METHODOLOGY 2ND ASSESSMENT REPORT

REVISION OF VM0006 - CARBON ACCOUNTING FOR MOSAIC AND LANDSCAPE-SCALE REDD PROJECTS

REPORT Nº 2013-9201

REVISION NO. 01

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Summary:

The proposed methodology (MED) sets project conditions and carbon accounting procedures for activities aimed at reducing unplanned anthropogenic deforestation and forest degradation of the mosaic configuration. REDD net GHG benefits 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. This methodology allows for grouped projects in which discrete project parcels are added after the start of the project and without a full validation.

The purpose of a second methodology element assessment is to have an independent third party assess the Methodology Element Documentation's (MED) conformance with the requirements and principles set out in the *VCS Standard* as well as whether the methodology conforms with scientific and other best practice.

The MED was reviewed against AFOLU requirements: VCS Version 3.3 /5/ and VCS Version 3.3 /4/.

The assessment identified 20 CARs, 8 CLs and 5 OBS. The CARs and CLs were satisfactorily addressed by the MED proponents by revising the MED. No OBS remained open and were addressed by the MED proponent.

It is DNV's opinion that the MED "Carbon Accounting for Mosaic and Landscape-scale REDD Projects", Version 14.0 as described therein, is in compliance with the methodological requirements set in AFOLU requirements: VCS Version 3.3 and VCS Version 3.3. Hence, DNV recommends the approval of the revision as the revised VCS VM0006 Methodology.

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1 INTRODUCTION

1.1 Objective

The purpose of a second methodology element assessment is to have an independent third party assess the Methodology Element Documentation's (MED) conformance with the requirements and principles set out in the *VCS Standard* as well as whether the methodology conforms with scientific and other best practices.

1.2 Summary Description of the Methodology Element

The proposed methodology (MED) sets project conditions and carbon accounting procedures for activities aimed at reducing unplanned anthropogenic deforestation and forest degradation of the mosaic configuration. REDD net GHG benefits 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. This methodology allows for grouped projects in which discrete project parcels are added after the start of the project and without a full validation. The main methodological aspects of the methodology are:

- Net emission reductions (NERs) from avoided deforestation and avoided forest degradation are treated separately.
- 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.
- The MED includes also procedures for determining emission reductions from the implementation of energy efficiency project activities (e.g. cookstoves) which are part of a REDD project.
- 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 is accounted following the applicable tool.
- Increases in forest cover through natural regeneration are 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.
- Procedures to monitor and account for secondary emissions from increased rice production and intensification of livestock management are included in the methodology.
- In addition to supporting the grouping of projects, this methodology supports projects that are nested under a jurisdictional REDD+ program that is registered under the JNR Jurisdictional and Nested Requirements where the jurisdictional REDD+ program has adopted a scenario that allow for projects to be registered and issued credits. The methodology supports projects that are registered prior to the registration of the jurisdictional REDD+ program, as well as project registered subsequent to the registration of the jurisdictional REDD+ program.

2 ASSESSMENT APPROACH

2.1 Method and Criteria

2.1.1 *Method*

The assessment was based on the recommendations of the VCS Validation and Verification Manual /14/ as required by VCS standard Version 3 /4/.
The validation consisted of the following five phases:

I a desk review of the MED and the First assessment report
II follow-up interviews with project stakeholders
III the resolution of outstanding issues
IV Internal quality control
V Issuance of the final assessment report

2.1.2 *Criteria*

The MED is reviewed against the criteria stated in the VCS standard Version 3 Requirements Document:

- AFOLU requirements: VCS Version 3.3 /5/
- VCS Version 3.3 /4/

DNV considered additionally criteria which served to support its assessment:

- JNR Requirements: VCS Version 3.0 /7/;
- AFOLU Non-Permanence Risk tool: VCS Version 3.2 /8/;
- IPCC (2006): 2006 IPCC Guidelines for National Greenhouse Gas Inventories /26/;
- IPCC, 2003: Good Practice Guidance for Land Use, Land-Use Change and Forestry /27/
- GOFC-GOLD, 2012, A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals caused by deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation /28/;
- Global Land Cover Validation: Recommendations for Evaluation and Accuracy Assessment of Global Land Cover Maps. European Communities, Luxembourg /29/;
- Various applicable CDM tools:
    - ‘Estimation of direct nitrous oxide emission from nitrogen fertilization’ (version 01) /22/
    - ‘Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity’ (version 4) /20/
    - ‘Tool for testing significance of GHG emissions in A/R CDM project activities’ (version 1) /19/
    - ‘Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected in CDM A/R project activities’ (version 1) /24/
    - ‘Estimation of GHG emissions related to displacement of grazing activities in A/R CDM project activity’ (version 2) /23/

2.2 Document Review

The following tables list the documentation that was reviewed during the assessment

Ref.	Document
/1/	Terra Global Capital LLC: Methodology Element Document "Carbon Accounting for Mosaic and Landscape-scale REDD Projects" -First version 05 dated June 2012 -Final version 14.0 dated September 2013
/2/	Rainforest Alliance: Methodology Assessment Report, 20 June 2012
/3/	Terra Global Capital LLC: Methodology Element Document Approved VCS Methodology VM0006 Version 1.0 "Methodology for Carbon Accounting in Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation"
/4/	VCSA: VCS standard: VCS Version 3.3, 4 October 2012
/5/	VCSA: AFOLU requirements: VCS Version 3.3, 4 October 2012
/6/	VCSA: Program Definitions: VCS Version 3.4, 4 October 2012
/7/	VCSA: JNR Requirements: VCS Version 3.0, 4 October 2012
/8/	VCSA: AFOLU Non-Permanence Risk tool: VCS Version 3.2, 4 October 2012
/9/	VCSA: AFOLU Non-Permanence Risk tool: VCS Version 3.2, 4 October 2012
/10/	VCSA: "Tool for the Demonstration and Assessment of Additionality in VCS Agriculture, Forestry and Other Land Use (AFOLU) Project Activities" (version 03)
/11/	VCSA: "Estimation of emissions from fossil fuel combustion (E-FFC)" VMD0014 (version 1.0)
/12/	VCSA: "Estimation of Emissions from Market Leakage" VMD0033 (version 1.0)
/13/	VCSA: AFOLU Guidance: AFOLU Guidance: Example for Calculating the Long-Term Average Carbon Stock for ARR Projects with Harvesting, 8 March 2011
/14/	VCSA: Validation and Verification Manual, Version 3.0, 4 October 2012
/15/	CDM Executive Board: "Afforestation and reforestation of degraded land" AR-ACM0001 (version 03), EB 46 Annex 14
/16/	CDM Executive Board: "Restoration of degraded lands through afforestation/reforestation" AR-AM0002 (version 03), EB 50 Annex 16
/17/	CDM Executive Board: "Energy efficiency measures in thermal applications of non-renewable biomass" AMS-II.G (version 05), EB 70 Annex 30
/18/	CDM Executive Board: "Afforestation/Reforestation with Trees Supported by Shrubs on Degraded Land" AR-AM0006 (version 02), EB 42 Annex 35
/19/	CDM Executive Board: 'Tool for testing significance of GHG emissions in A/R CDM project activities' (version 1), EB31
/20/	CDM Executive Board: 'Estimation of non-CO_2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity' (version 4), Annex 31, EB65
/21/	CDM Executive Board: 'Calculation of the number of sample plots for measurements within A/R CDM project Activities' (version 2.1), Annex 15, EB58
/22/	CDM Executive Board: 'Estimation of direct nitrous oxide emission from nitrogen fertilization' (version 01), Annex 16, EB33
/23/	CDM Executive Board: 'Estimation of GHG emissions related to displacement of grazing activities in A/R CDM project activity' (version 2), Annex 12, EB39
/24/	CDM Executive Board: 'Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected in CDM A/R project activities' (version 1), Annex 15, EB33

Ref.	Document
/25/	CDM Executive Board: 'Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks' (version 2), Annex 23, EB50
/26/	IPCC (2006): 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Prepared by the National Greenhouse Gas Inventories Programme. Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds).Published: IGES, Japan
/27/	IPCC, 2003: Good Practice Guidance for Land Use, Land-Use Change and Forestry, prepared by the National Greenhouse Gas Inventories Programme, Jim Penman, Michael Gytarsky, Taka Hiraishi, Thelma Krug, Dina Kruger, Riitta Pipatti, Leandro Buendia, Kyoko Miwa, Todd Ngara (eds). Published: IGES, Japan. URL: http://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html
/28/	GOFC-GOLD, 2012, A sourcebook of methods and procedures for monitoring and reporting anthropogenic greenhouse gas emissions and removals caused by deforestation, gains and losses of carbon stocks in forests remaining forests, and forestation. GOFC-GOLD Report COP18 version 1, (GOFC-GOLD project office, Natural Resources Canada, Alberta Canada).
/29/	Alan H. Strahler, Luigi Boschetti, Giles M. Foody, Mark A. Friedl, Matthew C. Hansen, Martin Herold, Philippe Mayaux, Jeffrey T. Morisette, Stephen V. Stehman and Curtis E. Woodcock. 2006. Global Land Cover Validation: Recommendations for Evaluation and Accuracy Assessment of Global Land Cover Maps. European Communities, Luxembourg.
/30/	Gold Standard MED Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011

2.3 Interviews

DNV held various interviews with the methodology proponents.

Ref.	Date	Name	Organization	Topic
/31/	18 April 2013 12 June 2013 18 June 2013	Steven De Gryze	Terra Global Capital	- Technical discussions mainly on remote sensing and statistics aspects
/32/	18 April 2013 22 April 2013 12 June 2013 19 June 2013 22 June 2013	Benktesh D. Sharma, Ph.D. (Principal)	Terra Global Capital	- Technical discussions mainly on GHG accounting
/33/	20 March 2013	Mark Lambert	Terra Global Capital	- Kick-off meeting

2.4 Use of VCS-Approved Expert

The validation team is in accordance with the requirements of the VCS Version 3.3. Since the first assessor involved in the first assessment of the double approval process included an approved VCS

AFOLU expert /2/, no AFOLU expert needs to be involved in the team of the second assessor. In any case, Edwin Aalders, who is AFOLU Expert for REDD methodologies, participated as Technical Reviewer of the Assessment Report and Methodology element.

				Type of involvement							
Role	***Last Name***	***First Name***	***Country***	Project management	Desk review	Interviews	Reporting	Supervision of work	Technical review	TA 14.1 competence	VCS AFOLU expert
Project Manager	Silon	Kyle	USA	✓							
Team leader (Validator)	Espejo	Andres	Italy		✓	✓	✓	✓		✓	
Technical reviewer	Aalders	Edwin	Norway						✓	✓	✓

2.5 Resolution of Any Material Discrepancy

The objective of this phase of the MED assessment is to resolve any outstanding issues which need be clarified prior to DNV's positive conclusion on the project design. All the findings are listed in Appendix A of this report and the findings are expressed as follows:

A corrective action request (CAR) is raised if one of the following occurs:

(a) An element of the MED is not in compliance with a specific requirement of the VCS Standard;
(b) An element of the MED contains typos, mistakes, errors or lack of internal consistency;
(c) An element of the MED is not in compliance with VCS main principles as set in Section 2.4 of VCS Version 3.3;
(d) An element of the MED is not in line with scientific and other best practice;
(e) An element of the MED needs more clarity;

A clarification request (CL) is raised if the Assessor requires some clarification from the MED proponent on an element of the MED;

An Observation (OBS) is raised when areas of improvement are identified. The MED proponent is not required to address these observations and may consider them voluntarily for the improvement of the MED.

2.6 Internal Quality Control

The assessment report underwent a technical review before DNV approved the MED. The technical review was performed by a qualified technical reviewer in accordance with DNV's qualification scheme.

3 ASSESSMENT FINDINGS

DNV has conducted an assessment in a two-step approach:

- a) The assessment the changes made to version 1.0 of VM0006 /3/;
- b) An overall assessment of the methodology in order to confirm its compliance against the latest VCS requirements.

3.1 Applicability Conditions

The proposed revision of the MED includes changes in the applicability conditions with regard to version 1.0 of VM0006 /3/ in order to make it consistent with various changes made in the methodology regarding the procedures for estimating the change in the reference region and specially the simplifications made in the GHG accounting of the methodology.

While in version 1.0 of VM0006 /3/ the applicability criteria were scatted throughout the methodology, in the present revision these are provided in section 4 in nine different modules, two generic and seven which are related to specific accounting modules which are optional depending on the types of project activities, leakage mitigation options or whether the project is nested in a Jurisdictional REDD+ Programme. DNV assessed all the changes made in the applicability criteria in the different modules:

- Criteria related to conditions on the land before project implementation. The main changes were the following:
    - The list of categories of deforestation/degradation drivers has been expanded in order to expand the scope of the methodology applicability;
    - The number of required points in time for which accurate data on LULC and forest cover has been changed from 4 to 3, and the required distribution of these images in time has been changed.
    - A condition has been included in order to ensure that the project and leakage area must exclude organic soils or peatland which are emission sources not covered as part of the MED.

- Criteria related to conditions on the land after project implementation;
    - The main change has been that commercial harvesting activities are now allowed under the project scenario. This has been one of the main changes.
- Criteria related to optional Assisted Natural Regeneration (ANR) activities. No significant changes were made.
- Criteria related to optional Cook stove and Fuel Efficiency activities (CFE) activities. No significant changes were made.
- Criteria related to optional harvest activities in the project area. This is a new section which did not existed in the previous version. It provides conditions in order to ensure that a harvest plan is in place and that this is prepared following Best Management Practice (BMP) guidance of the country or jurisdiction which will ensure in turn the sustainability of this practice.
- Criteria related to optional intensification of annual crop production systems as a leakage prevention activity. No significant changes were made. Although emissions from the use of fertilizer have been neglected (c.f. section 3.2 below) these applicability criteria have been kept in order to ensure that these activities still occur in the leakage belt and that no other significant emissions which are not considered by the methodology occur (i.e. emissions from peatlands).

- Criteria related to an optional increase in flooded rice production systems as a leakage prevention activity. No significant changes were made.
- Criteria related to an optional increase in livestock stocking rates as a leakage prevention activity. No significant changes were made.
- Criteria Related to Projects that are Nested within a Registered Jurisdictional REDD+ Program. Specific applicability criteria were defined in the case a Jurisdictional REDD program is in place; in this case the REDD program shall allow the registration and issuance of projects, i.e. Scenario 1 or 2/3 of the VCS JNR if the Jurisdiction allows the existence of projects /7/.

