project" must be equal to corresponding parameters with subscript "baseline". Similarly, if no deforestation and/or degradation parameter is allowed/expected under project scenario then parameter with subscript "allowed' must be set to "0" in these calculations. An example of this calculation is given here for illustration.* *Assume that logging of timber is one of the drivers of deforestation. Under the baseline, the demand for timber within participating communities is equivalent to 100 arbitrary units. When the REDD project is implemented and timber harvesting from forests is completely restricted, participating communities are likely to shift to other forest areas to meet the demand, and causing 100% leakage. On the other hand, when it is allowed to harvest 80 units of timber in the REDD project area, only 20 units of timber must be acquired from surrounding areas, causing a leakage of 20 units (or in this example 100% leakage). When the project implementation seeks to reduce the demand for forest products itself, such as by increasing the efficiency to 90 units while other parameters are constant, then there is leakage of 10 units or 50%.* Additionally, we revised parameter description for clarity around subscripts, "project", "baseline" and "allowed". **<u>Evidence for Third Assessment Report</u>**

	II Activity Shifting Leakage $DFW_{allowed}$ is now descried as *Biomass (dry matter) of allowed fuelwood collection in the project area under the project scenario as defined in a management plan/project document. [$m^3\ yr^{-1}$]* $$leakage_{constrained}(fuel\text{-}wood) = \frac{DFW_{project} - DFW_{allowed}}{DFW_{baseline} - DFW_{allowed}}$$ For clarity, following example is added in the methodology immediately after Eq. 78. *Assume that collection of fuel-wood for domestic uses is one of the drivers of deforestation. Under the baseline, the demand for fuel-wood within participating communities is equivalent to 100 arbitrary units ($DFW_{baseline} = 100$). When it is allowed to harvest only 80 units of fuel-wood in the REDD project area ($DFW_{allowed} = 80$) without implementing any energy efficiency measures, the demand will remain constant under the project scenario ($DFW_{project} = 100$), causing a leakage of 20 units or 100%, because:* $$leakage_{constrained}(fuel\text{-}wood) = \frac{100 - 80}{100 - 80} = 100\%$$ *However, when the project implementation reduces the demand for forest products itself, such as by increasing the efficiency and reducing the demand from 100 to only 90 units, $DFW_{project} = 90$), then there is leakage of 10 units or 50%, since:* $$leakage_{constrained}(fuel\text{-}wood) = \frac{90 - 80}{100 - 80} = 50\%$$ We have now provided additional clarity with the following text: *As part of project activities, forest management plan and land use planning will be in place. These plans streamline and limit the amount of wood that can be harvested from the forest. When it is allowed to harvest only 80 units of fuel-wood (as part of project activity) in the REDD project area.* Additionally, a similar example in the methodology which used to be in the paragraph just before "**Conversion of forest land to cropland for subsistence farming by participating communities"** was deleted.
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report</u>** **I Market Leakage** The response provided was found to be adequate. This part of the NCR has been addressed. **II Activity Shifting Leakage**

	In response to NCR 07/11, an explanation and example of how to calculate the leakage cancellation rates has been added. However, the example given does align well with the equations and the parameter $DFW_{allowed}$ is not clearly described. Therefore ambiguity remains and the NCR remains open. **Findings from Third Assessment Report** **II Activity Shifting Leakage** The new example and removal of the prevision example is sufficient to add clarity and close the NCR.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	08/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.6.4: Market leakage and VCS AFOLU Requirements 4.6: Project specific leakage requirements
Report Section:	Appendix A, 7.4 and 7.8
Description of Non-conformance and Related Evidence:	
In section 10.3 it is stated that market leakage for some elements of the project area calculated using the VCS market leakage approach. However, Part 5 of equation 90, which is also equation 96, does not include this. Therefore there is no mechanism in the equations by which market leakage can be accounted for. Please also see the findings in section 7.1 in Appendix A, there is inconsistency about whether or not there is likely to be any market leakage in from the allowed project activities.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** Please see response and related revision and illustrations from NCR#: 20/11 and NCR#: 7/11. It has now been clarified about the use of market leakage and activity leakages. We have modified equation 90 to allow inclusion of market leakage (if applicable). $❺ = - GHG_{otherLeakageSources}(t) - GHG_{marketLeakage}(t)$ We have included the following for describing this newly added parameter in section where this equation

<table>
<tr><td></td><td>is shown as below:

We have also added corresponding table in “Parameter Monitored Section” as shown below:
<table>
<tr><td>Data/parameter</td><td>$GHG_{marketLeakage}(t)$</td></tr>
<tr><td>Data unit:</td><td>[tCO_2 yr^{-1}]</td></tr>
<tr><td>$GHG_{marketLeakage}(t)$ =</td><td>GHG emissions from market leakage at time t. [tCO_2-eq]. This must be quantified using VCS Tool for the Estimation of Market Leakage.</td></tr>
<tr><td>Used in equations:</td><td></td></tr>
<tr><td>Description:</td><td>GHG emissions due to market leakage in time t.</td></tr>
<tr><td>Sources of data:</td><td>Field inventory/Surveys.</td></tr>
<tr><td>Measurement procedures:</td><td>Use VCS tools for Estimating Market Leakage.</td></tr>
<tr><td>Frequency of monitoring:</td><td>To be update at baseline update</td></tr>
</table></td></tr>
<tr><td>Findings for Evaluation of Evidence:</td><td><u>Findings for Second Assessment Report</u>
The methodology was changed as described above and the NCR was considered adequately addressed.</td></tr>
<tr><td>NCR Status:</td><td>CLOSED</td></tr>
<tr><td>Comments (optional):</td><td>None</td></tr>
</table>

<table>
<tr><td>NCR#:</td><td>09/11</td></tr>
<tr><td>Standard & Requirement:</td><td>VCS v3, VCS AFOLU Requirements 4.6.6: Leakage mitigation</td></tr>
<tr><td>Report Section:</td><td>Appendix A, 7.6</td></tr>
<tr><td colspan="2">Description of Non-conformance and Related Evidence:</td></tr>
<tr><td colspan="2">In many of the sub-sections in 10.4, “organic soils” are mentioned. The developers clarified that this meant peat. Consistent definitions and naming is required for the emissions from leakage prevention to calculated without ambiguity.</td></tr>
<tr><td>Corrective Action Request:</td><td>Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above.
Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.</td></tr>
<tr><td>Timeline for Conformance:</td><td>Prior to validation</td></tr>
<tr><td>Evidence Provided by Organization:</td><td><u>Evidence for Second Assessment Report</u>
The new applicability criteria added (see NCR# 2/11) clarifies that organic soil or peatland must be excluded to apply this methodology. The use of term “organic soil” is consistent.</td></tr>
<tr><td>Findings for Evaluation of Evidence:</td><td><u>Findings for Second Assessment Report</u>
The methodology was changed as described above and the NCR was considered adequately addressed.</td></tr>
</table>

NCR Status:	CLOSED
Comments (optional):	None

NCR#:	10/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.6.7: Positive leakage
Report Section:	Appendix A, 7.7
Description of Non-conformance and Related Evidence:	
The methodology does not contain explicit language on how to avoid crediting for positive leakage should the emissions in the leakage belt during the project scenario be less than projected in the baseline scenario (in equations 93 and 95).	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** We have added following text in section 8.4.6 "Estimate Ex-ante NERs" after the equations are defined. *Positive leakage is not allowed. Therefore, values for equations [97] and [99] must be set to "0" if they are found to be greater than 0.*
Findings for Evaluation of Evidence:	**Findings for Second Assessment Report** The methodology was changed as described above and the NCR was considered adequately addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	11/11
Standard & Requirement:	VCS v3, VCS Standard 4.7: GHG quantification of baseline scenario
Report Section:	Appendix A, 8.1
Description of Non-conformance and Related Evidence:	
Point 1 The following issues were identified by the audit team regarding the LULC component of the methodology**:** 1. In section 8.1.1 the methodology states that project area parcels must be supplied in a common GIS software format. This does not comply with VCS provisions, which require KML format. 2. In section 8.1.2 planned deforestation areas within the reference region are not explicitly excluded from the baseline calculations in order to avoid inflating baseline emissions. 3. Applicability condition 4 requires that, "Accurate data on past land use, land cover, and forest cover are available for at least four points in time in the reference region". This is not consistent with what is asked for later in sections 8.2.1, and 8.2.4.3, where this	

requirement was reduced to 3 images (see also section 1.6 of this report). This issue also leads to confusion regarding the discount estimated in step 3 of section 8.2.4.3, which reads "*An absolute minimum of three images is required to quantify the historical deforestation and degradation rates. Credits must be further discounted by multiplying the factors from steps 1 and 2 with a factor 0.9 when only four images are used. If four or more images are used, no additional discounting is required".*

4. In section 8.3.2, substep 1, it is stated that the number of grazing animals is counted within, "the project boundary baseline". It is not clear what this means.
5. Section 8.5.3 – 7 states "*The difference in aggregated deforestation and forest degradation rates as well as forest stratum and LULC-class transition rates averaged over all the time periods (in between images of the reference period) between empirically observed and modelled rates may not be more than 15%*". VM0006, on which the proposed methodology is based, requires 10%. It is not clear why this modification was made or how it may be justified, given that it affects the accuracy of the baseline.