DNV has reviewed the applicability criteria, and is able to confirm that they are appropriate for the assumptions made in the GHG accounting procedures of the methodology and describes clearly the conditions under the methodology can or cannot be applied.
DNV confirmed that the MED is in compliance with §4.3.1 of VCS Version 3.3 /4/. Issues identified during the assessment were correctly addressed by the MED proponent (c.f. CAR2).

3.2 Project Boundary

The MED provides criteria and procedures for the definition of the project boundary and identifying and assessing GHG sources, sinks and reservoirs relevant to the project and baseline scenarios. It provides specific procedures for the definition of gases within the project boundary, eligible carbon pools under the applicable methodology, and the applicable spatial and temporal boundaries of the project.
DNV confirms that the criteria and procedures for the definition of the project boundary are in compliance with the VCS Version 3.3 and AFOLU requirements: VCS Version 3.3.
Issues identified during the assessment were correctly addressed by the MED proponent (c.f.CAR3 and CAR4).

3.2.1 *Gases*

The emission sources considered within or out of the project boundary have been changed from VM0006 Version 1.0 /3/ based on the latest guidance provided in the AFOLU requirements: VCS Version 3.3 /5/. The following emission sources **were removed** from VM0006 Version 1.0 /3/:

- N_2O emissions from project activities that apply nitrogen containing soil amendments have been assumed to be negligible. DNV deems that in the framework of a REDD project these emissions would be clearly considered as *de-minimis*; furthermore, this is in line with §4.3.3 of AFOLU requirements: VCS Version 3.3 /5/.
- Fossil fuel combustion from transport and machinery use in project activities. DNV deems that in the framework of a REDD project these emissions would be clearly considered as *de-minimis*; furthermore, this is in line with §4.3.3 of AFOLU requirements: VCS Version 3.3 /5/.
- Biomass burning from unplanned large and small scale fires. DNV deems that in the framework of a REDD project it is expected that the emissions from fires in the project scenario will be lower than those in the baseline scenario. Moreover in order to have significant emissions from uncontrolled burning it would be required for a wildfire to burn all the biomass of a 40% of the area deforested in one year (i.e. burned area = 40% of the net deforestation rate) which would be a catastrophic event which would not be usual. In this case emissions would only be accounted in the case of catastrophic events which are demonstrated not to be *de-minimis*. This is in line with similar approved methodologies such as VM0010.

- Emissions from harvesting and site preparation in ANR areas. This emission source has been eliminated as it is already accounted for when applying the carbon stock change method which is applied in the harvesting and ANR areas (c.f. EQ80 and EQ72 of the MED, $C_{harvest}(t_1, i)$ are the carbon stocks before harvesting and before site preparation, which will enable that any emissions due to harvesting are fully accounted in the stock-change method). Furthermore, harvesting emissions are also considered through the cap of emission reductions equivalent to the long-term carbon stocks. DNV deems that the consideration of these emissions would constitute double accounting.
- Leakage from plantation plots as leakage mitigation measure. Possible emission sources or sinks have been neglected. DNV deems that this is conservative as it is expected that plantation plots will lead to a net increase of carbon stocks and in any case, it is expected that these activities, if they generate significant GHG removals, they would be part of an ARR projects.

Hence, the identified emission sources under the applicability criteria of the MED would be:

- Removal of woody biomass for fire prevention and suppression activities and assisted natural regeneration: CO_2 and CH_4 emissions.
- Increased area of rice production systems: CH_4 emissions.
- Increased livestock stocking rates: CH_4 and N_2O emissions.

Other possible emissions sources not considered here are neglected through applicability criteria of the MED, e.g. leakage and project areas cannot be located in Peatland or Wetlands, leakage mitigation activities have to occur in the leakage belt, etc. Additionally, the MED requires the application of the "Tool for testing significance of GHG emissions" /19/ in order to demonstrate the significance of a certain emission source.

DNV deems that the list of emission sources is complete and that the criteria and procedures are in conformance with §4.4.1-4.4.3 of VCS Version 3.3 /4/.

Furthermore, it was confirmed that the MED is in conformance with §4.3.3-4.3.6 and §4.3.16-4.3.17 of AFOLU requirements: VCS Version 3.3 /5/, more specifically:

- §4.3.3: The MED provides in §5.1 and §8.4.3 provisions to demonstrate that emission sources are not significant following the provisions of the 'Tool for testing significance of GHG emissions in A/R CDM project activities' (version 1) /19/. Furthermore, the following emission sources have been neglected: a) N2O emissions from project activities that apply nitrogen containing soil amendments; b) GHG emissions from the removal or burning of herbaceous vegetation and collection of non-renewable wood sources for fencing of the project area; c) Fossil fuel combustion from transport and machinery use in project activities.

3.2.2 *Carbon Pools*

The VM0006 Version 1.0 /3/ has been revised in order to separate the aboveground tree biomass from the aboveground non-tree biomass and also in order to make the carbon pools selection in accordance with §4.3.1-4.3.2 of the AFOLU requirements: VCS Version 3.3 /5/:

Carbon Pool	Included?	Justification/ Explanation of Choice
Aboveground tree biomass	Yes	Major carbon pool affected by project activities
Aboveground non-tree biomass	Optional	Expected to increase from project activities. Must be included when the land cover under the baseline scenario is perennial tree crop. May be excluded when baseline land cover is annual crop or pasture grass.
Belowground biomass	Optional	Major carbon pool affected by project activities. May be conservatively excluded.
Dead wood	Optional	Major carbon pool affected by project activities. May be conservatively excluded. If included either or both of standing or lying deadwood may be included.
Litter	No	Excluded as per VCS AFOLU requirements.
Soil organic carbon	Optional	Conservative to exclude since this pool is expected to decrease under the baseline scenario. However, may be only included per VCS AFOLU Requirements on the condition that the land cover under the baseline scenario is comprised of annual cropping systems.
Wood products	Yes	Major carbon pool affected by project activities

DNV deems that the list of chosen carbon pools is complete and that the criteria and procedures are in conformance with §4.3.1-4.3.2 and §4.3.16-4.3.17 of AFOLU requirements: VCS Version 3.3 /5/, more specifically:

- §4.3.1: The MED provides a table with eligible carbon pools which is consistent with Table 2 of AFOLU requirements: VCS Version 3.3 /5/. Litter is excluded in any case and SOC is included only in the case the baseline scenario is an annual crop.
- §4.3.16: The MED provides provisions for the inclusion of the wood product carbon pool.

3.2.3 *Spatial and temporal boundaries*

The requirements of VM0006 Version 1.0 /3/ regarding the spatial and temporal boundaries has not changed with this revision.

3.3 Procedure for Determining the Baseline Scenario

VM0006 Version 1.0 /3/ was revised in order to provide procedures for determining the baseline scenario not only for standalone projects but also for projects nested within a Jurisdictional REDD program.

For the former, the baseline is defined in §6.1 of the MED as default as “Existing or historical, as applicable, changes in carbon stocks in the carbon pools within the project boundary”, which is

determined by analyzing historical deforestation and degradation rates in the historical reference period in a comparable area which is the reference region.
For the latter, specific procedures are defined in §6.2 of the MED for the case in which there is a registered jurisdictional baseline. DNV considers that this is in line with the JNR Requirements: VCS Version 3.0 /7/ as existing projects are required to adopt the baseline registered under the jurisdictional REDD program following the grand parenting provisions of the JNR Requirements: VCS Version 3.0, and new projects have to apply already the baseline registered under the jurisdictional REDD program for the applicable scope of this baseline.

3.4 Procedure for Demonstrating Additionality

The Methodology specifies using the latest version of the VCS "Tool for Demonstration and Assessment of Additionality" /10/. This is in compliance with §4.6.1 of VCS Version 3.3 /4/.

3.5 Baseline Emissions

Issues identified during the assessment were correctly addressed by the MED proponent (c.f.CAR5, CAR6, CAR7, CAR8, CL1, CL2, CL3).
Additionally four areas of improvement for the baseline emissions were defined by DNV (c.f. OBS1, OBS2, OBS3, OBS5).
The MED provides specific procedures for determining the baseline emissions. These are determined ex-ante and have to be revised at least every 10 years for the whole project. In the case additional instances are added, and these are located out of the reference region, the reference region will have to be redefined and the deforestation and degradation rates in the historical period will have to be redefined.
The general accounting procedure of VM0006 Version 1.0 /3/ has been kept in this revision, yet there are some aspects of the same which have been changed. The calculation of the baseline emissions would follow the following general steps:

- Selection of spatial and temporal boundaries (§8.1.1 of the MED): Conditions and guidelines for defining the reference region are provided. The main changes of this revision of the MED are the following:
    - While VM0006 Version 1.0 /3/ provided a table with the applicable reference region area for different project sizes, in the case of the revised MED the size of the reference area is fixed and defined as 250 000 ha or at least the size of the project area at the start of the crediting period, whichever is greater. This has been done in order to enable projects to expand their boundaries without the need to revise their reference regions every time they do so.
    - While VM0006 Version 1.0 /3/ required that the reference region had to have a minimum forest cover of 25%, the current version requires at least 15% forest cover at the beginning of the crediting period, unless the reference region encompasses a whole country or island. DNV deems that this change will only affect the availability of data for baseline renewals and will expand the applicability of the methodology to countries or regions were the current forest cover has been reduced significantly due to past deforestation.

  Additional conditions are defined which will a) reduce the risk of bias due to the inclusion of areas which would not serve for projecting the baseline deforestation rate (e.g. bias in boundaries, bias

cause by the inclusion of areas with restricted access, bias due to the inclusion of planned deforestation or degradation activities, or areas deforested due to catastrophic events, and conditions to ensure that the project area and the reference area are comparable); b) ensure that sufficient data is available for adjusting a robust transition matrix. DNV deems that these conditions will minimize the risk of bias in the selection of the reference region and will allow the comparability of both the reference and project/leakage areas.

- Analysis of historical deforestation and degradation rates (§8.1.2 of the MED): MED provides specific criteria and procedures to conduct the analysis of historical deforestation and degradation rates in the union of reference region, project area and leakage area and specify conditions to ensure the accuracy of mapping and specify discount factors in order to achieve conservative estimations in the case the accuracy attained does not meet the minimum requirements set by the VCS Standard /4//13/. DNV deems that these conditions are in accordance with accepted practices defined by GOFC-GOLD (2012) /28/ and Strahler *et al.* (2006) /29/.

  The procedures of analysis of historical deforestation and degradation rates have not changed from VM0006 Version 1.0 /3/ except for the following:

  - One significant change is related to the minimum number of images for conducting the historical analysis (i.e. it changed from 4 to 3) and related to the distribution of these images in time (i.e. one image from 0-3 year before project start date, at least one image from 4-9 years before project start date, and at least one image from 10-15 years before project start date). DNV deems that this will not affect the robustness of the transition matrix as the conditions related to crown cover have not been changed from VM0006 Version 1.0 /3/.
  - An additional change made to VM0006 Version 1.0 /3/ is related the definition of discount factors for the stratification. Now it is required that the same stratification model has to be applied to the project area, leakage area and reference region and in a consistent way until baseline renewal. The variability in the stratification model is already covered by the uncertainty in the carbon densities and emission factors, yet it has to be confirmed that the stratification is valid from a time-wise point of view. In order to demonstrate this, the MED requires conducting additional inventories in time and to join the data in order to include also the temporal variability in the stratification variability. DNV deems that this is adequate. Subjective discount factors are provided depending on the number of points in time that are measured; DNV deems that these discount factors are conservative and that they will incentivize the update of emission factors by project developers.

- Analysis of agents and drivers of deforestation and degradation (§8.1.3 of the MED). This section establishes criteria and procedure to determine the baseline emissions based on various values determined through Participatory Rural Appraisal or other surveys. This serves only for ex-ante calculation purposes, and it is not used to determine the baseline emissions which will be used in ex-post estimation of net GHG benefits. This section has not changed since VM0006 Version 1.0 /3/.

- Determination of emission factors for all transitions (§8.1.4 of the MED). The MED provides criteria and procedures to define emission factors for all transitions which are based on the difference of carbon densities of the different LULC classes and strata. The carbon densities for the forest class are defined through in-situ measurements, while non-forest can be estimated

through in-situ measurements or through conservative values obtained from the literature. The estimation of these emission factors are in accordance with accepted practices defined by GOFC-GOLD (2012) /28/ and by the IPCC LULUCF GPG /27/ and 2006 IPCC GPG /26/. Furthermore, the emission factors

The main changes in this section since VM0006 Version 1.0 /3/ are:

- The incorporation of lineal corrections in order to consider the pattern of carbon loss over time as required by §4.5.3 of the AFOLU requirements: VCS Version 3.3 /5/.
- Now the carbon densities can be estimated through temporal sampling plots or other available methods provided that these are comparable with previous estimations as explained in §8.1.4.4 of the MED.

- Estimation of ex-ante land transition rates under the baseline scenario (§8.1.5 of the MED). The MED provides specific criteria and procedures to use the data obtained from the analysis of the historical deforestation and degradation rates in order to estimate deforestation and degradation rates in the reference region. For the first baseline determination, the analysis will be conducted in the union of reference region, project area and leakage area. The rate is determined through a beta regression of the different degradation rates in the historical period which is then projected in the future depending on the historical evolution. This rate is then adjusted to the size of the project area based on the forest area of the reference region at the start of the historical reference period. Once this rate is defined, the location of the deforestation and degradation is modeled based on the risk of deforestation and degradation provided by a statistical model based on data of the reference region. Hence the location of project deforestation is explicit as required by §4.4.7 of the AFOLU requirements: VCS Version 3.3 /5/. This serves to build annual transition matrix in the project and leakage areas which will then be corrected considering regeneration rates observed in the reference region in the historical period. This will lead to conservative estimations of deforestation and degradation, as gross deforestation and degradation would be converted to net. This section has not changed since VM0006 Version 1.0 /3/.

DNV deems that criteria and procedures to define the baseline emissions are in conformance with the following requirements from AFOLU requirements: VCS Version 3.3 /5/:

- §4.4.1: The methodology is sound and compliance with 2006 IPCC GPG /26/ and GOFC—GOLD's REDD Sourcebook /28/.
- §4.4.5: The baseline for REDD projects is comprised of a land-use and land-cover (LULC) change component and a carbon stock change component as already explained above;
- §4.4.6: It is not applicable as the non-CO_2 emissions are not included as part of baseline emissions.
- §4.4.7 2): The location of baseline deforestation in the project area is modeled as explained in §8.1.5.4 of the MED.
- §4.5.1 and §4.5.2: The methodology is sound and compliance with 2006 IPCC GPG /26/ and GOFC--GOLD's REDD Sourcebook /28/.
- §4.5.3: Lineal corrections in order to consider the pattern of carbon loss over time have been incorporated in the emission factors as explained in §8.1.4.5 of the MED.
- §4.5.15: The methodology is sound and compliance with 2006 IPCC GPG /26/ and the GOFC—GOLD's REDD Sourcebook /28/.

- §4.5.16: Specific provisions for accounting baseline emissions from wood products are provided in §8.4.1 of the MED.

3.6 Project Emissions

Issues identified during the assessment were correctly addressed by the MED proponent (c.f. CAR9, CAR10, CAR11).

The MED provides specific procedures for determining the project emissions. The relevant section provides procedures of ex-ante estimation and equations for ex-post estimation of project emissions in the different components of the project. The calculation of the project emissions would have the following components, which in some cases have been changed or added since VM0006 Version 1.0 /3/:

- Identification of project activities and ex-ante determination of project emissions (§8.2.1 of the MED): The MED provides criteria and procedures to estimate the expected effectiveness of project activities and other factors used for ex-ante estimation of project emissions from deforestation and degradation. This is only for ex-ante estimations. This section has not changed since VM0006 Version 1.0 /3/.

- Estimation of emissions from firebreaks (§8.2.3 of the MED). The MED provides criteria and procedures to estimate the emissions from the removal of vegetation and burning of vegetation of the establishment of firebreaks. DNV confirmed that these procedures are in accordance with IPCC LULUCF GPG /27/ and 2006 IPCC GPG /26/. This section has not changed since VM0006 Version 1.0 /3/.

- Estimation of the Net GHG Sequestration from Assisted Natural Regeneration Activities (§8.2.4 of the MED). The MED provides specific criteria and procedures to estimate the changes in carbon stocks in ANR areas in the project scenario, emissions due to prescribed burning within the ANR areas, and for the estimation of baseline emissions in the project area. DNV confirmed that these procedures are in accordance with IPCC LULUCF GPG /27/, 2006 IPCC GPG /26/ and with other relevant criteria. The only aspect of this section that has been changed since VM0006 Version 1.0 /3/:
    - As explained in section 3.2.1 above, emissions from the removal of vegetation were neglected as any emission will be factored in the carbon stock change estimation using the carbon-stock method (c.f. EQ72 of the MED /1/, $C_{harvest}(t_1, i)$ are the carbon stocks before harvesting and before site preparation, which will enable that any emissions due to harvesting are fully accounted in the stock-change method).

- Estimation of emission reductions from cookstoves and fuel efficiency activities (§8.2.5 of the MED). The MED provides specific criteria and procedures for the estimation of emission reductions from cookstove and fuel efficiency activities. These were based on the procedures provided in AMS-II.G Version 5 /17/ and Gold Standard's methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption" /30/, yet with some modifications. The only aspects of this section that have been changed since VM0006 Version 1.0 /3/:
    - Now emission reductions from cookstove and fuel efficient activities can also be accounted in the case degradation is accounted for. In this case only emission reductions from non-CO2 emissions can be accounted for in order to avoid any double counting.

DNV deems that this is correct and that it will avoid any double accounting while enabling activities to account for these emissions which are real and already accounted considered by other methodologies such as Gold Standard's methodology "Technologies and Practices to Displace Decentralized Thermal Energy Consumption" /30/

- In the case of deforestation and when degradation is not included, emission reductions from CO_2 and non-CO_2 emissions can be accounted for provided that fuelwood collected as part of deforestation is discounted in order to avoid double counting. DNV deems that this approach will avoid any double counting with the biomass estimates.
- The fraction of non-renewable biomass has been deleted. DNV agrees that this is acceptable in the case degradation is not accounted for as it is expected that the gross increment in the project scenario will be higher than in the baseline scenario.

- Estimate GHG Emissions from Harvesting (§8.2.5 of the MED). This section was not present in VM0006 Version 1.0 /3/ as harvesting activities were not allowed in that version. Now, since harvesting operations are allowed, the MED provides specific criteria and procedures to estimate the changes in carbon stocks in harvesting areas in the project scenario, and for the estimation of baseline emissions in the project area. In order to account for emissions from harvesting, it establishes procedures to estimate the Long-term Average Carbon stocks in order to ensure that no GHG benefits are generated over this as required by §4.5.17 of AFOLU requirements: VCS Version 3.3 /5/. When the accumulated carbon stocks are below this value, the emissions reductions are estimated through changes in carbon stocks in the project scenario and using the baseline emissions estimate in the baseline scenario. DNV confirmed that these procedures are in accordance with IPCC LULUCF GPG /27/, 2006 IPCC GPG /26/ and with other relevant criteria.

DNV deems that criteria and procedures to define the project emissions are in conformance with the following requirements from AFOLU requirements: VCS Version 3.3 /5/:

- §4.5.1 and §4.5.1: The methodology is sound and compliance with 2006 IPCC GPG /26/ and GOFC—GOLD's REDD Sourcebook /28/.
- §4.5.3: Lineal corrections in order to consider the pattern of carbon loss over time have been incorporated in the emission factors as explained in §8.1.4.5 of the MED.
- §4.5.15: The methodology is sound and compliance with 2006 IPCC GPG /26/ and GOFC—GOLD's REDD Sourcebook /28/.
- §4.5.16: Specific provisions for accounting project emissions from wood products are provided in §8.4.1 of the MED.
- §4.5.17: Since harvesting is allowed in the project scenario the methodology includes criteria and procedures to quantify GHG emissions/removals from such harvesting as explained above.

3.7 Leakage

Issues identified during the assessment were correctly addressed by the MED proponent (c.f.CAR12, CAR13, CAR14, CL4,).

The MED provides specific procedures for determining leakage emissions. The following sources were identified:

- Activity-shifting leakage from constrained drivers. The MED provides criteria and procedures to estimate ex-ante this source based on ex-ante estimates of baseline emissions, based on expected project's performance and based on expected leakage cancellation rates. Ex-post, leakage from activity displacement of constrained drivers is calculated through monitoring of land transitions in the leakage area.
- Activity-shifting leakage from unconstrained drivers. The MED provides criteria and procedures to estimate ex-ante this source based on ex-ante estimates of baseline emissions, based on expected project's performance and based on expected leakage cancellation rates for unconstrained drivers. Ex-post, leakage from activity displacement of unconstrained drivers is based on conservative default values.
- Market leakage. This is to be calculated ex-post following the provisions of: "Estimation of Emissions from Market Leakage" VMD0033 (version 1.0) /12/. This is only accounted in the case baseline activities included logging operations where timber is supplied to regional, national or global markets.
- Emissions from leakage prevention activities: Criteria and procedures for the estimation of a) Emissions from increased area of flooded rice cultivation; b) Emissions from increased animal stocking rates are included.

DNV deems that criteria and procedures to define the leakage emissions are in conformance with the following requirements from AFOLU requirements: VCS Version 3.3 /5/:

- §4.6.1: The MED provides provisions to determine market leakage and activity-shifting leakage as explained above;
- §4.6.2: The MED includes provisions to neglect emission sources that are considered de-minimis as explained in §8.4.3 of the MED.
- §4.6.3: GHG emissions from leakage are determined directly from monitoring and indirectly for unconstrained drivers as explained above.
- §4.6.4: The MED, cf. §8.3.1, includes provisions for estimating market leakage where the production of a commodity (i.e. timber) is significantly affected by the project
- §4.6.6: The MED, c.f. §8.3.4, includes provisions for estimating emissions from leakage mitigation activities and it provides procedures to neglect this if it is not significant.
- §4.6.7: The MED, c.f. §8.4.4, includes provisions for not accounting positive leakage.
- §4.6.15: According to the MED, c.f. §8.3.1, activity-shifting leakage is calculated by monitoring forested areas surrounding the project and other forested areas within the country susceptible to leakage from project activities;
- §4.6.16: According to the MED, c.f. §8.3.1, in the case the baseline includes illegal logging activities that supply regional, national and/or global timber markets, domestic market leakage shall be quantified following the tool for "Estimation of Emissions from Market Leakage" VMD0033 (version 1.0) /12/.

3.8 Quantification of Net GHG Emission Reductions and/or Removals

Issues identified during the assessment were correctly addressed by the MED proponent (c.f. CAR15, CL5).

The MED provides clear criteria and procedures to estimate the net GHG emission reductions and removals by the project. DNV confirmed that the equations provided are correct and that there would be

no double accounting of emission reductions. Furthermore, procedures in order to ensure that no GHG benefits are claimed in harvesting areas above the LTAC are provided

In addition, the MED provides a clear procedure for estimating the GHG benefits for each year in the crediting period, and how the VCU's generated by the project would be estimated considering the provisions of the AFOLU Non-Permanence Risk tool: VCS Version 3.2 /8/

The approach provided for calculating baseline emissions, project emissions and emission reductions are deemed appropriate and adequate by DNV and they are in compliance with §4.7 of AFOLU requirements: VCS Version 3.3 /5/ and §4.7 of VCS Version 3.3 /4/.

3.9 Monitoring

Issues identified during the assessment were correctly addressed by the MED proponent (c.f. CAR17, CAR18, CAR19).

Additionally one area of improvement for the baseline emissions was defined by DNV (c.f.OBS4).

The MED provides clear criteria and procedures of the project monitoring including procedures for: the ex-post estimation of project emissions, leakage emissions and calculation of Net Emission Reductions; the inclusion of additional project parcels or instances in a group project, and for the update of the baseline every 10 years as required by the VCS requirements.

DNV deems that the monitoring plan is complete as it provides complete and sound methods for monitoring leakage, changes in carbon stocks and other emissions.

Quality control and quality assurance procedures have also been properly prescribed for all major monitoring activities to further ensure the accuracy and reliability of the emission reduction estimates.

3.10 Data and Parameters

Issues identified during the assessment were correctly addressed by the MED proponent (c.f.CAR16, CL6, CL7).

The MED provides a clear list of parameters available at validation and other parameters which will be monitored periodically or which will be revised at baseline renewal.

DNV checked the GHG accounting procedures of the MED and confirmed that the list of parameters is complete. Furthermore, DNV confirms that the estimation or monitoring procedures, the monitoring frequencies (if applicable) and other conditions are adequate.

DNV deems that the list of data and parameters and the provided information is appropriate, adequate, and in compliance with §4.7 of AFOLU requirements: VCS Version 3.3 /5/ and §4.7 of VCS Version 3.3 /4/.

3.11 Use of Tools/Modules

Issues identified during the assessment were correctly addressed by the MED proponent (c.f.CAR1). The MED refers to various VCS and CDM tools which could have issues regarding their inclusion in the methodology. DNV confirmed that there are no such issues:

- AR AM Tool 09 "Estimation of GHG emissions related to displacement of grazing activities in A/R CDM project activity." (Version 02) /23/. In order to avoid issues, the MED refers clearly that emissions from deforestation and from fertilization accounted in the tool should not be considered.

- VCS Module VMD0033 (Version 1) “Estimation of Emissions from Market Leakage” /12/. Referred to in the leakage section only in the case where there are logging operations in the baseline which supply to regional, national or global markets.

DNV confirmed that all tools are referred correctly and applied correctly.

3.12 Adherence to the Project Principles of the VCS Program

DNV confirms that the principles of relevance, completeness, consistency and accuracy, transparency, and conservativeness are properly addressed in the methodology, as is discussed below:

- Relevance: The MED adhere to the principle of Relevance by specifying applicability conditions for the Methodology (c.f. §4 of the MED) and providing criteria and guidance for selection of carbon pools and emission sources (c.f. §5 of the MED) in conformity with the VCS requirements.
- Completeness: The MED adhere to the principle of Completeness by requiring accounting for all carbon pools and emission sources (c.f. §5 of the MED) that may significantly affect net GHG benefits generated by the project over the crediting period;
- Consistency: The MED adhere to the principle of Consistency by providing standardized methods which would be applied consistently by different projects applying the methodology and ensures that these methods are applied consistently in time in order to ensure that emission reductions are comparable within and amongst projects;
- Accuracy: The MED adhere to the principle of Accuracy by providing detailed procedures for the reduction of bias (i.e. QA/QC provided in §10.3 of the MED) and for the estimation of uncertainties (c.f. 8.1.4.4). When it is not possible to arrive to accurate values, it provides the option of using conservative values or the application of correction factors in order to have a conservative estimate (c.f §8.1.2.4.3 of the MED).
- Transparency: The MED adhere to the principle of Transparency by providing procedures for accounting of GHG benefits which are transparent and by requiring the reporting of relevant parameters in the different reports.
- Conservativeness: The MED adheres to the principle of conservativeness by ensuring that conservative values are applied whenever a minimum level of accuracy cannot be attained.

3.13 Relationship to Approved or Pending Methodologies

Currently there are three other REDD methodologies approved under the VCS: VM0007, VM0009 and VM0015. However, these methodologies include procedures for determining deforestation not degradation. Furthermore, VM0009 adjusts the baseline based on sampling so the fact that it is not special explicit (Approach 3) would make it impossible to revise it in order to account for degradation. VM00015 on the other hand does not accept the grouping of projects. VM0007 requires a reference region fully forested at the beginning of the historical period which would constitute an issue as it would not be easy to identify a forested reference region with enough size.

Hence, DNV is of the opinion that it would not possible to revise other methodologies to serve the same purpose as the proposed methodology.

3.14 Stakeholder Comments

The revised methodology has been made public on the VCS website for the period of 30 days during which no comments were posted on the VCS website nor were there any comments sent to the methodology developed.

4 RESOLUTION OF CORRECTIVE ACTION REQUESTS AND CLARIFICATION REQUESTS

The assessment identified 20 CARs, 8 CLs and 5 OBS. The CARs and CLs were satisfactorily addressed by the project participants by among other revising the MED (please refer to **Appendix A** for further details).

5 ASSESSMENT CONCLUSION

Det Norske Veritas (U.S.A.), Inc (DNV) has performed a validation of the "Revision of VM0006 - Carbon Accounting for Mosaic and Landscape-scale REDD Projects". The validation was performed on the basis of VCSA criteria for methodologies as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the MED and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfillment of stated criteria.