Point 2

In addition to the issues listed above, issues were found specifically with the ANR element of the methodology. The main issues are listed below:

1. It was not clear that ANR activities are allowed under VCS AUD if the areas of forest are not going to be deforested during the crediting period. This would appear to just be an IFM LtHP project. It is acknowledged that the AFOLU Requirements 4.2.6 state ANR is a way that can generate credits in REDD projects, but that was assumed to mean only for areas that would have been deforested.
2. It was not clear that the method was generating credits for permanent sequestration that would not have happened in the absence of the project. Equation 97 gives credits in any year if the change in carbon stocks measured is greater than the change expected from the NAI rate. However, this does not consider that at some point equilibrium may be reached and growth rates may slow. The actual effect of ANR over the long term may be to speed up the time it takes to reach the equilibrium, but not actually provide any long term additional sequestration.
3. *In section 8.5, it is not clear how increases in carbon stocks through Assisted Natural Regeneration are credited. Figure 2, as well as the last bullet in the text below it ("For area without ANR") and the sentence below Equation 29 ("For the area with ANR") are particularly confusing, since they fail to identify with clarity in which type of LULC in the baseline ANR activities may be credited, as well as the role of reforestation in the methodology (an invalid activity according to section 8.5.2).*
4. In Section 2, bullet 4, it is stated that "In addition, assisted natural regeneration activities are allowed as a leakage prevention activity", which contradicts the treatment of this activity throughout the methodology.

In summary, the approach to claiming credits for ANR activities was not clearly demonstrated as being within VCS rules in terms of project type and also in terms of being an activity generating long terms additional carbon stocks. The approach was also ambiguously executed.

Point 3

It must be noted that the proposed methodology allows crediting for decreasing the consumption of fuelwood through the introduction of fuel-efficient cookstoves when avoided degradation is not credited. However, there is no guidance in the baseline section on how to develop a baseline for this activity or on how it shall be included (or not) into the overall project accounting under this methodology. Moreover, the methodology mandates the use of the approved gold standard methodology "Indicative Programme, Baseline, and Monitoring Methodology

for Improved Cookstoves and Kitchen Regimes", although the Gold Standard is not an approved GHG program under the VCS. In summary, it is not clear how cookstove crediting is integrated into the methodology as a whole and whether this is permissible under VCS rules. **Point 4** Ex-ante estimations of baseline emissions and removals are also covered in section 13.2. However, this section only points out a number of parameters relevant to this calculation extracted from Equation 91 (which estimates net emission reductions), but does not provide specific instructions or equations to estimate baseline emissions and removals. The auditors understand that the intention is that the equations in the earlier sections are drawn upon to calculate the parameters, but the lack of explanations, a structured approach or clear cross referencing make it difficult to follow. Moreover, it is not clear why this section is included as part of the monitoring methodology and not in the baseline methodology.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** **Point 1** 1. We revised the statement in section 8.1.1. to make the KML format mandatory. *Project proponents shall provide digital (vector-based) files of the discrete project area parcels in Keyhole Markup Language (KML) file format as required by VCS.* 2. In order to avoid inflating the deforestation caused by inclusion of planned deforestation areas into baseline emissions, we added the following requirements in section 8.1.1.2: *The reference region must exclude areas where planned deforestation activities took place. The validation and/or verification bodies may ask project proponent for evidences to show that all the planned deforestation areas have been excluded from the reference region or proof of non-existence of such areas within the reference region.* 3. The required number of images is three. This was corrected throughout the methodology. 4. This is corrected in 8.1.3.2 as: a. *Number of grazing animals of type g within the project boundary under the baseline scenario. [-]* 5. This change was made to ensure consistency with the requirements on error thresholds in the new version of the VCS guidance. In the previous version of the AFOLU guidance, there was no requirement or guidance from VCS on using error thresholds. The VCS now requires that uncertainty must not be more than 15%. Therefore, we have used a minimal value of 15% throughout the methodology. **Point 2** 1. ANR activities can be implemented in any areas that are likely to be degraded/deforested. IFM

	LtHP is not eligible because the forests in the project area are not managed forests with a primary function of timber production. A forest in which some unplanned logging has taken place is not truly a managed forest, and therefore cannot be eligible for IFM. In the absence of the project activity, the project will either remain degraded or will become completely deforested. The ANR activity is likely is to bring degraded forest back to the normal stocking level and will ensure that the stocking level remains making it additional. Regarding "*The actual effect of ANR over the long term may be to speed up the time it takes to reach the equilibrium, but not actually provide any long term additional sequestration*.": any empirical observed increase in sequestration over a baseline is additional. The sentence suggests that non-additional credits may be calculated using the approach outlined in the methodology. We do not see how this is possible since all accounting for ANR is based on empirical measurements and follows the time horizons as specified in the VCS standard. In the worst case scenario, ANR will simply shift the time it takes to reach a new equilibrium, but it will never be the cause of non-additional credits. 2. As explained before, reforestation is not an allowed activity to generate credits. However, the carbon accounting in the methodology does assume that natural reforestation can occur in some areas. The "Relative reforestation and forest regeneration rate" in Figure 2 refers to natural reforestation and regeneration, not any project activities. The *"For area without ANR"* and *"For area without ANR"* specifications near Figure 2 are only meant so that the quantification separates the baseline calculation for these two areas. Section 8.2.5 should be used to check the full eligibility for ANR. We referred to this section in the text under Figure 2: We have removed Figure 2 as this Figure led to confusion, and explained up-front why we need to distinguish ANR vs. non-ANR areas (Section 8.1.5.4) a. *The following steps are followed for each year of the modeling period, and must be done separately for the area with ANR and the area without ANR, so that the carbon accounting can be done separately for the with and without ANR areas.* 3 . The sentence "In addition, assisted natural regeneration activities are allowed as a leakage prevention activity" was deleted to avoid confusion **Point 3** We have completely revised the cookstove section which now specifies how to develop a baseline and is not dependent on the Gold Standard's methodology anymore. **Point 4**

	This section (13.2) is deleted. **<u>Evidence for Third Assessment Report</u>** **Point 1** We propose to change the requirement to include images of at least the previous 10 years for assessing historical deforestation. We propose to revise the text as below in the applicability criteria (i.e. criteria number 4): *Accurate data on past land use, land cover (LULC) and forest cover in the reference region are available for at least three points in time, with at least one remote sensing image (i.e., data) from 0-3 years before the project start date, at least one image from 4-9 years before the project start date, and at least one image from 10-15 years before the project start date. No images older than 15 years may be used for the historical reference period.* This change required to make changes in section 8.1.2.1. The revised text excerpt is shown below: *At least three images of forest cover are required during the historical reference period, (1) at least one image from 0-3 year before project start date, (2) at least one image from 4-9 years before project start date, and (3) at least one image from 10-15 years before project start date. No images older than 15 years may be used for the historical reference period.* Following changes in the first row, first column of Table 4 are also proposed: ***High to medium resolution*** *(≤ 30 m)* ***remote sensing data*** *are required for at least three time points: (1) at least one image from 0-3 years before project start date, (2) at least one image from 4-9 years before project start date, and (3) at least one image from 10-15 years before project start date. No images older than 15 years may be used for the historical reference period.* **Point 2** 1. The section on accounting for ANR areas was completely revised and includes some of the clarifications that were provided during the dialogue with the auditor. We appreciate the discussion with the auditor and believe this dialogue makes • The following clarifications were added to the summary: *In other words, the baseline scenario includes both projected degradation and deforestation, but also projected regeneration and reforestation in areas that were deforested. Similarly, the project scenario must include all forest class transitions, whether they are positive or negative.* *This methodology allows for silvicultural activities and enrichment planting activities to occur within degraded parts of the farts to accelerate the natural regeneration, promote forest regeneration, and provide opportunities for local employment. The accounting of these activities are simply based on a measured increase in biomass in the area in which*