It is DNV's opinion that the MED "Carbon Accounting for Mosaic and Landscape-scale REDD Projects", Version 14.0 as described therein, is in compliance with the methodological requirements set in AFOLU requirements: VCS Version 3.3 and VCS Version 3.3. Hence, DNV recommends the approval of the revision as the revised VCS VM0006 Methodology.

6 REPORT RECONCILIATION

No report reconciliation has been done.

7 EVIDENCE OF FULFILMENT OF VVB ELIGIBILITY REQUIREMENTS

Det Norske Veritas (U.S.A.), Inc holds accreditation to perform validation for projects under sectorial scopes 3 (agriculture, forestry, other land use) under the American National Standards Institute (ANSI). DNV, therefore, is eligible under the VCS Program to perform assessments for the MED, which falls under the sectorial scope 3.

8 SIGNATURE

Signed for and on behalf of:

Name of entity: Det Norske Veritas (U.S.A.), Inc

Signature:

Name of signatory: Mirzakhani, Ali A.

Date: 18 September 2013

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APPENDIX A

RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS, AND OBSERVATIONS

Corrective action requests

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
CAR1	**Element of MED** General **Requirement** VCS Version 3.3 **Evidence** MED Version 05, c.f. Section 1 Sources, Section 8.3.4.3 **Corrective Action Request** **a)** The MED lists a number of CDM methodologies from which some methodological elements have been sourced. The MED states that the latest version has been used of each methodology. However, DNV checked the MED and confirmed that specific versions of CDM methodologies which are not the latest one have been used (e.g. AR-AM0006 Version 02 instead of AR-AM0006 Version 3.1.0; the MED applies provisions of AR-ACM0001 Version 3 which is not the latest one). Please list the specific versions which were used. It is not necessary to update the MED to the latest available as in some cases the latest one has changed significantly and would be no longer applicable to the MED. Furthermore, please review the whole MED in order to ensure that the correct version of the CDM methodology is referred to. **b)** Section 1 does not list the following tools/modules which are referred to in the MED: - "Estimation of emissions from fossil fuel combustion (E-FFC)" VMD0014 (version 1.0) - "Estimation of Emissions from Market Leakage" VMD0033 (version 1.0) -'Tool for testing significance of GHG emissions in A/R CDM project activities' (version 1), EB31	**Response #1** (MED Version 06) References corrected and missing references added.	**Assessment #1** (MED Version 06) The MED has been revised and it refers to the correct versions of methodologies and tools - OK **CAR1 is closed**
CAR2	**Element of MED** Applicability Conditions **Requirement** §4.2.5 - AFOLU requirements: VCS Version 3.3 **Evidence (Report Section)** MED Version 05, c.f. Section 4 **Corrective Action Request** a) Applicability condition 1 is not clear as it	**Response #1** (MED Version 06) a) Section 4. Applicability Condition 1 Criteria 1 has been amended as follows: "1. Land in the project area, consisting of either one contiguous area or multiple discrete project parcels (see definition of project area), shall meet an internationally accepted definition of forest, such as those based on UNFCCC host-country thresholds or FAO definitions, and shall qualify as forest for a minimum of 10 years before the project start date."	**Assessment #1** (MED Version 06) The MED has been revised. Applicability condition 1 is in compliance with the VCS requirements - OK. **CAR2 is closed**.

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	seems that it only requires that the project area has to comply with the definition of forest 10 years before the starting date. As required by the VCS, "the project area shall meet an internationally accepted definition of forest, such as those based on UNFCCC host-country thresholds or FAO definitions, and shall qualify as forest for a minimum of 10 years before the project start date."		
CAR3	**Element of MED** Project Boundary **Requirement** §4.3 - AFOLU requirements: VCS Version 3.3 **Evidence (Report Section)** MED Version 05, c.f. Section 5.1 **Corrective Action Request** **a)** Table 1 does not include the following emission sources which are considered in the MED: i) fossil-fuel consumption; ii) small-scale and large-scale fires in the project area; **b)** Table 2 makes reference to the "Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected". It should be clearly noted in Table 2 that this Procedure is applicable to the ANR activity and to the leakage mitigation activities, as it refers to emissions of SOC due to site preparation, which obviously is not applicable to other areas or activities.	**Response #1** (MED Version 06) a) Section 5.1 Table 1 has been revised to include i) fossil fuel emission sources and ii) unplanned small-scale and large-scale fires in the project area. Fossil fuel consumption is an optional emission source according to VCS (see VCS Module VMD0014). Fossil fuel emissions are included here to ensure that GHG accounting of project actvities is adequately conservative and to provide flexibility to project proponents who seek to account VCUs from decreased fossil fuel emissions in the project. Tests of significance will be conducted for all GHG emissions (see Sections 8.3.2.4 and 8.4.3). Sources that are determined to be insignificant may be omitted from NER calculations. b) Section 5.1 Table 2 has been revised to include SOC and litter carbon pools as "optional" and "Conservative to exclude since this pool is expected to decrease under the baseline scenario ". The CDM tool was originally referenced since it is applicable to projects where SOC is expected to increase with project activities as in VM0006, however this reference has been removed since the tool is applicable only to settlements, croplands and grasslands. The revised method is no less conservative while being broadly applicable to the entire project area. By making the SOC and litter carbon pools "optional" the revised methodology provides flexibility to project proponents who seek to account ex-post carbon increases in SOC and litter pools. **Response #2** (MED Version 07) Reference to AFOLU requirements on SOC pool were added – see comment "CAR 3#2"	**Assessment #1** (MED Version 06) a) Table 1 has been revised and it now includes the following emission sources: i) fossil-fuel consumption; ii) small-scale and large-scale fires in the project area – OK. b) The MED has been revised. The reference to the "Procedure to determine when accounting of the soil organic carbon pool may be conservatively neglected" has been deleted. However, according to the AFOLU requirements (§4.3.1) accounting of the SOC pool is only allowed in the case of Planned or unplanned deforestation/degradation (APD or AUDD) with annual crop as the land cover in the baseline scenario. Explicit reference to this shall be made in Table 2 so that it is clear that this carbon pool cannot be considered when the conversion is to pasture grass or to perennial tree crop – **NOT OK**. **Assessment #2**(MED Version 07) The MED has been revised and now states in Table 2 "Conservative to exclude since this pool is expected to decrease under the baseline scenario. However, may be only included per AFOLU requirements on the condition that the land cover under the baseline scenario is comprised of annual cropping systems", which will ensure compliance with AFOLU requirements (§4.3.1). However, i) the section on carbon pools it is not in accordance with AFOLU requirements (§4.3.1): - Litter cannot be included Furthermore, please note that: - ABGNT should be optional for the cases in which the baseline consists on annual cropping systems or grasslands. -BGB should be optional too.

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
			-DW should be optional and it would be better if it is explained that it is possible to account for only one of both LDW and SDW. ii) In table 1 there are still some issues: - In the case degradation is not included in the estimation of changes of carbon pools; it might be included as emission source from cookstoves. So this CO2 emission source is missing in the baseline and project scenario - Non-CO2 emissions from burning in cookstoves is an emission source present in the baseline and project scenario. - Increased area of rice production systems only considers emissions from CH4. Since emissions from controlled burning in ANR and emissions from removal and burning of biomass in fire prevention activities are not separated as independent emission sources, this might lead to confusion as the former does not account for CO2 emissions as these are considered in the carbon stock changes calculations. – **NOT OK**.
		Response #3 (MED Version 10) Carbon pools revised. (table 2) i) Litter pool is removed (i.e. excluded); AGNT and BGB were made optional. DW was made optional and options for including either or both LDW and SDW were provided. ii) In table 1 - Baseline CO2 is optional. Included only when degradation is excluded and CFE are implemented. Similarly, emissions from CH4 and N2) are made optional and are included in CFE activities are implemented. Non-CO2 emissions from CFE are also added for project scenario. Removed N2O emissions for Rice cultivation. Source for prescribed burning and ANR are now separated.	**Assessment #3** (MED Version 10) The MED has been revised. It was confirmed that the MED is now in accordance with the AFOLU requirements on project boundary definition - OK. **CAR3 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
CAR4	**Element of MED** Project Boundary **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 3.2 **Corrective Action Request** **a)** The MED states that "The reference region must exclude areas where planned deforestation activities took place". In order to avoid any bias from large-scale extraordinary deforestation events which are not planned, these shall be excluded too (e.g. deforestation caused by geological and weather impacts which are not frequent and are significant in their impact) as these are not likely to occur within the project area during the crediting period. **b)** In Table 3, under comparison procedure it is stated "Demonstrate that the land-tenure system prevalent in the reference region is **identical** to the land-tenure system in the project area", while under Explanation it is stated "The specific land tenure system impacts the rate of land use changes, and must therefore be **similar** between the project area and reference area". The same wording shall be applied in both columns. The MED proponent shall note that flexibility should be provided as in some cases two land-tenure systems might not be identical but from a deforestation agent/driver perspective they are similar.	**Response #1** (MED Version 06) a) Section 8.1.1.2. Condition has been added: "The reference region must exclude deforested areas caused by natural (non-anthropogenic) large-scale, extraordinary events (e.g. geological and weather impacts which are infrequent but significant in their impact on the landscape). Such areas are excluded from the reference region since these are not likely to occur within the project area during the crediting period." b) Table 3 text has been updated to consistently state that land tenure systems must be similar between the project area and reference region. The revised Comparison procedure states: "Demonstrate that the land-tenure system prevalent in the reference region is similar to the land-tenure system in the project area with reference to peer-reviewed literature, reports, or expert opinion. Any differences in land tenure systems between the project area and reference region must not affect the drivers of deforestation and degradation or the operation of the agents of deforestation and degradation." The revised Explanation states: "The specific land tenure system impacts the rate of land use change, and must therefore be similar between the project area and reference region, especially in terms of how the land tenure system may impact access and mobility of the agents or influence the drivers of deforestation and degradation."	**Assessment #1** (MED Version 06) a) The MED has been revised. It now clearly indicates that extraordinary deforestation events shall not be considered – **OK.** b) The MED has been revised. DNV agrees that having two identical land-tenure systems will not ensure that two deforestation/degradation agents would act in the same way or would have the same mobility as this depends on many other aspects (e.g. law enforcement, etc.). In the same way agents may act in the same way in two areas with different land-tenure systems if those systems have the same impact on the mobility or accessibility of those agents. DNV agrees with the revision made and confirms that it will ensure that the reference area will be comparable to the project area, and will ensure that the MED does not constraint its applicability **– OK.** **CAR4 is closed.**
CAR5	**Element of MED** Baseline Emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.2.2 **Corrective Action Request** a) Section 8.1.2.2 provides criteria and procedures for the definition of LULC Classes and Forest strata. DNV understands that this is applicable to the project area, reference region and leakage area, and that in these three cases the same stratification criteria for the definition of	**Response #1** (MED Version 06) a) Section 8.1.2.2 has been revised to state that classification and stratification should be developed for and applied to all areas across all image dates. The last sentence of paragraph 1 states: "The same LULC classification and forest stratification must be developed for and applied to all analysis areas (i.e. reference region, project area and leakage area) and crediting periods in order to avoid any spatial or temporal bias in carbon accounting."	**Assessment #1** (MED Version 06) a) Section 8.1.2.2 now clearly states that the same LULC classes and stratification will be applied to project area, reference area, and leakage area. Now this will be clear for the reader **– OK.** **CAR5 is closed.**

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	the forest strata shall be applied in order to avoid any bias. However, section 8.1.2.2 is not clear as in some lines it only makes reference to the reference region (c.f. line 507), to the project area and the reference area (c.f. line 524-525), and it does not explicitly state that the same stratification criteria and LULC classes shall be applied to the three areas. Section 8.1.2.2 of the MED shall be further elaborated.		
CAR6	**Element of MED** Baseline Emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.2.4 **Corrective Action Request** **a)** The conditions regarding the maximum cloud cover provided in lines 591-599 and EQ1 shall be further elaborated as it is not clear the second condition. DNV understands that with such condition it is required that the average cloud cover of the change mapping (total cloud cover in each pair of images) is below 20%; however, this is not evident. **b)** Section 8.1.2.4.3 provides criteria and procedures for conducting the accuracy assessment. However, it is not clear whether this is applicable to the reference region, to the project area or to both. **c)** Section 8.1.2.4.3 provides procedures for determining the accuracy of the forest stratification. However, it is not clear the exact procedures for doing the comparison: i) as it is not possible to determine this accuracy for the stratification of the historical images; and ii) it is not clear whether this is also done for the reference area or whether the project area is used as a proxy. This element shall be further elaborated in order to clearly explain how this accuracy will be determined at the beginning of the project and during the project monitoring.	**Response #1** (MED Version 06) a) Section 8.1.2.4.1 has been simplified and clarified. b) Section 8.1.2.4.3 second paragraph has been revised as follows: "The accuracy assessment of LULC classification and forest stratification must follow the best practices for remote sensing (e.g., Congalton 1991) and should be conducted for all image-based maps produced for the project" c) Section 8.1.2.4.3 lines have been added to clarify: " It is allowed to only use reference locations that are located within the project area to minimize cost. However, reference locations may be located throughout the reference region and/or leakage area as needed." It was clarified with the auditor that, at the start of the project, insufficient historical data may be available for forest stratification. However, once a project is on-going, extra data may become available and credits from avoided degradation may be added at a later stage. The latter is now also elaborated upon (see comment bubble in revised version)	**Assessment #1** (MED Version 06) a) The MED has been revised. Now it states "The maximum allowable cloud cover is ≤ 20% for a single image or ≤ 20 % on average across image pairs used in the transition rate analysis" which will at least 80% of double coverage in the reference area which is sufficient in order to have a robust transition matrix – OK. b) & c) The MED is still not very clear with this regard. -Ex-post vs. ex-ante: While in §8.1.2.4.3 it is stated that the discounting factors are fixed till the next baseline renewal, in section 9.3.2 it is stated that an ex-post factor would be determined. In previous versions of the MED the discounting factor was determined ex-ante and it was "updated" ex-post in the case a lower accuracy was attained ex-post. -Project/leakage area vs. reference area: In in §8.1.2.4.3 it is not stated that the accuracy assessment has to be done over the for the whole analysis area, i.e., the union of the project and leakage areas and the reference region. However, it is not logical to apply the discounting factor based on number of images in historical reference period to the accuracy assessment obtained in the project area, or even to the different transitions monitored ex-post. My understanding is that: i) the ex-ante accuracy assessment is used to determine the discounting factor which will be applied to the baseline rates. ii) The ex-post accuracy assessment would be used to determine a discount factor to apply to the project transition rates. Obviously this discounting rate would not consider the number of images available in the reference period as it is irrelevant. One option would be to have two different discounting factors, or to leave it as it was in the approved version of the methodology were the lowest accuracy of ex-ante and ex-post is used to define the discounting factor. This would be conservative. -Accuracy of stratification: This is something I pointed out in our first phone call. I am not sure whether it is correct the accuracy assessment of stratification as if a certain carbon density is determined with a 15% of precision at a 95% confidence level, the chances to have more than 70% of reference points above the average is not unlikely. My understanding is that at the beginning of the project emission factors for each stratum is determined through in-situ measurements (i.e. forest inventory); probably only in the project area, so doing this accuracy assessment at the beginning is not