	such activities were executed. • *The quoted text was clarified as:* *Because increases in forest biomass are quantified using biomass inventories following CDM-AR-ACM0001 version 03 (see section* **Error! Reference source not found.***), only retain values for transitions that do not represent increases in forest biomass in* $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$ *to avoid double counting. In other words, only retain transitions that represent deforestation and forest degradation in* $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$ *of Equations [EQ101] until [EQ109].* • The following clarification was added to the [EQ32]: *As explained in the summary, the baseline scenario includes not only projected degradation and deforestation, but also projected regeneration and reforestation in areas that were deforested. The equation below describes the carbon accounting for projected regeneration and reforestation under the baseline scenario.* • The introduction to the quantification section on ANR includes further explanation of the rationale of the quantification approach: *Because the general approach to quantify increases in biomass under the project scenario using remote sensing is not very sensitive to gradual changes in forest biomass, regeneration in the areas with ANR are better accounted for using forest biomass inventories only. As a consequence, the changes in carbon stocks in the ANR areas in the project scenario must be accounted for by directly measuring increases in forest biomass using forest biomass inventories.* • In the previous version of the methodology, degradation under the baseline scenario was conservatively omitted for the ANR areas. After our discussion, it became clear that this was unnecessary and, in fact, overly conservative, we have included degradation under the baseline scenario for the ANR areas. This further simplifies section 8.1.5.4. 2. In the revised version of the methodology, the area on which credits from ANR activities are credited can never exceed the area that has been deforested under the baseline scenario. For example, if the baseline scenario includes 500 ha of deforestation of which 100 ha becomes forest again due to natural reforestation, ANR credits may only be generated for 400 ha in the first year, 800 ha, in the second, 1200 ha in the third, etc. The following applicability criterion was added to section 8.2.4 ("Estimate net GHG sequestration from ANR activities"): • *The area on which credits from ANR activities are credited at a certain verification event can never exceed the area that would have been (net) deforested under the baseline scenario at that verification event. For example, if the baseline scenario includes 500 ha of deforestation per year of which 100 ha becomes forest again due to natural reforestation every year, ANR credits may only be generated for 400 ha in the first year, 800 ha, in the second, 1200 ha in the third, etc.* In addition, it was clarified in section 8.1.4.3 ("Determine the Sampling Design, i.e., Number, Location, and Layout of Plots") that sampling plots used to calculate plant emission factors can never be located inside of the ANR areas to avoid that growth is credited twice:

	• *This methodology allows to implement assisted natural regeneration (ANR) activities under certain conditions (see Section* **Error! Reference source not found.***). The sample plots used to calculate the plant emission factors shall not be located within areas in which ANR activities are planned. This requirement is necessary to prevent bias in the calculation of increases in forest biomass from natural regeneration.*
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report</u>** **Point 1** The methodology was changed as described above and was found to be satisfactory with the exception of one issue. With regard to (3), the requirements for images from which to derive the baseline (see quote below) do not meet the VCS criteria that, *"Such analysis shall be based on historical factors over at least the previous 10 years that explain past patterns and can be used to make future projections of deforestation" (VCS AFOLU Req 4.4.8.2b)* "*accurate data on past land use, land cover (LULC) and forest cover in the reference region are available for at least three points in time, with at least one remote sensing image (i.e., data) from 0-1 years before the project start date, at least one image from 2-5 years before the project start date, and at least one image from 6-15 years before the project start date"* **Point 2** The developers and audit team entered into considerable dialogue about the ANR section of the methodology. Please see Appendix C below for a full exploration of the issue regarding the accounting of areas with and without ANR. The conclusions of the auditors are as follows: 2 In general the methods for accounting for with and without ANR areas are not explained with enough clarity (for example, "*Because forest degradation is conservatively omitted on land on which ANR activities are planned, and increases in forest biomass are quantified using CDM-AR-ACM0001 version 03 (see section* ***Error! Reference source not found.****), set all forest degradation and forest regeneration values to zero on the ANR areas. In other words, only retain values for deforestation and increased forest cover transitions. These are the values for* $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$ *in Equations [EQ96] until [EQ104]."* It took significant time and effort for the auditors (working with the developers) to work out what the calculations were doing. This is due to the dispersed nature of the calculations, and lack of text/graphs to explain what the objective of the calculations were and how they functioned. 2. The methodology allows crediting (in 'with-ANR' areas) for growth in areas that would have experienced growth in the baseline scenario, although it is acknowledged that this growth would be

	accelerated in the project scenario. Because of these two issues the NCR remains open. **Point 3** The methodology was changed as described above and point 3 of the NCR was addressed. **Point 4** The methodology was changed as described above and point 4 of the NCR was addressed. **<u>Findings from Third Assessment Report</u>** **Point 1** The methodology has been revised as explained above and the VCS criteria are now met and the NCR is closed. **Point 2** Following additional clarification from the methodology developer, the methodology instructions with respect to steps for carbon accounting for areas with ANR and without ANR activities were revised. The revised text was found to address the reviewer concerns and as such this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	12/11
Standard & Requirement:	VCS v3, VCS Standard 4.7: GHG quantification of project scenario
Report Section:	Appendix A, 8.2
Description of Non-conformance and Related Evidence:	
The following issues were identified: • In the table in section 9.1.2 the maximal effectiveness quantification is derived for conversion of forestland to cropland by participating communities. The more conversion that is 'allowed' the higher the effectiveness quantification value is. The rationale behind this procedure is not clear. There was insufficient guidance for the equation to be used. • The introduction to section 9.3 states that the section is about emissions sources not related to pools. However, equation 59 has a 'pool loss' component. The ramifications of this were not traced through the methodology by the auditors because through discussion the Developers explained that it was an error.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above.

	Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** The quantification equations were revised in the table. An example of estimating effectiveness in addressing "Conversion of forest land to cropland by participating communities" is: $$effectiveness = \left(1 - \frac{\Delta area_{cropland,allowed}}{\Delta area_{cropland,baseline}}\right)\% \quad [2]$$ *Forest and land-use plans usually explicitly indicate how much land can be converted from forest to cropland. The baseline conversion rates must be estimated based remote sensing analysis, or social assessments when no remote sensing analysis is feasible* We also provided guidance on using these equations as stated below: *Any variable with subscript "allowed" represents the allowed quantity or amount under the project scenario within the project boundary. Analogously, the subscript "baseline" refers to the project boundary in the baseline scenario. At the start of the project, the information on parameters for baseline must come from the project area itself. During a baseline update, these values must come from reference region and/or leakage belts.* The introductory section was revised to ensure that any emissions (both pool and non-carbon pools) are to be estimated in this section. The introduction was revised as below: *Project activities may lead to an increase in emissions in the project area. Such increases in emissions must be accounted for, and subtracted from the GHG emission reductions generated by the project activities. The emission sources from project activities within the project area can be calculated as:* $$GHG_{sources,projectArea} = E_{fireBreaks} \quad [3]$$ *where:* $GHG_{sources,projectArea}$ = *Emission sources from project activities within the forests of the project area. [tCO_2-eq yr^{-1}]* $E_{fireBreaks}$ = *Annual GHG emissions from implementation of fire-preventing actions as REDD project activities. [tCO_2-eq yr^{-1}]* *The current version of the methodology allows estimating emissions sources from Fire Breaks and Other fire prevention measures. In addition, as part of the validation, the auditor shall analyze that no other significant emissions exist originating from any measure associated with the project.*
Findings for Evaluation of	**<u>Findings from Second Assessment Report</u>**

Evidence:	The methodology was changed as described above and the NCR was considered adequately addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	13/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.7.1: Quantification of net GHG emissions reductions and/or removals
Report Section:	Appendix A, 8.3
Description of Non-conformance and Related Evidence:	
The following issues were found by the audit team regarding section 11.4: • The table in this section explains variable *nrFNFtransitions* as the "Number of forest/non-forest transitions among land classes or forest strata, meaning transitions in which either the "from" or the "to" class are non-forests. Section 8.2.3". However, transitions from non-forests to forests implies reforestation, which is not allowed by the methodology. Moreover, the table contains two references to "section 0", which does not exist in the methodology. Also, not having direct references to the equations where the parameters contained in the table were calculated makes tracing values difficult. • Equation 90 was found to be unclear with regard to where with and without ANR credits for avoided DG and DF come from.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** The transitions from non-forest to forest are allowed as long as they occur naturally. If only deforestation is quantified and natural succession of forests is excluded while determining the baseline deforestation rate, there is possibility of overestimating the deforestation rate and GHG emissions reduction benefits. Therefore, the model must allow succession (or transition from non-forest to forest). The correct section reference for "Section 0" was identified and revised. The correct reference is Section 8.1.5.4. We don't understand the auditor's request here. Surely, the auditor understands that Equation 90 is a simplification of the accounting to show the different components. It is not meant to be a comprehensive overview of where the ANR credits are coming from; it just simply indicates that such credits are a separate component in the C accounting. It is easy to see that component (6) of equation 90 is spelled out in equation 97.

Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** The methodology was changed as described above. All issues related to ANR and crediting for avoided deforestation and degradation will be covered under NCR 11/11 (Point 2). As such this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	14/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.7.2: Calculation of GHG credits
Report Section:	Appendix A, 8.4
Description of Non-conformance and Related Evidence:	
Equation 92 in section 11.3 estimates the amount of VCUs generated by projects by considering the net GHG emission reductions or removals (taking leakage into account) associated with the project and discounting the non-permanence buffer. It is not clear how market leakage is incorporated into this calculation.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** Please see our response to NCR#: 8/11.
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** Market leakage has been adequately addressed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	15/11
Standard & Requirement:	VCS v3, VCS Standard 4.8.2: Monitoring plan
Report Section:	Appendix A, 9.1
Description of Non-conformance and Related Evidence:	
Purpose of monitoring The purpose of the monitoring is clearly explained in the introduction to section 13. However, of the listed bullet points, the first, “Monitoring deforestation drivers, project activities….” does not appear to be described any further in section 13.	

In section 13.10 it is stated that the monitoring plan must include an explanation of how super-acceptance will be monitored. In section 10.1 it is stated that the negative effects of super-acceptance must be tracked. However, it is not clear how these results would feed back into VCU calculation. Section 13.3 explains the procedure for monitoring changes in emissions and sinks within the project area, focusing in detail about how net annual increment is calculated for areas where ANR is being undertaken. The main element of this methodology will be the analysis of remote sensing data to determine the extent to which deforestation and degradation have been arrested. However, on this subject the methodology only states that the actual deforestation and degradation need to be calculated, "*based on remote sensing analysis*". This was considered insufficient guidance for this important monitoring step. Section 13.4 explains the procedures for calculation methane emissions from fires other than controlled burning, 13.5 the procedures for small scale fires, 13.6 from large scale fires, and 13.7 for leakage. It was not clear how the data generated in 13.4-6 feed back into the equations to calculate NERs. This was partly down to a lack of clarifying text and linkages between equations, but also because often in the monitoring sections references to equations elsewhere in the methodology are incorrect.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** There reference to super-acceptance was deleted. We have completely revised the monitoring data and parameter tables, as well as equation numbers We do not want to add any prescription on the exact remote sensing analysis, since so many techniques are out there and this is rapidly outdated. What matters is the precision of the technique as quantified using independent data. That is why the methodology focuses on the uncertainty quantification for remote sensing analysis. Furthermore, an auditor will have to review the remote sensing approach on a project-by-project basis. We view this as similar to biomass inventories: a methodology should not prescribe exactly how to measure biomass, but only require that an SOP is prepared and followed, and that appropriate quality control measures are implemented. During project validation, it is the auditor's job to review this SOP. We added the following text to the monitoring section: For further guidance on remote sensing, please consult section **Error! Reference source not found.**. Similarly, all requirements for biomass inventories, social surveys, etc. that were included in section **Error! Reference source not found.** must be followed. Fire related emissions are part of "other emission sources". We will clarify this in the text. In addition, we will clean up all references to equations in sections 13.4-13.6 so it becomes clear how to apply the data

	and to calculate NERs.
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** The rationale and changes made as described above where sufficient to close this NCR.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	16/11
Standard & Requirement:	VCS v3, VCS AFOLU Requirements 4.8.2: Leakage monitoring
Report Section:	Appendix A, 9.2
Description of Non-conformance and Related Evidence:	
Point 1 Section 13.7.1 describes the monitoring related to geographically constrained drivers. An outline of how to detect land-use change is provided. However, a procedure, "similar" to the ones used to generate the baseline must be used. It is not clear in what aspects in must be similar and in what ways it can vary. The second bullet point in the section *states, "For the project area where no ANR activities were performed, produce (a) land transition matrix/matrices between the consecutive map(s) since the last verification*." It is not clear what this has to do with calculating leakage rates. **Point 2** Section 13.7.2 describes the monitoring related to geographically unconstrained drivers. It explains that a factor approach using, "default leakage cancelation factors set by the VCS". It is not clear what is meant by this, since the VCS does not provide leakage cancellation factors. This section does not appear to align with section 10.3, where the ex-ante estimates related to geographically unconstrained drivers are made. In 10.3 it seems to state that VCS default market leakage approach AND an equation (84). Therefore, it is not clear how market leakage will be monitored or calculated ex-post. **Point 3** Section13.7.2 then states, "*Use Equation [EQ91] to calculate* $GHG_{otherLeakageSources}(t)$." Equation 91 does not contain that parameter, the parameter is in equation 90 and 96, but there is no calculation to be performed in these equations. Therefore the meaning of this sentence is not clear.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence provided for Second Assessment Report** **Point 1** This sentence was rephrased to:

	The land-use and land cover changes under the project scenario in the leakage area must be calculated using exactly the same remote sensing change analysis as for the project area under the project scenario. By definition, activity-shifting leakage is an increase in the deforestation rate *outside* of the project area. Therefore, by comparing land transition matrices between two consecutive time periods, one can evaluate if the deforestation rate outside of the project area has effectively increased. In conclusion, the text still does not provide a method for calculating the leakage because it only does calculations *inside* the project area. **Point 2** Section 13.7.2 (now 9.3.8) was revised as (note that section 8.3.3 is the old section 10.3): *Activity-shifting leakage from geographically unconstrained drivers is quantified ex-post using a factor approach in which the leakage cancellation factors, set at validation* following the procedure in Section **Error! Reference source not found.**, *are used.* This was found to be acceptable. **Point 3** Emissions from market leakage are now explicitly included in the equations 97-105 (corresponding to the old equations close to nr. 91) **<u>Evidence for Third Assessment Report</u>** **Point 1** We definitely don't mean to suggest that ex-post monitoring of geographically constrained activity shifting leakage must be carried out inside the project area. We believe that this ambiguity was coming from phrase "For the project area where no ANR activities were performed" in second bullet point. The quoted phrase was an error and has been corrected. Additionally, we have clearly mentioned that this assessment must be made in the "leakage area" as indicated below: *The land-use and land cover changes[2] <u>in the leakage belts or leakage area</u> must be calculated using exactly the same remote sensing change analysis as done for the project area:* *Acquire (a) remote sensing image(s) between validation or the last verification and the current date, and use a similar procedure as used for the baseline to produce (a) land use, land cover, and forest cover map(s) <u>in the leakage belts.</u>* *Compare the changes in between consecutive map(s) since the last time the project was verified and until the current map of land use, land cover, and forest cover. Produce (a) land transition matrix/matrices between the consecutive map(s) since the last verification <u>for the</u>*

[2] These land-use and land cover (LULC) changes do not only include deforestation and forest degradation, but also LULC changes on non-forest land such as the conversion of woodlands to grasslands due to fuelwood collection.

	leakage area. *Annualize the land transition matrix/matrices by dividing the land transition rates by the duration in between the two states represented by the maps. The annual rates of land transition changes for the leakage area is* $\Delta area_{leakageArea,projectScenario}(t,i)$. *Add CH_4 emissions from fires in the leakage area using a similar procedure as the one described in section* **Error! Reference source not found.**, *except for the following changes: (1) the PRAs or remote-sensing based procedure to determine whether forest fires occur must be conducted in the leakage area, (2)* $\Delta area_{leakageArea,projectScenario}(t,i)$ *must be used instead of* $\Delta area_{projectArea,projectScenario}(t,i)$ *, and (3)* $fireExtent(t,i)$ *must be calculated explicitly for the leakage area.*
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** **Point 1** The ambiguity came from the requirement to track change *within* the project area. However, the Developers explanation references areas *outside* the project area. The auditors still believe there is an error in the language and thus the NCR remains open. **Point 2** The methodology was changed as described above and Point 2 of the NCR was addressed. **Point 3** The methodology was changed as described above and Point 3 of the NCR was addressed. **Findings from Third Assessment Report** **Point 1** The methodology is now clear that the leakage emissions must be tracked in the leakage belt. The NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	17/11
Standard & Requirement:	VCS v3, VCS Standard 4.8.1: Data and parameter reporting
Report Section:	Appendix A, 10.1
Description of Non-conformance and Related Evidence:	
Data and Parameters Section 12 contains a list of data and parameters not monitored.	