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			very logical. In order to ensure that throughout the project's monitoring the stratification has been conducted correctly as this is the only way to monitor, the project developer could conduct new measurements in order to demonstrate that the measurements are within the confidence level at 95% of that emission factor, yet I am not sure whether this or the stratification accuracy assessment is practical as it would mean in the end conducting a fresh inventory and updating the emission factors per stratum – **NOT OK**.
		Response #2 (MED Version 07) Ex-post vs. ex-ante: u_classification is fixed ex-ante, but u_stratification can be updated as it is only dependent on biomass measurements. Section 9.3.2 reflects this change (See comment "CAR 6#2"). Project/leakage area vs. reference area: This concern should be taken care of as the same discounting factor ex-post is used as the one used ex-ante for u_classification. A whole new procedure is proposed for u_stratification. Accuracy of stratification: A proposal was discussed during a call with the auditor and implemented. The uncertainty of stratification is based on the uncertainty of the emission factors, but discounted further for the number of time periods that are available to determine the emission factor. At the very least, 2 time periods are required for ex-post calculations (See comment "CAR 6#2"). **Response #3** (MED Version 07.3) Text was revised and inconsistencies removed Procedures to follow in case of new biomass inventories were added to the beginning of 8.1.4.4 8.1.4 was revised and made compatible	**Assessment #2** (MED Version 07) b) & c) Now the procedures for conducting the accuracy assessment of the LULC classification is clear: at the time of validation the accuracy of all LULC maps will be assessed for the reference region and the leakage area for the whole historical period and the lower of all will be fixed ex-ante. Ex-post it has to be ensured that the accuracy of all maps is above the accuracy defined ex-ante. However, some inconsistencies remain in section 8.1.2.4.3 from a previous version – **NOT OK.** In relation to stratification, DNV deems that it is clear now. However, it is not clear what are the procedures to follow in the case of new biomass inventories become available: a) the carbon density has to be updated using only the newest data? (In this case the MED should be revised in other points such as 8.1.4); b) the carbon density has to be updated adding the newest data to the old set – **NOT OK**. **Assessment #3** (MED Version 07.3) b) & c) All inconsistencies regarding the accuracy assessment of the LULC classification have been corrected – **OK**. Regarding the stratification, the MED now provides specific procedures on how to use these plots – **OK**. **CAR6 is closed.**
CAR7	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.4.4 **Corrective Action Request** a) Lines 961-963 state that "Standing dead trees **must** be measured using the same procedures used for measuring live trees **with the addition of a decomposition class**". This is not correct	**Response #1** (MED Version 06) a) We have revised the procedure so a decomposition class and a biomass reduction factor and added a reference to methods from CDM tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in AR CDM project activities"	**Assessment #1** (MED Version 06) The MED has been revised. It now includes specific procedures for the quantification of biomass in trees that have only bole and twigs which is in line with the CDM tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in AR CDM project activities" - OK. **CAR7 is closed.**

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	as it must be also considered the addition of a biomass reduction factor, i.e. in some cases only the bole or the bole + large branches might remain from a standing tree so considering only the decomposition class would cause bias in the biomass estimations.		
CAR8	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.5.4 **Corrective Action Request** Section 8.1.5.4 provides a description of the procedure in order to determine $\Delta area_{projectAreaWithoutANR,baselineScenario}(t,i)$ and $\Delta area_{projectAreaWithANR,baselineScenario}(t,i)$. This procedure consists on a reiterative procedure for defining deforested and degraded cells. As part of this procedure the following issues have been identified: **a)** The procedure described starts by defining the location of deforestation for all the years of the baseline validation period. Once the deforested cells are identified, the same procedure is followed but for degradation. So in this case the project area is firstly deforested and then degraded. Although DNV understands that this approach is correct as there is no double accounting in the method to determine the deforestation and degradation rates, it finds some issues when this procedure is applied to a non-degraded forest at the beginning of the baseline modelling. Imagine that the project area is a non-degraded forest. Following the procedure, the first year of the baseline model we would assume that $D_{projectArea,baselineScenario,DF}(t)$ ha would be deforested and that $D_{projectArea,baselineScenario,DG}(t)$ would be degraded. However, in reality degradation occurs before deforestation occurs, and in this case we would be assuming that deforestation of a non-degraded forest occurs without a previous degradation, and that then we would have an additional amount of degradation. This	**Response #1** (MED Version 06) the degradation is applied to the result of the deforestation. If an area is deforested right before the degradation pass, it cannot be degraded anymore because there is no more forest left, so one cannot overestimate emissions. Added a clarifying sentence to step 5.	**Assessment #1** (MED Version 06) a) We referred to the opposite. In the first year cells are firstly "deforested", and then cells which were not "deforested" are "degraded". However, this usually occurs in the other way round, especially when we are talking about pristine forests. In the first year we would firstly "degrade" cells, and then over the degraded landscape we would "deforest" it. If we do it in the other way round we would be "double accounting" the first year as we would be assuming that deforestation occurs with a previous degradation. This can be an issue when the landscape is not substantially degraded, i.e. at least $D_{projectArea,baselineScenario,DG}(t)$. I understand that this will not be very common but it may be an issue in certain cases – **NOT OK**. b) The MED has been updated and it now states clearly that the scarcity factor is also applied to degradation – OK. c) Not clear yet. Please note that in step 3 it is written "Any transitions of non-forest area to forest area (e.g., natural regrowth) must be taken into account when updating the remaining forest cover" so it seems that the natural regrowth is already considered when preparing the deforestation transition matrix; however, in step 6 it is mentioned that the regeneration or regrowth is considered once the gross deforestation and degradation maps have been done. This should be clearer. – **NOT OK.** d) The MED has been updated. Now it clearly states that the net deforestation and degradation maps have to be prepared for the project area, and the results have to be isolated for areas with and without ANR – OK. e) Within the project area there could be three different areas: i) areas without ANR AND without Harvesting; ii) Areas with ANR; and iii) Areas with Harvesting. These three areas have different accounting provisions, while the first area can account for DEF/DEG and its monitoring is based solely on AD, the second area can account for DEF/DEG and monitoring is based on forest inventory and the third are can only account for DEF and the monitoring is based on forest inventory. Therefore, there should be four parameters to estimate the baseline emissions if we are not mistaken: $\Delta area_{projectAreaWithoutANR\&Harvesting,baselineScenario}(t,i)$ which is required in EQ110, $\Delta area_{projectAreaWithoutANR,baselineScenario}(t,i)$which is required in EQ112 $\Delta area_{projectAreaWithANR,baselineScenario}(t,i)$for EQ115 and

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	could cause an overestimation of reduction in carbon stocks the first year of the series in this case. The MED shall be revised in order to ensure that: a) the forest in the project area has already at least $D_{projectArea,baselineScenario,DG}(t)$ ha of degraded area; OR b) in the case the forest is not degraded, the first year of the series degradation occurs before deforestation; OR c) any other alternative procedure in order to avoid this issue. **b)** The MED is not clear on whether the scarcity factor is also applied to forest degradation. **c)** The MED provides a procedure to estimate $\Delta area(t, CS1 \rightarrow CS2)$ but it is not clear how this is integrated with the deforestation and degradation transitions. DNV understands that the transition matrix of gross deforestation/degradation would be "corrected", yet the MED is not clear. This should be further elaborated. **d)** It is stated in lines 1317-1318 that all the steps for identifying the LULC and strata transitions have to be done separately for areas with and without ANR. However, this might be misleading as the likelihood of deforestation and degradation cannot be treated separately for these two areas. It should be stated instead that the transitions are defined for the whole project area and that then the results are isolated for areas with and without ANR. **e)** It is stated in lines 1318-1319 that the above steps would serve to estimate $\Delta area_{projectAreaWithoutANR,baselineScenario}(t,i)$, $\Delta area_{projectAreaWithANR,baselineScenario}(t,i)$. However, DNV's understanding is that the transitions for the project area with harvest (i.e. $\Delta area_{projectAreaWithHarvest,baselineScenario}(t,i)$) have to be determined too as these are needed for the calculation of NERs (i.e. EQ111)	**Response #2** (MED Version 07) a) This CAR was further clarified in a phone call with the VVB and closed during the call. c) The quoted sentence was meant as "transitions of non-forest area to forest area FROM PREVIOUS YEARS must be taken account...". Since this sentence was both redundant and confusing, we deleted this sentence. We added a clarification sentence later in step 3 saying that the forest scarcity factor should be initially based on the forest cover of the previous year. See comment «CAR 8C#2». e) The auditor is right: there are only three areas to consider: (1) without ANR and without harvesting, (2) with ANR, and (3) with harvesting. This was made consistent throughout the methodology. Equations 110, 112, 115, and 120 were updated accordingly. See comment «CAR 8e#2». If an area is subject to ANR and harvesting, it should be considered under areas under harvesting. This is clarified in both the ANR (8.2.4) and harvesting (8.2.6) sections. See comment «CAR 8e#2» **Response #3** (MED Version 07.3) Agreed – the clipping is now included as an explicit separate step after step 5 in Section 8.1.5.4	$\Delta area_{projectAreaWithHarvest,baselineScenario}(t,i)$ for EQ120. **NOT OK** **Assessment #2** (MED Version 07) a) The deforestation model provides an estimate of deforestation and degradation rate in the historical period, and these two estimates are obtained through classification of transitions in the same pairs of satellite imagery. Therefore, the estimate of deforestation would already considered previous degradation while the degradation estimate provides an estimate of degradation that has occurred on top of deforestation and that will probably lead to additional deforestation in the next period. The inclusion of degradation only increases emission reductions in time but in the end the expected ER for a scenario with and without degradation would be probably the same. Furthermore, if degradation is included deforestation would occur in cells with higher carbon density so the inclusion of degradation will lead to conservative estimates of deforestation. DNV deems that no change is required – OK. c) The MED was revised. Now it is clear that the regeneration and reforestation rates are applied once the transition matrix of deforestation and degradation of a year is prepared. It is clear now that it is a "correction" factor which will lead to lower estimates of deforestation and which will not update the baseline maps – OK. e) The MED has been updated. Now it clearly specifies that the deforestation and degradation has to be estimated for the areas with ANR, areas with harvesting and areas without harvesting or ANR. However, please note that this clipping should be done after step 5 as in step 6 we are already working with transition matrix. Once we have the transition matrix for the three areas, as part of Step 6 we would to apply the regeneration rate to each of the areas in order to pass from gross to net DEF/DEG – **NOT OK**. **Assessment #3** (MED Version 07.3) e) The MED has been revised. Now the procedure for developing the transition matrix is clear- **OK**. **CAR8 is closed.**
CAR9	**Element of MED** Project Emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.2.4 **Corrective Action Request**	**Response #1** (MED Version 06) TODO What do you think, BDS?	**Assessment #1** (MED Version 06) a) The issue we are pointing out is a common methodological issue that has been addressed in the most recent versions of CDM methodologies. You will find that $E_{biomassloss}$ has been removed from the methodological tools. I assume that you will conduct an inventory in t=0, which is common as you would need to in any case conduct inventories to determine carbon densities of different

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	a) EQ80 serves to estimate the emissions from the loss of existing woody biomass due to site-preparation i.e. $E_{biomassLoss,ANR}(t)$. This represents the emissions due to the removal of biomass from site preparation. However, considering this source of emissions in the context of an ANR activity and applying the equations of AR-ACM0001 Version 3 at the same time would constitute a double counting. The reason is that the changes in carbon stocks determined through EQ75 already factors any decrease in carbon stocks, so it would not be necessary to include parameter $E_{biomassLoss,ANR}(t)$in order to account for these emissions. The changes in carbon stocks are determined through the changes in the stock density at time t2 and t1 [Mg C ha-1]. In the first verification it is expected that $C(t_1,i)$ will represent the carbon stocks before the removal of biomass and that $C(t_2,i)$ will represent the carbon stocks after the removal of biomass, hence, the difference of both carbon densities would already factor in any decrease in carbon stocks due to the removal of vegetation. The approach proposed would make sense if $C(t_1,i)$ represents the carbon stocks just after site preparation (i.e. in A/R activities this is usually zero); however, it is expected that the first inventory would occur before doing any kind of treatment. Therefore, DNV deems that the emission source $E_{biomassLoss,ANR}(t)$ shall be removed, and that it shall be clearly stated in the MED that $C(t_1,i)$ for the first verification shall be the initial carbon stocks.	**Response #2** (MED Version 07) We removed $E_{biomassloss}$. The only source that is includes is emissions from fire. We added the following in towards the end of section 7.2.4.3. To ensure that any loss of biomass that occurs as part of ANR activities such as from site preparation is duly accounted for, $C(t_1,i)$ is set equal to the carbon stock density of stratum i at the beginning of the crediing period in the first verification of ANR area in stratum i in [EQ74] and [EQ75]. **Response #3** (MED Version 09) Discussed on phone. The text indicated in Response #2 was revised as below: To ensure that any loss of biomass that occurs as part of ANR activities such as from site preparation is duly accounted for, in the first verification C(t_1,i) are the carbon stocks at the starting date of the crediting period and C(t_2,i) are the carbon stocks at the time of verification in stratum i in [[EQ73] and [EQ74].	stratum, etc. Therefore, you would have the initial carbon which is the reference value $C_{t=0}$. Now if in t=1 you remove existing vegetation as part of the site preparation, it is correct that you would have emissions, however, if you conduct a monitoring in t=2 as required by the methodology, you would obtain $C_{t=2}$ which will include on the one hand the growth of biomass during that year and on the other the losses due to the site preparation. So if we estimate the changes in carbon stocks as the difference between $C_{t=0}$ and $C_{t=2}$, we would already be factoring in carbon losses. $$\Delta C(t,i) = area_{projectAreaWithANR,projectScenario}(t,i) \cdot \frac{C(t_2,i) - C(t_1,i)}{t_2 - t_1}$$ Accounting for $E_{biomassloss}$ here would actually constitute double counting. A different thing is if t=0 is after you have done the site preparation so your Ct=0 has been estimate after the biomass has been removed. In this case it would make sense to estimate $E_{biomassloss}$ and account for this. Yet, I believe that this will not be common. If you agree with my rationale I would suggest deleting $E_{biomassloss}$ in order to solve the possible double counting (and simplifying the MED) and stating that in the first verification $C(t_1,i)$ has to be equal to the carbon stocks at the beginning of the crediting period. **Assessment #2** (MED Version 07) The MED has been updated. The factor Ebiomassloss has been removed from the equations. However, what it should be specified is that in the first verification $C(t_1,i)$ are the carbon stocks at the starting date of the crediting period and $C(t_2,i)$ are the carbon stocks at the time of verification – **NOT OK**. **Assessment #3**(MED Version 09) The MED has been revised. Now it states clearly that in the first verification the changes in carbon stocks will be calculated as the stock difference between the carbon stocks at the time of the starting of the crediting period and the time of verification - OK. **CAR9 is closed.**
CAR10	**Element of MED** Project Emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.2.6	**Response #1** (MED Version 06) a) We have added the assumption that communities are collecting and consuming biomass fuel to the general quantification section in 8.2.5.2 b) We have revised the equation by removing the provision to expand the biomass.	**Assessment #1** (MED Version 06) The introduction of improved cookstoves would reduce emissions from two different sources: • Non-CO2 emissions due to burning of woodfuel. • CO2 emissions due to the losses of carbon stocks linked to unsustainable harvesting.