The first 5 boxes were checked and the following issues listed below were found. It was concluded that the boxes had not been thoroughly compiled. • EA1: Not found in equation 64, yet it is in Eqn 65. • EA4: CF is in equation 22, but this is not listed (there may be more – the check was stopped here) • EA5: No data unit provided, no equations listed. (it is used in at least equation 10 – the check was stopped here) Section 14 contains a list of data and parameters to be monitored. The first 6 boxes were checked and the issues listed below were found. It was concluded that the boxes had not been thoroughly compiled. • MN2: Equation references are incorrect. It is not clear how this is measured in the field, it would seem to be something that is derived via remote sensing data and analysis. • MN4: This parameter is not named in section 8.4.2 (or anywhere else in the methodology). The methodology would be more complete if it referenced the parameters when they were derived. • MN6: Equation reference is incorrect. The auditors sampled the list looking for errors in the listed data/parameters. Based on this analysis, the following questions were raised/issues: • MN34: Equation reference is incorrect or unclear. • MN41: Slope of plots does not seem to be mentioned in the methodology, and is not used in equation 30 as stated. • MN77: Fire prevention labour does not appear to be used in the methodology. Based on this assessment it can be concluded that the data/parameter boxes in section 12 and 14 have not been accurately and thoroughly completed. Having unique identifiers (MN XX) for the data/parameters is a useful idea, however, the failure to reference these in the methodology when they are raised, and the inability to perform a search on parameters (because they are in equation boxes which Word does not search inside), means that tracing parameters through the methodology is difficult.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Second Assessment Report</u>** These issues are resolved in the new version of the methodology. Note that the reference to the equation number was removed as this was not compliant to the VCS methodology template version 3.

	An explicit reference to the monitoring variable number is not required by the VCS. As a consequence, we do not believe not having this feature in the methodology should be part of a "non-conformity request". Therefore, we would kindly ask the auditor to verify the data/parameter list without this feature. We understand it would make the validation easier. However, it also will make the management of the document almost impossible. In addition, no other VCS methodology has this feature. So, we believe we are in line with what can be expected from methodology developers.
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** The auditors confirm there is no requirement to have monitoring variable numbers, but any such system that is used must be accurate. The specific examples of errors identified previously have been addressed. The parameter boxes have been restructured. However, the ordering of the parameters makes checking and cross referencing difficult and time consuming. The difficulty in cross-referencing equations and parameters is thought to be the root cause of the recurring inconsistencies that were found in this assessment. Given the additional clarification provided by the Methodology Developer, the NCR is closed (however see NCR 18/11). (See OBS 03/11)
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	18/11
Standard & Requirement:	VCS v3, VCS Principles of transparency and accuracy: Equation logic
Report Section:	Appendix A, 10.4.
Description of Non-conformance and Related Evidence:	
A number of examples of small mistakes/typos and breakdowns in the logic were found. It was found to be difficult to trace the parameters from the central equations 90 and 91 back through the methodology, due to a lack of referencing between equations and parameters. In addition, many errors were found in equation references and in the data/parameter table references which further compounded difficulties in tracing data through the methodology.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence provided for Second Assessment Report** All references to equations were verified and corrected if necessary in the new version of the methodology. **Evidence for Third Assessment Report** Thank you for your suggestion regarding the use of "at time" and "during time". We have corrected the

	use of these terms consistently throughout the methodology. The equation was made consistent with the other L(x) equations. The correct symbol is VG_baseline, and HHgbaseline is an oversight. These are indices of drivers. They are all changed to L(d) One of the two symbols was supposed to be ∆CDG. This was corrected accordingly. Changed C(i) to C_plant(i) Corrected the subscript as 〖CS〗_2 Corrected "2" in [EQ32] Corrected as ∆C_(ANR,BSL) (t) (please note that line number has changed) Made consistent to E_(biomassLoss,ANR) (t), The correct description was provided as below: Amount of land on which ANR activities are planned under the project scenario during year t and in stratum i. [ha] GHGsources,ANR(t) is used in [EQ109]. These equations were rationalized so that the definition of GHGE,ANR(t) is consistent. This was an error. These parameters were changed to C_LWP,baseline and C_LWP,project. Numbering of these equations as well as subsequent equations were corrected. This was corrected by removing the reference to Esource. This was corrected by providing the following for "Source of data": The woody-biomass collected from project area qualifies as "non-renewable" biomass as long as the forest is under the threat of deforestation and/or degradation. The woody biomass is "renewable" if one of the following two conditions is satisfied: The woody biomass is originating from sustainably managed forests which are primarily developed for supplying fuelwood to the community. If this forest happens to be a part of REDD project forest, and then amount collected from this project must be excluded from "nonrenewable biomass". The woody biomass originates from non-forest areas (e.g., croplands, grasslands, and trees surrounding generated from silvicultural activities aimed at restoring degraded forest
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report</u>** Numerous issues regarding the parameters and referencing still exist in the revised methodology: The description of parameters is not consistent with respect to the time element. The developers have

	explained that, ““At time t” should be used for stocks, and “during time t” should be used for annual stock changes and annual emissions. The values that have (t) in the parameter should have “At time t” or “during time t” in the definition, like the one in [EQ69].” However, as one example, the first two parameters of [EQ63] have a time element, one has no mention of it in the description, the other refers to ‘year t’. All parameters must be described correctly and consistently with respect to time. <u>Parameters</u> • [EQ10] “$VG_{baseline}$” is not listed beneath, and one which is listed, “$HH_{gbaseline}$” is not in any equations. • In the parameter list beneath [EQ12] and [EQ13], there are references to “driver d” and driver “i” yet they appear to be the same. • Below [EQ15] there is a repeat of the parameter ΔC_{DF} • [EQ21] RHS parameter does not match the one listed beneath • [EQ30]: Missing subscript on CS2. • [EQ23] LHS is missing a number “2” • Line 1549: subscript incomplete. • [EQ63] contains a parameter, “$E_{ANR,biomassloss}$”, there is a parameter in [EQ67] which appears to be the same but is called, “$E_{biomassloss,\ ANR}$”, • Beneath equation 65, the parameter, “ $area_{projectAreaWithANR,projectScenario}(t,i)$” is described , “Amount of land on which ANR activities are planned under the baseline scenario for year t and in stratum i. [ha]” yet it refers to the project scenario. • The value calculated in [EQ67] ($GHG_{sources,ANR}(t)$) does not appear to be listed beneath the equation, nor used elsewhere. • The definition of $GHG_{E,ANR}(t)$ is different beneath [EQ67] AND [EQ69]. • [EQ102] contains a parameter, “$C_{HWPproject,t}$” and a baseline equivalent. These do not match the parameters in [EQ93] • [EQ103] and [EQ104] are incorrectly referred to in [EQ94]. • Line 2366-8, 2373: References to $E_{sources}$… • The ‘source of data’ for f_{nrb} was found to be erroneous. Given that numerous errors exist in the revised methodology, this NCR remains open.

	Findings from Third Assessment Report The small errors in the methodology have been corrected, thus this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	19/11
Standard & Requirement:	VCS Standard 4.1: Assumptions, parameters and procedures
Report Section:	Appendix A, 10.6.
Description of Non-conformance and Related Evidence:	
The methodology was found not to always require an estimate to the 95 percent confidence interval. For example, in section 9.4.2.1 it is stated that, *"Ex-ante, values for biomass densities in ANR areas must be based on pilot projects or data on biomass increases in regenerating forests from the literature. Ex-post, this quantity must to be monitored for actual biomass according to a network of permanent sampling plots according to the procedures within this document. Select a sampling design with a precision of minimally 90%*". Please see section 15.2 of the methodology for another example.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** The referenced sentence in section 9.4.2.1 (currently in section 8.2.4.3) has been revised as below: *Ex-post, this quantity must to be monitored for actual biomass according to a network of permanent sampling plots according to the procedures within this document. Select a sampling design with a confidence level of 95%.* Section 15.2 (currently in section 10.2) has been revised as: ○ *The **activity data** from avoided deforestation must be discounted using* $u_{classification}$*, the **activity data** from avoided degradation must be discounted using* $u_{stratification}$*. The* $u_{classification}$ *and* $u_{stratification}$ *factors are selected based on the empirically observed accuracy of discerning forest/non-forest classes, and forest biomass classes, respectively. If stratification does not meet the required accuracy thresholds, credits from avoided deforestation may still be generated, on the condition that the accuracy threshold for classification is met. However, if the LULC classification does not meet the accuracy threshold, the project is not eligible.* ○ *The **emission factor** must be discounted with* $u_{inventory}$*, which is based on the half-width of the*

	95% confidence interval around the mean difference between the two carbon stock densities. This is explained in **Error! Reference source not found.**. *Note that the minimum desired level of precision for sampling design of biomass inventory is 15%.*
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** The methodology was changed as described above and the NCR was considered adequately addressed.
NCR Status:	CLOSED
Comments (optional):	

NCR#:	20/11
Standard & Requirement:	VCS principles: VCS principle compatibility
Report Section:	Appendix A, 11.1.
Description of Non-conformance and Related Evidence:	
Relevancy: Throughout the document there are references to VCS 2007.1 material, guidance and requirements (and logo) which are now outdated. For example, section 3, line 2. To provide another example, the methodology states in sections 10.1 and 10.3 that market leakage assessments undergo double approval when this is no longer the case under V3. In section 3.2 it is stated that there is no VCS definition of degradation, However there is a definition in VCS AFOLU Requirements section 4.2.5. In section 13 it is stated that VCS verification happens at a minimum of every 5 years, however, this is not a VCS requirement. There is a VCS requirement to verify within 5 years of validation, but not every 5 years after (please see VCS AFOLU Requirements 3.4.2.1.c and 3.6.9 for the rule rules). Therefore, in a number of places the methodology was not found to be relevant compared to the VCS v3 to which it is being assessed. Consistency: In section 13.2 It is stated that EF cannot be updated. Then in section 13.3 despite EF not being mentioned in the box for parameters to which the section relates, it is stated that EF must be updated prior to verification. Throughout the methodology typos and miss-references were found. At times, these can make following the logic of the methodology.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence provided for Second Assessment Report** References to “VCS 2007” were removed. We have revised the text in market leakage as below: *The market leakage assessment only has to be included when illegal logging activities that supply timber to national or international markets as an identified driver. Stopping illegal logging to supply timber products to local communities is going to shift pressures to forested areas close*

	to the project area. As a consequence, emissions due to market-effect leakage will be detected by the monitoring for activity shifting leakage. *However, if the illegal logging activities supply timber products to regional, national or global markets, there is high likelihood of market leakage beyond the detection boundaries of the activity-shifting leakage. Therefore, market leakage from reducing logging activities that supply timber products to regional, national or global markets must be quantified using VCS Tool for the Estimation of Market Leakage.* We have removed the definitions for both deforestation and degradation from the methodology. Note that the methodology (see definitions section) indicates that any definition set forward by the VCS in future guidance documents always has precedence over the definitions introduced in the methodology. We have deleted this sentence from the revised version of the methodology so not to have any redundancy with the VCS Standard and guidance documents. We have removed section 13.2 entirely. Section 13.3 (now 9.3.2) was revised as following: *Carbon stock densities must be re-measured at least once before every baseline update using ground-based biomass inventories, as described in section 8.1.4.4. However, carbon stock densities may be measured more frequently. For the calculation of the NERs, the most recent values of the carbon stock densities must be used. Therefore, if new carbon stock densities are available, values for the Emission Factors must be updated and the new values must be reported in the monitoring report based on the procedure in section 8.1.4.* The update frequency is included in “Data and parameter” section of the Methodology. We have corrected all typos and incorrect references. **<u>Evidence for Third Assessment Report</u>** The reference to buffer withholding was erroneous and we propose to include the following correction to section 8.3.3: All leakage from reducing logging of timber for commercial on-sale or wood collection for commercial on-sale of fuelwood and charcoal production is considered through the ‘market leakage evaluations’ mechanism from the VCS AFOLU Requirements document. We propose to revise the text to resolve the potential ambiguity arising from phrase “baseline… is verified. We proposed the following revision: Once the baseline (calculated ex-ante) is validated, it is locked during the baseline validation period. No

	ex-post adjustment of the baseline is allowed. The baseline must be re-assessed and updated every ten years and must be validated following a re-assessment at the same time as the subsequent verification. The Table of Contents was updated and all references to non-existent sections were removed. Step 5C was replaced by Section 8.1.5.3. References to "Step A, B and C" in the reporting requirement box beneath [EQ32] were also deleted and replaced by their correct references. No. Reference to section 8.1.2.4 is correct. Requirements for images analysis are provided in section 8.1.2.4. Changed to correct reference i.e., 8.1.2.4.1. Parameters were corrected and correct references were added. Pool name was changed to "Belowground biomass" The text (previously on line 477) was deleted. In addition, the following text was added to the list previously on line 482: "Military bases or installations" Changes were made to require at least one image from each of the following groups: 0-3 years; 4-9 years and 10-15 years. Changes were made in Applicability Criteria (4) (previously on line 344), in Section 8.1.2.1 (previously on line 515), and Table 4 (previously on line 518). Corrected by adding "model" between "statistical" and "for" Changed the line with the following: This methodology includes procedures to quantify the GHG removals generated from silvicultural activities aimed at restoring degraded forest.
Findings for Evaluation of Evidence:	**<u>Findings from Second Assessment Report</u>** The methodology was changed as described above, however numerous incorrect references and typos remain. In section 8.3.3 it is stated that, "*All leakage from reducing logging of timber for commercial on-sale or wood collection for commercial on-sale of fuelwood and charcoal production is considered through the VCS market leakage approach and is accounted for through the buffer withholding mechanics from the VCS, subject to dual validation*". It is not correct to say that market leakage is handled through the buffer approach. It is simply deducted.

	The buffer is for permanence risk accounting. Methodologies can defer to the VCS approach. However the language about this being a *buffer* is incorrect, it is just a simple deduction (non-returnable). In addition it should be noted that dual validation is not required for the buffer determination in v3 of the VCS standard. Section 9.3.13 states, "Once the baseline… is verified". However, the VCS AFOLU Req 3.1.9 states, "*For all IFM, REDD, PRC and ACoGS project types, the project proponent shall, for the duration of the project, reassess the baseline every 10 years and have this validated at the same time as the subsequent verification.*" It is therefore incorrect to refer to verification of the baseline. <u>References</u> • Lines 131, 132: Sections 9.2.6 & 7 do not exist. • 8.1.5.3: References to steps here, "Step 5C" and in other sections appear to be incorrect. See also reporting requirements box beneath [EQ32], it has references to steps that do not appear to align. • Line 2332: "section II.1.2.4.1" is not the correct reference • References to equations and parameters in section 9.3.3 do not appear to have been updated. <u>Typos</u> • Table 2: "Below biomass" does not match VCS pool name. • Lines 477 and 482 appear to be repetitions. • Lines 344 and 515 are not consistent with respect to the allowable time period for the third image ("5-15" vs "6-16" years) ○). • Line 1159: Missing word at the following place: "statistical for" • Line 1516: The following sentence does not make sense, "This methodology allows to generate carbon credits" • Equation 63and 66, parameter, ∆CBSL,ANR (t) states, *"GHG emissions or sources"* **<u>Findings from Third Assessment Report</u>** The erroneous reference to buffer withholding has been removed. The timing and nature of baseline reassessments is now in line with VCS requirements. The typos have also been corrected. Therefore this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	21/11
Standard & Requirement:	VCS Methodology Approval Process 5.2.1.2: Linkage to existing methodologies

Report Section:	Appendix A, 12.2.
Description of Non-conformance and Related Evidence:	
The methodology has been submitted as a new methodology, as opposed to a revision to VM0006. There have been some structural changes made since VM0006, however the majority of the text and procedures remain the same. Some, but not all these changes relate to the incorporation of a grouped project approach. There are some additions for grouped projects, but it is questioned if these are necessary at the methodology level. In summary, the front page of the methodology states that it is a "modification" of VM0006, and the auditors agree with this statement, it appears to be a revision rather than a new methodology as per VCS definitions.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Second Assessment Report** We are in contact with the VCS on the implications of revising a methodology with regards to projects that use the original methodology, and will respond to the NCR once we understand the full implications. **Evidence for Third Assessment Report** It was clarified with the VCS that this methodology is effectively a revision. The title page and the introductory section "Relationship to Approved or Pending Methodologies" were changed to reflect that the proposed methodology is a revision of VM0006.
Findings for Evaluation of Evidence:	**Findings from Second Assessment Report** The auditors still perceive this to be a revised methodology. This NCR will remain open until the methodology is described as a revised methodology, or evidence (validated by the VCS) can be provided that the methodology meets the criteria of a new methodology. **Findings from Third Assessment Report** The methodology is presented as a revision. This closes the NCR.
NCR Status:	CLOSED
Comments (optional):	None

NCRs raised in Second Assessment Report

NCR#:	22/11
Standard & Requirement:	VCS v3, VCS Standard 4.3: Applicability conditions
Report Section:	Section 4