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	Corrective Action Request The MED includes procedures in order to estimate the net GHG emission reductions form cookstove and fuel efficiency (CFE) activities. The equation for its quantification is a variation of the one provided in AMS-II.G. The following issues were identified: **a)** In order to avoid entering in LULUCF sector activities, the CDM small scale WG adopted a hypothetical baseline in AMS-II.G which assumes that households would use a combination of fossil fuels for meeting their heat needs. As a result, the rationale behind the equation is to estimate the amount of energy from non-renewal biomass that would be consumed by the HH, and then multiply it by an emission factor equivalent to the mix of fossil-fuels which would be used instead in the hypothetical baseline. Well, the MED proponent proposes a different approach which consists in determining the emission reductions from CFE activities but considering as baseline not the hypothetical baseline described in AMS-III.G but a baseline which consists in the reduction of carbon stocks caused by woodfuel collection activities for heating purposes, i.e. degradation caused by the project activity. Hence, the MED shall specify this clearly and this shall be considered in order to estimate the emission reductions from these activities. **b)** The proposed equation EQ82 includes a BEF which did not exist in AMS-II.G in order to expand the consumed roundwood to aboveground biomass which reflects better the removal of carbon stocks caused by wood collection activities. However, BEF is an expansion factor applicable to commercial timber, while the woodfuel consumed by the households may not be commercial timber but large branches, small branches or even twigs. Therefore, the adopted. **c)** The BEF serves to expand the roundwood consumed by the households to the aboveground biomass equivalent. This is theoretically the aboveground biomass removed from the forest in order to supply the energy needs. However, it does not make sense to	c) We removed the reference to BEF and quantified actual amount is being used in the current version. d) The methodology specifically suggests that both project area and leakage belts are under the threat of deforestation and/or degradation. When such threat is established, it would not be prudent to assume that the extracted resources from these areas are renewable unless certain wood lots are managed specifically for producing the biomass fuel. At high level, it appears that qualified REDD project area is not able to produce the renewable biomass on the long run. Paragraph 16 – 18 of AMS II.G can be used to assess if the biomass coming from a REDD is renewable or not. We have stated, "Fraction of "non-renewable" woody biomass being used saved by the project activity. 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) and shall be based on difference between wood biomass produced and extracted from the project area" in the description of this parameter in response to your concern. In addition, under the parameter section, we have provided reference Paragraph 16 – 18 of AMS II.G. Energy efficiency measures in thermal applications of non-renewable biomass (Version 5.0). Additionally, we have also added in the monitoring parameter the default factor for fNRB. [monitoring parameter added] **Response #2** This is nice. Thanks. We liked the idea of separating non-CO2 and CO2 EFs. See the revised version directly in the meth. Also the parameter sections were updated.	Since the former is a non-CO2 emission, there would be no chance of double counting so even if degradation is accounted for, considering these emissions reductions would not represent any double accounting so a project should be able in any case to account for emissions reductions linked to the reduction of non-CO2 emissions (c.f. Gold Standard MED Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011). The latter is directly linked to the carbon stocks within or out of the project area so there is a risk of double accounting. Hence, it can only be accounted if degradation is not accounted for. However, woodfuel collection could eventually come from deforestation activities, and in fact according to the provisions of the MED regarding ex-ante estimates, 5% of the emissions coming from woodfuel collection could come from deforestation activities. Hence, there the MED should ensure that no double accounting occurs through the application of a factor such as $proportion_{DG,fuel}$. The factor of non-renewable biomass can be calculated as the deficit of biomass growth (c.f. Gold Standard MED Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011 fNRB = (Biomass extracted – Biomass growth) / Biomass extracted) which causes a decrease in carbon stocks. In the case degradation is not accounted, according to the MED regeneration would not be accounted for in the baseline or in the project scenario. Since the regeneration in the project scenario is expected to be higher than that of the baseline scenario, accounting for only the wood extracted is conservative, hence, it can be assumed that the fraction of non-renewable biomass is 1. Following AMS-II.G leakage could be accounted for through a leakage discount factor of 0.95. Additionally, EFs can include a combination of emission factors from fuel production, transport, and use. CO2 and non-CO2 emissions factors for charcoal may be estimated from project specific monitoring or alternatively by researching a conservative wood to charcoal production ratio (from IPCC, credible published literature, project-relevant measurement reports, or project-specific monitoring) and multiplying this value by the pertinent EF for wood (C.f. Gold Standard MED Technologies and Practices to Displace Decentralized Thermal Energy Consumption - 11/04/2011). This is to ensure that charcoal emissions are calculated correctly. **Assessment #2** (MED Version 07) The MED has been revised. DNV deems that the GHG accounting provided in the revised version gives the real emissions and changes in carbon stocks that would be saved, which is more accurate than the previous version based on AMS-II.G. which gives emission reductions considering an hypothetical baseline - OK, **CAR10 is closed.**

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	multiply by an emission factor also the components which are removed from the forest but are not consumed by the households. **d)** As explained above, EQ82 intends to estimate the emissions caused by the removal of biomass due to woodfuel collection activities. In order to estimate the net emissions the growth of the stands from where this biomass is extracted from shall be factored in (as it happened in the case degradation would have been accounted for) in order to estimate the net degradation not only the gross degradation. This is done through the fNRB which establishes the percentage of consumed biomass that is non-renewable. Therefore, the MED shall provide clearly that the fNRB shall be calculated out from the deficit of woodfuel within the project area which is the difference of the biomass produced and the biomass extracted from the project area for woodfuel.		
CAR11	**Element of MED** Project Emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.2.7 **Corrective Action Request** **a)** EQ85 serves to estimate the emissions from timber harvesting i.e. $E_{harvest,timber}(t)$. This represents the emissions due to harvesting operations. However, if the carbon stocks are going to be monitored in the project scenario this parameter is not necessary for ex-post purposes as any removal of vegetation would already be factored in the forest inventory. Furthermore, this is true for ex-ante purposes as the carbon stocks will be modeled considering the harvesting regime, so the modeled carbon stocks would already considered these emissions.	**Response #1** (MED Version 06) In most cases, timber harvesting represents forest degradation (i.e., forest remaining forest). Therefore, if only credits from avoided deforestation are claimed, this decrease in forest biomass would go undetected. Therefore, it is necessary to include here, in our opinion. In addition, the harvested timber must also be known to calculate carbon in long lived wood products correctly.	**Assessment #1** (MED Version 06) a) Regarding the emissions from harvesting. If you combine EQ83, EQ116, EQ118 and EQ120, the carbon balance in the harvesting areas in the project scenario would be as follows: $= -E_{harvest,timber}(t) + \frac{44}{12} \cdot C_{LWP,project}(t) + \frac{44}{12} \sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i) \cdot C_{harvest}(t,i) \cdot u_{inventory,harvest}(i)$ The first two terms would provide the net emissions from timber harvesting (tCO2/year) in the project scenario; however, the second term provides the existing carbon stocks in year t in the harvest areas (tCO2). Therefore, both terms are not comparable as the former refers to tCO2/year and the second to tCO2. In view of this and the restriction that you included based on the LTAC (i.e. EQ120) my understanding is that what you really want to do is to: a) Account for the carbon stocks in the LWP; b) account for the changes in carbon stocks in the project scenario considering somehow the emissions from harvesting. Regarding the latter, this would be accounted by monitoring the changes in carbon stocks ($\Delta C_{harvest}(t)$ instead of $C_{harvest}(t,i)$) and the harvesting emissions would be accounted by ensuring that no GHG benefits are above the LTAC. Considering also the first term of the equation, would involve double or even triple accounting as harvesting emissions would be factored through, 1) the first term of the equation; 2) the forest inventory; 3) the restriction of the LTAC as this is a way for "accounting" for harvesting emissions.

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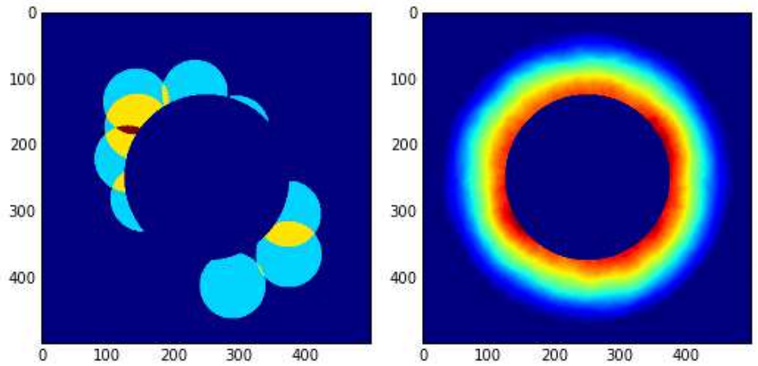
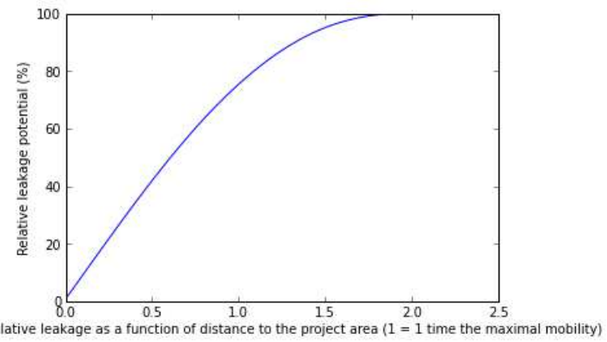
			A way to solve this would be to delete the parameter emissions from degradation and to change the following equations: **ΔGHG from avoided deforestation from areas under harvest** **In case:** $\sum_{t=1}^{Crediting\ Period}\left(\frac{44}{12}\sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i)\cdot C_{harvest}(t,i).u_{inventory\ ,harvest}(i)\right) \geq \sum_{t=1}^{CreditingPeriod}\left(\frac{44}{12}\sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i)\cdot LTAC_{Harvest}\right)$ ⓾ $= 0$ **In case the inequality above does not hold, (10) shall be:** ⓾ $= \Delta C_{WithHarvest,project}(t) - \sum_{i=1}^{nrFNFtransitions}\sum_{tt=1}^{t} u_{classification}\cdot u_{transition}(i)\cdot \Delta area_{projectAreaWithHarvest,baselineScenario}(t,i)\cdot\left(EF_{AGL}(i)+EF_{AGD}(i,t-tt)+EF_{BG}(i,t-tt)+EF_{SOM}(\right.$ In this case $\Delta C_{WithHarvest,project}(t)$ would be estimated following 8.2.4.3. Please note that as per EQ120 you are required in any case to conduct an inventory in order to monitor the carbon stocks in addition to the initial forest inventory that you would have to conduct as part of the management plan, so the above method seems feasible. Furthermore, based on our experience in IFM and based on § 4.3.3 of the AFOLU requirements, $E_{harvest,fossil-fuel}(t)$ is negligible. Considering that emissions from deforestation and degradation will be much higher than those associate to timber harvesting, we would suggest deleting these for the sake of simplicity.
		Response #2 (MED Version 07) Thanks. Removed the Etimberharvest and other emissions. Also considered eliminating the fossil fuel. I also noticed unit problem in LTAC which is now corrected. Revised the equation to mimic the proposal.	**Assessment #2** (MED Version 07) I just identified a number of issues: a) It is not clear why degradation is not included in EQ114 and EQ115 of the reviewed version of the MED. I understand that it is included in EQ107 but this is not fully correct as the GHG accounting in the harvested areas should be isolated also for degradation. Our understanding is that EQ107 should refer to $+\Delta\text{area}_{\text{projectAreaEAH,projectScenario}}(\text{t,i})$ $-\Delta\text{area}_{\text{projectAreaEAH,baselineScenario}}(\text{t,i})$ $+\Delta area_{projectAreaWithoutANR,projectScenario}(t,i)$ $-\Delta area_{projectAreaWithoutANR,baselineScenario}(t,i)$. instead of

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
			b) Thinking it better, I am not sure the meaning of EQ114. The idea of the LTAC is to cap the GHG removals generated in order to avoid excess of issuance linked to peaks of carbon stocks. But this is related to the carbon stocks in the project scenario in the harvested areas, not to the baseline deforestation. Even if a project is above the LTAC in the project scenario, it should be allowed to generated emission reductions from deforestation or degradation so we think that EQ114 is not correct. Therefore, EQ114 should be: **If** $$\sum_{t=1}^{Crediting\ Period}\left(\frac{44}{12}\sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i)\cdot C_{harvest}(t,i).u_{inventory,harvest}(i)\right) \geq \sum_{t=1}^{CreditingPeriod}\left(\frac{44}{12}\sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i)\cdot LTAC_{Harvest}\right)$$ ❿ $$= -\sum_{i=1}^{nrFNFtransitions}\sum_{tt=1}^{t}\left(\begin{matrix}u_{classification}\cdot u_{transition}(i)\\ \cdot \Delta area_{projectAreaWithHarvest,baselineScenario}(t,i)\\ \cdot\left(EF_{AGL}(i)+EF_{AGD}(i,t-tt)+EF_{BG}(i,t-tt)+EF_{SOM}(i,t-tt)\right)\end{matrix}\right)$$ $$-\sum_{i=1}^{nrStrataTransitions}\sum_{tt=1}^{t}\left(\begin{matrix}u_{stratification}\cdot u_{transition}(i)\\ \cdot \Delta area_{projectAreaWithHarvest,baselineScenario}(t,i)\\ \cdot\left(EF_{AGL}(i)+EF_{AGD}(i,t-tt)+EF_{BG}(i,t-tt)+EF_{SOM}(i,t-tt)\right)\end{matrix}\right)$$ This is only true if LTAC ≥ $C_{harvest}(t_0,i)$ (carbon stocks at the starting date of the crediting period). If the inequality above does not hold (please note that there was a negative sign missing in the previous equation): ❿ $$= -\frac{44}{12}\sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i)\cdot\left(\frac{C_{harvest}(t_2,i)-C_{harvest}(t_1,i)}{t_2-t_1}\right)\cdot u_{inventory,harvest}(i)$$ $$-\sum_{i=1}^{nrFNFtransitions}\sum_{tt=1}^{t}\left(\begin{matrix}u_{classification}\cdot u_{transition}(i)\\ \cdot \Delta area_{projectAreaWithANR,baselineScenario}(t,i)\\ \cdot\left(EF_{AGL}(i)+EF_{AGD}(i,t-tt)+EF_{BG}(i,t-tt)+EF_{SOM}(i,t-tt)\right)\end{matrix}\right)$$ $$-\sum_{i=1}^{nrStrataTransitions}\sum_{tt=1}^{t}\left(\begin{matrix}u_{stratification}\cdot u_{transition}(i)\\ \cdot \Delta area_{projectAreaWitANR,baselineScenario}(t,i)\\ \cdot\left(EF_{AGL}(i)+EF_{AGD}(i,t-tt)+EF_{BG}(i,t-tt)+EF_{SOM}(i,t-tt)\right)\end{matrix}\right)$$ Please review it and confirm whether it is OK.
		Response #3 (MED Version 09) a) Eq. 108 (previous 107) is updated/ **Δ GHG from avoided degradation:** ❸ $= \sum_{i=1}^{nrStrataTransitions}\sum_{tt=1}^{t} u_{stratification}\cdot u_{transition}(i)$	**Assessment #3** (MED Version 09) a) The MED has been revised. Parameter notation has been corrected in equation 108– OK. b) The MED has been revised. i) DNV agrees generally with EQ80 for modeling the real carbon-stock changes either in the baseline or in the project scenario. Now I understand what was the rationale of the first version of the MED, I.E. the

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		$\cdot \left(\begin{matrix} +\Delta area_{projectAreaEAH,projectScenario}(t,i) \\ -\Delta area_{projectAreaEAH,baselineScenario}(t,i) \end{matrix} \right)$ $\cdot \left(EF_{AGL}(i) + EF_{AGD}(i,t-tt) + EF_{BG}(i,t-tt) + EF_{SOM}(i,t-tt) \right)$ b) Procedure revised. Equation that appeared at 115 was moved to section 8.2.6.2. The annual Cstock change (tco2e) from harvest areas are estimated using Eq. 80. $\Delta C_{areaWithHarvest}(t)$ $= \sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i) \cdot \left(\frac{C_{harvest}(t_2,i) - C_{harvest}(t_1,i)}{t_2 - t_1} \right)$ $\cdot u_{inventory\ ,harvest}(i)$ $- \sum_{i=1}^{nrFNFtransitions} \sum_{tt=1}^{t} \left(\begin{matrix} u_{classification} \cdot u_{transition}(i) \\ \cdot \Delta area_{projectAreaWithHarvet,baselineScenario}(t,i) \\ \cdot \left(EF_{AGL}(i) + EF_{AGD}(i,t-tt) + EF_{BG}(i,t-tt) + EF_{SOM}(i,t-tt) \right) \end{matrix} \right)$ $- \sum_{i=1}^{nrStrataTransitions} \sum_{tt=1}^{t} \left(\begin{matrix} u_{stratification} \cdot u_{transition}(i) \\ \cdot \Delta area_{projectAreaWitHarvest,baselineScenario}(t,i) \\ \cdot \left(EF_{AGL}(i) + EF_{AGD}(i,t-tt) + EF_{BG}(i,t-tt) + EF_{SOM}(i,t-tt) \right) \end{matrix} \right)$ Addtionally, following note was added: $C_{harvest}(t_1,i)$ are the carbon stocks at the starting date of the crediting period and $C_{harvest}(t_2,i)$ are the carbon stocks at the time of verification in stratum i . $u_{inventory,harvest}\ (i)$ must be esitmatd using procedure described in 8.2.4. Eq. 115 and 116 were revsied as below: **Δ GHG from avoided deforestation and degradation from areas under harvest** **In case:** $\sum_{i}^{t} \Delta C_{areaWithHarvest}(i) \geq \sum_{i=1}^{nrStrata} area_{projectAreaWithHarvest,projectScenario}(t,i) \cdot LTAC_{Harvest}$ ⓾ $= \left(\sum_{i=1}^{nrStrata} \left(area_{projectAreaWithHarvest,projectScenario}(t,i) \cdot LTAC_{Harvest} \right) - \sum_{i}^{t} \Delta C_{areaWithHarvest}(i) \right)$ **In case the inequality above does not hold, (10) shall be:** ⓾ $= \Delta C_{areaWithHarvest}(t)$ **Response #4** (MED Version 10)	project is allowed to generate as maximum as LTAC *AreaHarevestingArea.. However, I don't understand why if the first inequality holds the result should be: ⓾ $= \left(\sum_{i=1}^{nrStrata} \left(\text{area}_{projectAreaWithHarvest,projectScenario}(t,i) \cdot \text{LTAC}_{Harvest} \right) - \sum_{i}^{t} \Delta C_{areaWithHarvest}(i) \right)$ Our understanding is that it should be zero instead. Please note that one year the carbon stocks in the harvesting area might be above the LTAC and the following verification it might be below the LTAC. This increase and reduction would be factored in the carbon stock changes in the project scenario either in the cumulative $\sum_{i}^{t} \Delta C_{areaWithHarvest}(i)$ and $\Delta C_{areaWithHarvest}(t)$ so it seems thatthere would be no need for the above correction ii) I have seen in the MED that it seems that ANR areas and harvesting areas are not fixed at validation, so additional ANR might be added in time being the same for harvesting areas. Besides I am not sure what $\text{area}_{projectAreaWithHarvest,projectScenario}(t,i)$means for you. Is it related to the area actually harvested r the area of the fixed harvesting area, I mean is the following constant? (at least till baseline renewal) $\sum_{i=1}^{nrStrata} \left(\text{area}_{projectAreaWithHarvest,projectScenario}(t,i) \right)$ - **NOT OK.** **Assessment #4** (MED Version 10) The MED has been revised. DNV deems that the equations provided are now correct

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
		i. You are right now correct is needed. If the equality holds true, the credits will be 0 instead. The meth has been revised to show this. ii. The procedure has been revised. For added instances, this is set equal to the carbon stock at the time of instance addition time of added instances in the first verification. In successive verification, C(t=1,i) is set to the C-stock at preceding verification See the following revised text: In the first verification, $C_{harvest}(t_1, i)$ are the carbon stocks at the starting date of the crediting period and $C_{harvest}(t_2, i)$ are the carbon stocks at the time of verification in stratum i . In the successive verifications, $C_{harvest}(t_1, i)$ are the carbon stocks at the preceding verification event and $C_{harvest}(t_2, i)$ are the carbon stocks at the time of verification in stratum i . Furthermore, when a new instance is included in the project area, in the first verification of the added instance, $C_{harvest}(t_1, i)$are the carbon stock at the time of that instance addition. $u_{inventory,harvest}(i)$ must be estimated using procedure described in8.2.4..	and will enable to the correct estimation of emission reductions - OK. **CAR11 is closed.**
CAR12	**Element of MED** Leakage emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.3.2.2 **Corrective Action Request** **a)** The MED, c.f. section 8.3.2.2, provides procedures in order to define the size and demarcation of the leakage belts. This is done through spatial analysis by producing a cost-distance map and selecting the area in the cost-distance map that is accessible from the boundary of the project area within the maximal time determined through social assessments. DNV deems that defining the leakage belt as the area that is accessible from the boundary is not correct as agents which may act in the project area may be located far from the project area, as far as the maximal time from the project boundary, but which can access at the same even farer from the project area. Hence, leakage could occur as much as twice the maximal time out from the boundary of the project area. DNV deems that the MED shall clearly define that the area that is accessible shall be twice the maximal time determined through social	**Response #1** (MED Version 06) We do not agree that a general factor 2 of the maximal time is appropriate at the methodology level. As you indicate, this is really case-specific; We think it is much more appropriate that this is looked at on a case-by-case basis at the PD-level and not have too much burden inside of the methodology.	**Assessment #1** (MED Version 06) Well, I am not so sure that will be project specific. It is expected that areas which are closer to DEF/DEG drivers have more chances to be degraded or deforested than those areas that are farer. Moreover, DEF/DEG drivers will be generally located closed to the project boundaries, not within the project boundaries. Therefore, DEF/DEG drivers will access to areas that go beyond to the maximal time from the project boundary. Please see the below example which I think it is self-explanatory. **Maximum time** In cases where we have almost all DEF/DEG drivers that could act in the project area very close to the project limits, your reasoning would be correct. So we are open to further discussion on this issue – **NOT OK**.

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	assessments. Otherwise, in certain cases this would cause certain bias, specially were most of the agents are located at exactly the maximal time from the project boundary.	**Response #2** (MED Version 07) After looking at the sketch, the auditor is right that the boundary of the leakage area should be greater than 1*x. However, the influence of the leakage area goes down as the distance to the project area increases and is 0 if this distance is 2*x. We did a little simulation assuming a circular project area and circular spheres of influence around villages in the leakage belts. If one assumes that the potential for leakage from a certain village is proportional to the area of overlap between the sphere of influence of a village and the project area, one gets the figure on the left for a few villages and the figure on the right for a large number of villages:  It is then possible to graph the percentage of leakage covered by assuming an increasingly wider sphere around the project area:  At a distance of 1.2 x the maximum mobility, 85% of the leakage is included. At a distance of 1.5 x the mobility, 95% of the leakage is included. We propose to use a factor of 1.5 x the maximum mobility. The python script to generate this analysis can be made available to the validator. This change is marked with "CAR 12#2" in a comment	**Assessment #2** (MED Version 07) The MED has been revised and it now includes a factor of 1.5. DNV deems that this would lead to conservative estimations as1.5 holds true if the project area is circular. If it is not circular a factor of 1.5 would go beyond the accessible area of the agent - OK. **CAR12 is closed**
CAR13	**Element of MED** Leakage emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)**	**Response #1** (MED Version 06) a) Section 8.3.4.2.2 Eq 105 (now EQ104) has been corrected.	**Assessment #1** (MED Version 06) a) The MED has been revised. Now the applicable equation of section 8.3.4.2.2 is in line with equation 5.1 of Chapter 5 volume 4 of IPCC. Now it includes the factor 10-6 as the EF is kg and it includes the GWP. However, the factor 16/12 is not applicable in this case. Apologies for that. – **NOT OK**.

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	MED Version 05, Section 8.3.4.2.2 **Corrective Action Request** **a)** EQ105 is not consistent with equation 5.1 of Chapter 4 Volume 4 of 2006 IPCC GPG. **b)** EQ105 includes parameter $\Delta A_{rice}(t)$, i.e. annual increase in harvested area of rice due to leakage prevention measures during year t [ha yr-1]). According to equation 5.1 of Chapter 4 Volume 4 of 2006 IPCC GPG this parameter should not be the annual increase in harvested area but the annual harvested area due to leakage prevention measures. It is incorrect to consider just the increase.	b) Section 8.3.4.2.2 The equation has been modified from the original IPCC Equation 5.1 to reflect the fact that a project should only be held responsible for the change in emissions due to agricultural intensification and not for the full amount of emissions, part of which would have happened without the project. **Response #2** (MED Version 07) a) Factor 16/12 is removed b) This factor was changed in the legend to "Total and cumulative increase in harvested area of rice due to leakage prevention measures since the start of the project and until year t.". Change marked in the methodology as CAR 13b#2.	b) The methane emissions from rice cultivation of new cultivated areas occur annually, not only in the year of implementation of the cultivated areas. So for instance, if one year you open 10 ha and the second year you open new 10 ha, the emissions of the second year would be those of 20 ha, not of the last 10 ha added – **NOT OK**. **Assessment #2** (MED Version 07) a) The MED has been revised. Now the applicable equation of section 8.3.4.2.2 is in line with equation 5.1 of Chapter 5 volume 4 of IPCC. Now it includes the factor 10-6 as the EF is kg and it includes the GWP–**OK.** b) The MED has been revised. Now it refers to the total and accumulative increased in harvested areas of rice due to leakage prevention measures since the start of the project until year t – **OK.** **CAR13 is closed.**
CAR14	**Element of MED** Leakage emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.3.4.3.2 **Corrective Action Request** a) Section 8.3.4.3.2 states that emissions due to increased livestock rates shall be calculated as the sum of variable $LK_{FFL,t}$ within AR-AM0006 and $LK_{Displacement,t}$ within the CDM tool is equivalent to $\Delta E_{livestock}(t)$ within this methodology. However, $LK_{Displacement,t}$ includes already emissions from the changes in carbon stocks which are already considered by other elements of the MED. The MED shall clearly indicate that only those parameters of $LK_{Displacement,t}$ related to the quantification of non-CO2 emissions shall be considered.	**Response #1** (MED Version 06) a) Section 8.3.4.3.2 has been revised to show that the deforestation component of leakage (representing a carbon stock change) is excluded from the accounting of emissions due to increased livestock rates. **Response #2** (MED Version 07) Understood – this sentence was changed to: «The sum of variable $LK_{FFL,t}$ within the CDM methodology AR-AM0006 (Version 02) and the variable $LK_{Displacement,t}$ (minus $LK_{Deforestation,t}$ and $LK_{N2O-Displacement,t}$ which are already accounted in the carbon stock change assessment) within the CDM A/R tool is equivalent to $\Delta E_{livestock}(t)$ within this methodology.» **Response #3** (MED Version 07.3) Clarified during phone call. Some sections related to the intensification of agriculture are still relevant as their intention is to avoid unintentional negative consequences	**Assessment #1** (MED Version 06) a) The MED has been revised. Now tit states clearly that emissions due to deforestation shall not be considered as part of the leakage emissions. Also please note that $LK_{Displacement,t}$ includes too emissions due to the use of fertilizers, which is already accounted in another side of the MED and which is negligible according to the VCS AFOLU requirements §4.3.3. In view of this we would suggest deleting also the section relative to fertilizer application. Apologies if I did not raise this before, but this is a clear area for simplifying the methodology and be in line with VCS requirements – **NOT OK**. **Assessment #2** (MED Version 07) I just realized that the mitigation measure of establishing livestock could occur in areas out of the leakage belt so any deforestation or degradation would not be factored in through the monitoring of the leakage area. If this mitigation measure occurs out of the leakage belt, $LK_{Deforestation,t}$ shall be accounted – **NOT OK**. Please also note that the MED still makes reference in various areas to emissions due to intensification of agriculture which would have to be deleted in accordance to section 5.1 – **NOT OK**. **Assessment #3** (MED Version 07.3) Yes, you are correct. These criteria will ensure that the any emissions are fully monitored by the monitoring system - OK.