Description of Non-conformance and Related Evidence:	
Section 4, Applicability conditions states, "Extraction of timber is allowed in the project areas on the condition that (a) emissions related to the loss of biomass during harvesting ("harvest emissions") are duly accounted for and subtracted from the emission reduction, and (b) harvest emissions are smaller than the net emission reductions without harvesting at every verification." However the methodology includes no steps for accounting for harvesting.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Third Assessment Report</u>** In response to this NCR the Methodology Developer noted: Emission from harvesting are now accounted for in section 8.2.7. This section includes mechanics to avoid that credits are generated that are based on stocks that are greater than the long-term average. Further, in response to reviewer concerns regarding minimum methodological guidance on requirements to ensure adequate harvesting criteria are included the methodology developer noted: <u>Section 8.2.7 was revised to include the following guidance:</u> *The project proponents must adhere to the following requirements for planning and implementing forest harvest activities in the project area:* • *The harvest plan and harvest activities must follow any Best Management Practice (BMP) guidance of the country or jurisdiction – if such BMP guidance exists.* • *The potential impact of the harvesting activities must be included in the Environmental Impact Assessment section of the project design document. The assessment must demonstrate that harvesting activities do not threaten biodiversity or the environment.* • *The harvest plan must describe the biophysical sustainability of the forest harvest. At minimum, the biophysical sustainability must be demonstrated by ensuring that the net removal of biomass from harvesting is less than the net increment of the biomass in the forest. It is recommended that project proponents use criteria and indicators (C & I) to assess the sustainability developed for the country or jurisdiction or use internally applicable C & I such as from International Tropical Timber Organization (ITTO). In addition, it is*

	recommended to obtain sustainability certification from third parties such as Forest Stewardship Council or Sustainable Forestry Initiative or similar institutions.
	
	The harvest plan/description in PD must include the following information:
	• *Description of harvest areas in terms of location, size, forest inventory and topography.*
	• *A description of all silvicultural activities that will be applied in the areas where harvesting will be carried out. This description must include number of trees removed and number of trees retained, in case of individual tree selection cut methods. For clear-cut methods or group selection cut methods, maximum opening size must also be described.*
	• *The harvesting methods, i.e. mechanized vs. manual, as well as all processes such as felling, bunching, skidding/ forwarding, loading, and unloading. All machinery and equipment must be described.*
	• *The harvest frequency (years between harvests) and volume of harvest at each time period.*
	• *Regeneration assumptions and description of site indexes for dominant species in the strata. The harvest plan must include the expected tree density that will be maintained in the project area. Additionally, growth estimates for harvest areas in terms of total biomass as well as biomass stock density per unit area must be described and all assumptions and validity of any growth estimates must be justified. If any software based models have been used, proper justification of the suitability of such models used must also be described in the harvest plan.*
	• *Activities that are practiced to protect soil, water, site and residual trees in the harvest area.*
	• *Documentation on presence/absence of any threatened or endangered species and/or habitat on site, potential impacts on species and mitigation measures, presence/absence of natural heritage areas, and potential impacts on natural heritage areas and mitigation measures.*
	• *A map of the harvest site including the following:*
	  ○ *Plot locations*
	  ○ *Harvest area boundary within the project area boundary*
	  ○ *Slope classes*
	  ○ *Streams/rivers/roads (if present)*
	  ○ *Wetlands (if present)*
	  ○ *Stream side management zones or river buffer (if applicable)*
	  ○ *Planned skid trails (if applicable)*
	  ○ *Landing sites/areas (if applicable)*
	Equation 77 is now Eq. 83 and it refers to the correct equation in the text.

	Guidance on model use is also provided as below: *The ex-ante estimation of the $LTAC_{harvest}$ shall use biomass carbon stock density $C_{harvest}(t,i)$ values that are estimated using a projection model such as a computer simulation model or a growth table. All projection models shall be properly calibrated using field measurements and must estimate the removal of biomass from the harvest areas using the harvest management plan. After the start of the project, the projection model shall be re-calibrated using actual harvesting and biomass growth data and the $LTAC_{harvest}$ shall be re-calculated at every verification. Any projection model used must have the following characteristics:* • *The used models have been prescribed or recommended by designation forest department or related agencies in the country/jurisdiction. For example, growth models or yield project tables listed in forest act/regulations can be used. Alternatively, models that have been found in peer reviewed literature and are from the same region as of the project area can be used. However, such models must be parameterized for the specific conditions of the project area.* • *The used models must be clearly documented with respect to the scope of the model, assumptions, known limitations, embedded hypotheses, assessment of uncertainties, and sources for equations, data sets, factors or parameters.* • *Simulation software must be based on local data or calibrated for use in the project area. CO2FIX is an example of a simple ready-to-use model that can be easily applied globally. FVS, a different simulation model, has more functionality but requires calibration for use outside of the US (and Canada).* • *When no individual simulation model is available, a simple spreadsheet model using IPCC biomass growth estimates or growth estimates based on expert opinion corroborated by local studies and historical practice for the project area can be used. The IPCC biomass tables provide estimate of annual growth and total biomass as a function of different forest types, age-group, and time. When biomass removal is tracked along with the annual growth, biomass remaining in forest can be estimated. Note that this approach gives only linear growth.* Furthermore, section 9.3.11 provides the requirements for monitoring of long-term average carbon stock in harvest areas. Equation 109 in line 2847 (component 10) includes GHG emissions reduction from harvest areas. Eq. 120 and 121 utilizes LTAC to estimate total amount of credits from REDD project area that are subjected to harvesting.
Findings for Evaluation of	**<u>Findings from Third Assessment Report</u>**

Evidence:	Section 8.2.7 of the revised methodology has been significantly revised to include sections 8.2.7.1 and 8.2.7.2 which include requirements for the calculation of emissions from harvesting activities, including the quantification of long-term average (LTA) carbon stocks. Further, section 8.2.7 includes guidance and minimum requirements for those projects which intend to include harvesting in project activities. As such the methodology now includes a process for accounting for harvesting and this NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	23/11
Standard & Requirement:	VCS Standard 4.1: Assumptions, parameters and procedures
Report Section:	8.1.4.6
Description of Non-conformance and Related Evidence:	
The methodology incorporates a new mechanism to spread out the baseline emissions from the soil pool associated with a given conversion (section 8.1.4.6 and included in equation 94). The steps taken were found to be logical. However, the notation used in [EQ94]'s sub equations were found to be ambiguous. It was not clear how the calculation should be executed, or what "tt" means.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**<u>Evidence for Third Assessment Report</u>** In response to this NCR the Methodology Developer noted: We propose to add the following sentence immediately below the equation [EQ104] and clarify that both i and tt are simple indices for summation across years. *Note that i and tt are simple indices to the summations and do not have any further meaning; t is the year for which the emissions and removals are calculated.*
Findings for Evaluation of Evidence:	**<u>Findings from Third Assessment Report</u>** The change has been made to the methodology. The methodology is now clear and the NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	24/11
Standard & Requirement:	VCS Standard 4.1: Assumptions, parameters and procedures

Report Section:	8.1.5.1
Description of Non-conformance and Related Evidence:	
The approach of using a beta regression to project deforestation rates was not found to be appropriate given that the Developers could not demonstrate that it could be used when only two data points were available (as would be the case if the minimum of three historical images were used.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Third Assessment Report** In response to this NCR the Methodology Developer noted: We propose to include the following text to allow use of average deforestation rate when only three images are used i.e. when beta regression is not applicable: *However, if only three images were included in the historical analysis, and, therefore, only two deforestation/degradation rates are available, the average of the two rates must be used instead of the extrapolation using the Beta regression.*
Findings for Evaluation of Evidence:	**Findings from Third Assessment Report** The change has been made to the methodology. The beta regression can only be used, when it is appropriate and the NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

NCR#:	25/11
Standard & Requirement:	VCS AFOLU Requirements 3.1.9.
Report Section:	9.3.13
Description of Non-conformance and Related Evidence:	
Section 9.3.13 lists a set of circumstances under which the baseline can be reassessed before its 10 year expiry. VCS AFOLU Requirements Section 3.1.9. states that baselines can only be assessed every 10 years with only one exception (as communicated by the VCS in a personal comms on 10/11/11, *"Baselines are revised every ten years only. It is not acceptable to revise the baseline or to trigger a baseline revision prior to the 10 year expiry date (AFOLU Req Section3.1.9). The only exception is:* *Where a catastrophic reversal occurs, the baseline may be re-assessed superseding any methodology requirements for a fixed baseline.*	

(AFOLU Requirements Section 3.6.8 (1)(a)). " (VCS 10/11/11) Therefore any provisions for baseline renewal before 10 years that not meet the one exception are not permitted.	
Corrective Action Request:	Organization shall implement corrective actions to demonstrate conformance with the requirement(s) referenced above. Note: Effective corrective actions focus on addressing the specific occurrence described in evidence above, as well as the root cause to eliminate and prevent recurrence of the non-conformance.
Timeline for Conformance:	Prior to validation
Evidence Provided by Organization:	**Evidence for Third Assessment Report** In response to this NCR the Methodology Developer noted: We have removed the provision for baseline renewal sooner than 10 years.
Findings for Evaluation of Evidence:	**Findings from Third Assessment Report** Section 9.3.14 (noting the revised methodology relevant section is now 9.3.14) no longer contains a list of circumstances when the baseline can be reassessed in advance of 10 years. Thus, the NCR is closed.
NCR Status:	CLOSED
Comments (optional):	None

4.1 Observations

Note: Observations are issued for areas that the auditor sees the potential for improvement in implementing standard requirements or in the quality system; observations may lead to direct non-conformances if not addressed. Unlike NCRs, observations are not formally closed. Findings from the Methodology Assessment related to observations are discussed in Appendix A below.

OBS	01/11	Reference Standard & Requirement:	VCS V3,1.4
Description of findings leading to observation:	The proposed applicability conditions section could benefit if it were synthesized to clear and simple conditions, as in its current state this section seems to contain a summary of the methodology. For example, condition 5 states, "credits must be discounted based on the accuracy of the LULC classification…." This is not an applicability condition, rather a requirement of a later step in the methodology.		
Observation:	Terra Global Capital should only have applicability conditions in the applicability conditions section of the methodology.		

OBS	02/11	Reference Standard & Requirement:	VCS V3,
Description of findings leading to observation:	The land-use change model incorporates the forest scarcity principle, the notion that deforestation rates decrease upon the gradual depletion of the native forest resources. Initial deforestation rates are consequently multiplied with a “forest scarcity” factor, which is initially 1, but gradually decreases as the proportion of remaining forest decreases. Equation 29 models this factor. This “scarcity factor” must be calibrated using scientific literature in an area close to the project area that has followed a more advanced deforestation route. The audit team concluded that the methodology could benefit from including default values of Sc1 and Sc2 in equation 29.		
Observation:	Terra Global Capital should include conservative, justified, default values for Sc1 and Sc2.		

OBS	03/11	Reference Standard & Requirement:	VCS V3,1.4
Description of findings leading to observation:	There is no systematic ordering of the parameter boxes in the methodology. This may be the root cause of the inconsistencies that were found in v1 and v2 of the methodology, It also makes the methodology harder for users, and for auditors to check,		
Observation:	Terra Global Capital should systematically order the parameter boxes.		

5 ASSESSMENT CONCLUSION

Based on Project’s conformance with audit criteria, the auditor makes the following recommendation:		
Final Report Conclusions		
☒	Validation approved: *NCR(s) closed*	
☐	Validation not approved: *Conformance with NCR(s) required*	
Draft Final Report Conclusions		
☒	Validation approved: *NCR(s) closed*	The Project Proponent has 7 days from the date of this report to submit any comments related to the factual accuracy of the report or the correctness of

☐	Validation not approved: *Conformance with NCR(s) required*	decisions reached. The auditors will not review any new material submitted at this time.
Draft Report Conclusions		
☐	Validation approved: *No NCRs issued*	The Project Proponent has 30 days from the date of this report to revise documentation and provide any additional evidence necessary to close the open non-conformances (NCRs). If new material is submitted the auditor will review the material and add updated findings to this report and close NCRs appropriately. If no new material is received before the 30 day deadline, or the new material was insufficient to close all open NCRs the report will be finalised with the NCRs open, and validation and/or verification will not be achieved. If all NCRs are successfully addressed, the report will be finalised and proceed towards issuance of an assessment statement.
☒	Validation not approved: *Conformance with NCR(s) required*	

5.1 Audit Conclusions

Summary from Third Assessment Report

The methodology underwent numerous revisions in responses to the NCRs raised in the previous report. During this process, the audit team held two meetings with the methodology developer which resulted in the revision of v4.0 and subsequently version 4.1 of the methodology. Following the second meeting, on 29 May 2012 the methodology developer revised v4.1 of the methodology to produce v5.0 and provided additional clarification on all open NCRs. The revised methodology and additional clarification provided by the methodology develoepr was found to fully address those NCRs that remained open from the November 2011 assessment.

Audit Team Recommendation

Based on an evaluation of the new methodology, as related to the defined assessment scope and criteria, which assessed the credibility of all data, rationale, assumptions, justifications and documentation provided by the Methodology Developer; the Rainforest Alliance's assessment team finds that the methodology has:

Assessment Draft Final Report dated 12 June 2012:

- ☒ Demonstrated unqualified conformance with the standard
- ☐ Not demonstrated unqualified conformance with the standard.

Summary from Second Assessment Report

The methodology underwent numerous revisions in responses to the NCRs raised in the draft report. As a result of the changes 10 NCRs were closed, however 11 of the NCRs remain open and 4 new NCRs have been raised. The most significant remaining issues are the lack of clarity around the crediting from Assisted Natural Regeneration (ANR) activities. In addition, the section on adding additional activities was found to be unnecessary and not in conformance with VCS rules. The section on cookstove credits has been revised, but has small errors, and the auditors have not received confirmation from the VCS that crediting for such activities is allowable under AFOLU rules.

Audit Team Recommendation

Based on an evaluation of the new methodology, as related to the defined assessment scope and criteria, which assessed the credibility of all data, rationale, assumptions, justifications and documentation provided by the Methodology Developer; the Rainforest Alliance's assessment team finds that the methodology has:

Assessment Draft Final report dated 12 November 2011:

☐ Demonstrated unqualified conformance with the standard

☒ Not demonstrated unqualified conformance with the standard.

Summary from First Assessment Report

The methodology submitted for assessment was a "modification" to the methodology VM0006 which has already been approved to VCS v2007.1. The auditors found that whilst changes had been made to incorporate grouped projects these were minor, and in most cases would have been covered by a grouped PD since the VCS's project grouping rules occur in the Project sections of the standard. The Developers have not adequately demonstrated that this is a new methodology as per VCS rules. The audit found that the majority of the Methodology was well written and provided detailed guidance on how to execute the steps required. However, the inclusion of direct crediting from a CDM Gold Cookstove Methodology was not well integrated into the methodology. It was also not clear that the credits generated from ANR activities were for long term additional sequestration of carbon. Whilst the sections on estimating baselines and project emissions in themselves tended to be clear, it was unclear how these all tied together to generate ex-ante net emissions reductions, and ex-post VCU calculations. The reason for this was a lack of cross referencing between parameters and equations and also because of a relative lack of structure to the methodology within the monitoring section. The lack of results tables and/or graphs also made understanding difficult; however the boxes which summarised PD reporting were a novel and useful inclusion. The methodology did not appear to have been updated to meet V3 of the VCS standard, referencing 2007.1 material and rules that are now outdated. The methodology also contains numerous typos, equation and referencing errors that hindered understanding.

Audit Team Recommendation

Based on an evaluation of the new methodology, as related to the defined assessment scope and criteria, which assessed the credibility of all data, rationale, assumptions, justifications and documentation provided by the methodology Developer; the Rainforest Alliance's assessment team finds that the methodology has:

Assessment Draft Final Report dated 21 June 2011:

☐ Demonstrated unqualified conformance with the standard

☒ Not demonstrated unqualified conformance with the standard.

State the conclusion of the methodology assessment.

6 REPORT RECONCILIATION

Campbell Moore, Carbon Specialist for RA-Cert conducted the reconciliation review on 17-19 September 2013. During the reconciliation, the reviewer assessed the DNV assessment report, a version of the methodology that depicted changes made between the version first approved by the RA team (v5) and the version approved by DNV (v11), as well as a version describing changes made between v11 and the version subsequent to the VCS review (v14). Changes that had been made since v5 were reviewed and it was confirmed that all changes made are in conformance with the VCS. These changes are documented in the findings tables throughout this report under the heading "Findings from Reconciliation (18 Sept 13)". Rainforest Alliance, as the first assessor, approves the v14 of the methodology approved by DNV and VCS.

7 EVIDENCE OF FULFILMENT OF VVB ELIGIBILITY REQUIREMENTS

The Rainforest Alliance is an ISO 14065:2007 accredited validation and verification body. Additionally Rainforest Alliance retains two staff AFOLU Experts on staff, which are involved in the oversight and development of all Rainforest Alliance involvement within the VCS Methodology Approval Process. For a complete list of VCS project validations that Rainforest Alliance has completed, as well as expert staff listing, please see the Rainforest Alliance website.

8 SIGNATURE

Signed for and on behalf of:

Name of entity:	Rainforest Alliance
Signature:	
Name of signatory:	Campbell Moore
Date:	19 September 2013