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		such as clearing forest land in the leakage areas to create agricultural projects. However, references to emissions from fertilizer were deleted.	**CAR14 is closed**
CAR15	**Element of MED** Quantification of Net GHG Emission Reductions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.4.1.1 **Corrective Action Request** a) Equation 106 which serves to determine the total carbon stocks in long-lived wood products include parameter ρ_{wood} which is used in order to convert commercial volume to t d.m. Since the basic density is highly variable among different commercial species, EQ106 shall show clearly that ρ_{wood} is specific to the harvested tree species (i.e. $\rho_{wood,j}$).	**Response #1** (MED Version 06) We have revised this Eq. to include species specific wood density values. We think that it would be very difficult and costly to get estimate of wood density for every species. We are aware of the fact that only density specific to harvested trees are to be used, but due to lack of data, IPCC has not covered the density values of all the species. This is further complicated by unavailability of scientific naming of the many local species. In such case, an average density is best conservative that can be used. However, we provided option to use species specific or species group specific density in the description of parameter rho_wood,j.	**Assessment #1** (MED Version 06) a) Please note that there are currently many databases which enable to estimate the basic density (or Wood Specific Gravity) of many species or for a group-of-species in the tropical region with no problem. These are far more complete than the IPCC C.f: -Jérôme Chave, Helene C. Muller-Landau, Timothy R. Baker, Tomás A. Easdale, Hans ter Steege, and Campbell O. Webb. 2006. Regional and phylogenetic variation of wood density across 2456 neotropical tree species. Ecological Applications 16:2356–2367. -Zanne, A.E., Lopez-Gonzalez, G.*, Coomes, D.A., Ilic, J., Jansen, S., Lewis, S.L., Miller, R.B., Swenson, N.G., Wiemann, M.C., and Chave, J. 2009. Global wood density database. Dryad. Identifier: http://hdl.handle.net/10255/dryad.235. -Ilic J., Boland D., McDonald M., Downes G. and Blakemore P. (2000) Wood Density Phase 1. National Carbon Accounting System, Technical Report No. 18. Australian Greenhouse Office, Canberra. The MED has been updated consequently - OK. **CAR15 is closed.**
CAR16	**Element of MED** Data and Parameters **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 9.1 and 9.2 **Corrective Action Request** **a)** GWP_{CH4} is 21 according to the MED. However, this was the value for the first commitment period of the KP. A value of 25 has been approved for the second commitment period which is more accurate. **b)** Parameter $CFW_{allowed}$ is missing in Section 9.2.4. **c)** Parameter $DFW_{allowed}$ is listed in section 9.2.4. However, this parameter should be deleted as it does not appear in section 8.2, where it is stated that demand of DFW is non-elastic so a 0-100% leakage shall be considered. **d)** Notations of parameters $CT_{allowed}(h,j,ty,t)$ and $DT_{allowed}(h,j,ty,t)$ provided in section 9.2.4 are incorrect. **e)** $DT_{project}$ should be deleted as this parameter	**Response #1** (MED Version 06) a) Value changed to 25 throughout b) It is deliberate that the methodology does not contain a CFW_allowed parameter. This methodology simply assumes that commercial fuel wood extraction must not continue in a REDD project. c) Regarding leakage, the DFW_allowed is used in estimating project effectiveness as shown in Eq. 51. Therefore this parameter is relevant. d) These two parameters were corrected. e) Deleted. Thanks for noting. f) These days, people use standard stoves which often have warranties by industries for their quality for the life time. When these stoves are replaced at the end of their lives the manufactures are assuring customers for the efficiency. The annual test of efficiency is mostly relevant in situation where cook-stoves are locally manufactured and there is no one to back the quality or warranty for the products. Therefore, we have included three different provisions with respect to monitoring frequency for this parameter based on whether the stoves were produced by a recognized producer and warranty is provided. g) We changed this parameter to OMo(i). h) These parameters were added in their appropriate locations in these sections **Response #2** (MED Version 07) d. Parameter monitoring frequency corrected . f. Reference to AMS.II.G made: If the stoves are locally manufactured or the manufacturer does not provide any warranty or the manufacturer of the stove is no longer in the business, then the efficiency must be monitored	**Assessment #1** (MED Version 06) a) The MED has been updated – OK b) Yes, it is correct. The MED is not required to be updated – OK. c) Yes, it is correct. The MED is not required to be updated – OK. d) Parameters shall be $DT_{project}(h,j,ty,t)$ and $CT_{project}(h,j,ty,t)$ according to their names. These parameters are obtained ex-post so their monitoring frequency shall be annually - **NOT OK**. e) The MED has been revised – OK f) Please refer in option b to the specific procedures of version 5 of AMS-II.G – NOT OK. g) The name of the parameter shall be "Plant-derived organic matter of LULC class or forest stratum i in pool o. [Mg DM ha^{-1}] – **NOT OK** h) Applicable parameters were included in the MED – OK. **Assessment #2** (MED Version 07) d) The parameter notation and frequency has been corrected – OK. f) The new information referring to the procedures provided in AMS-II.G. is provided – OK. g) The name of the parameter has been corrected. Now it is written "Plant-derived

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	is already provided in line 2434. **f)** The monitoring frequency of parameter η_{new} is at least once every baseline update. However, according to version 5 of AMS-II.G "For project activities using the Water Boiling Test protocol (i.e. paragraph 12, Option 2), monitoring shall consist of determining the efficiency of all operating devices or a representative sample thereof, annually. For the purpose of calculating emissions reductions, the ex post monitored value of the efficiency of the operating devices (new y η ,) shall be used". Hence, the frequency shall be annual. **g)** Section 9.2.5 provides parameter $OM(i)$ which is the Average plant biomass stock density in forest stratum or LULC class i. However, this parameter is not really relevant for the NER estimations as each carbon pool is applied in equations of section 8.4 separately. Parameter $OM_o(i)$ shall be included instead. **h)** The following parameters are missing in section 9.1 and 9.2: -$u_{classification}$ -$u_{transition}(i)$ -$u_{stratification}$ -$\Delta area_{projectAreaWithoutHarvest,baselineSc}(t,i)$ -EF_{NRWB} -$area_{projectAreaWithHarvest,projectSce}(t,i)$ -$\Delta area_{projectAreaWithHarvest,baselineSc}(t,i)$ -$f_{harvest}(t,i)$ -$f_{damage}(t,i)$	annually using the water boiling test (WBT) protocol carried out in accordance with national standards (if available) or international standards or guidelines specified in Approved CDM Methodology – AMS.II.G. Energy efficiency measures in thermal applicants of non-renewable biomass (Version 5). Biennial monitoring (i.e. monitoring once every two years) may be chosen, if the project proponents are able to demonstrate that the efficiency of the cook stove does not drop significantly as compared to the initial efficiency of the new device, over a time period of two years of typical usage g. Name changed as suggested. **Response #3** (MED Version 10) Following parameters were added. • $size_{referenceForest}$ • EF_{forest} • $leakage_{unconstrained}(d)$ • $CE_{inventory,ANR(t,i)}$ • $RFRGrate(CS_1 \rightarrow CS_2)$ The following parameters were removed: -$\boldsymbol{area_{biomassLoss,ANR}(t,i)}$ -$\Delta area_{projectAreaWithoutHarvest,baselineScenario}(t,i)$ -P: No longer required as fire emissions are not accounted. -E Regarding the parameters: - CFWallowed: is not applicable as no fuelwood for commercial sale is allowed -CTallowed added DTallowed added -GRallowed added	organic matter of LULC class or forest stratum i in pool o. [Mg DM ha^{-1}]" – OK. h) Some parameters are missing -$size_{referenceForest}$: Required for the esitmation of the baseline rates for each instance. -EF_{forest}: Required for leakage calculation by unconstrained drivers -$leakage_{unconstrained}(d)$: Required for leakage calculation by unconstrained drivers -$CE_{inventory,ANR}(t,i)$ - $RFRGrate(CS_1 \rightarrow CS_2)$. It should be reported in the VCS PD so that it can be used for producing baseline transition matrix for new instances. Some parameters are no longer required -$\boldsymbol{area_{biomassLoss,ANR}(t,i)}$ -$\Delta area_{projectAreaWithoutHarvest,baselineScenario}(t,i)$ -P: No longer required as fire emissions are not accounted. -E Some additional parameters are missing for project and leakage ex-ante estimations (Please check OBS4) - CFWallowed: For leakage estimations -CTallowed -DTallowed -GRallowed -CFWallowed -Effectiveness **Assessment #3** (MED Version 10) The MED has been revised. DNV confirmed that the MED now includes all the necessary parameters and that notations are correct - OK. **CAR16 is closed.**

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		Effectiveness is added.	
CAR17	**Element of MED** Monitoring **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 9.3.2, 9.3.5 **Corrective Action Request** **a)** The MED, c.f. lines 2530-2536, states "Because increases in forest biomass are quantified using biomass inventories following CDM-AR-ACM0001 version 03 (see section 8.2.4), 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 Equation [EQ116].For the ANR areas, calculate values of $\Delta C(t,i)$ using Equations [**Error! Reference source not found.**] and [EQ74]". However, DNV deems that this is not correct as i) EQ116 does not include the parameter $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$; ii) the carbon stocks inventory would already factor any decrease in carbon stocks caused by any deforestation or degradation event, so the procedure provided seems to be incorrect. **b)** EQ123 is wrong as it includes parameter $\Delta area_{projectArea,projectScenario}\ (t,i)$ instead of $\Delta area_{large\ scale\ fires}\ (t,i)$.	**Response #1** (MED Version 06) a) EQ116 contained a small error and now refers to [delta area_projectAreaWithANR,projectScenario(t,i)] correctly. The normal carbon stock inventory will not detect any increases from ANR in case no forest regeneration/degeneration monitoring is conducted and only credits from avoided deforestation are claimed. The auditor is likely familiar with the limitations of using medium-resolution satellite imagery to detect small changes in forest biomass. Therefore, without these additional quantification procedures based on extra plots, project proponents would not be able to bring credits from ANR to market. b) This section is now completely revised and does not contain the incorrect parameter anymore. **Response #2** (MED Version 07) EQ115 should actually be $C_{ANR}(t)$. The latter term is defined 8.2.4.2. In addition, in 9.3.2, references to $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$ are removed since regrowth is measured based on inventories. Section 9.3.2 should not cover $\Delta area_{projectAreaWithANR,baselineScenario}(t,i)$either as this is fixed and not subject to monitoring. Therefore, all references to $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$ and $\Delta area_{projectAreaWithANR,baselineScenario}(t,i)$ are removed from 9.3.2. **Response #3** (MED Version 07.3) To solve this, we simply excluded $\mathrm{GHG_{sources,ANR}(t)}$ from $\mathrm{C_{ANR}(t)}$. That way, EQ113 can remain as it is since $\mathrm{GHG_{sources,ANR}(t)}$ must still be included AND EQ104 for the buffer calculation does not include $\mathrm{GHG_{sources,ANR}(t)}$.	**Assessment #1** (MED Version 06) a) Now EQ115 refers to $\Delta area_{projectAreaWithANR,projectScenario}(t,i)$, does this mean that when there is a stratum with increases in carbon stocks these are monitored and that when there are decreases these are monitored with AD? If this is the case the MED is not very celar, in particular EQ115. Please note that in EQ115 we are now missing terms to estimate the baseline emissions which were present in the previous version – **NOT OK**. b) The MED has been revised – OK. **Assessment #2** (MED Version 07) a) Please note the following issues: i) EQ104 includes ❻for the buffer calculation, which is now equal to $C_{ANR}(t)$. However, $GHG_{sources,ANR}(t)$ is included in $C_{ANR}(t)$ and this is not subject to Buffer withholding. ii) Please note that $C_{ANR}(t)$ is already included in EQ113. iii) Please note that according to EQ103 – EQ115, negative values mean reduction in the atmospheric CO2. However, $C_{ANR}(t)$ will give positive values if there are emission reductions. It seems that EQ110 should be $-C_{ANR}(t)$. **NOT OK.** **Assessment #3** (MED Version 07.3) The MED has been revised. Now there is no "double accounting" of emissions due to controlled burning - OK. **CAR17 is closed.**
CAR18	**Element of MED** Monitoring **Requirement** AFOLU requirements: VCS Version 3.3, §3.8.3 **Evidence (Report Section)** MED Version 05, Section 9.3.12 **Corrective Action Request** According to §3.8.3 of AFOLU requirements: VCS Version 3.3, "Activity-shifting, market leakage and ecological leakage assessments, where required, shall be undertaken as set out	**Response #1** (MED Version 06) Section 9.3.12.1 has been elaborated to specify that all types of leakage will be reassessed for any new project parcels added.	**Assessment #1** (MED Version 06) a) The MED has been revised – OK. **CAR18 is closed.**

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	in Section 4.6, and the methodology applied, on the initial group of instances of each project activity and reassessed where new instances of the project activity are included in the project". Section 9.3.12.1 shall be further elaborated in order to explicitly state that leakage assessment shall be reassessed where new instances are added; this includes the market leakage and other leakage assessments.		
CAR19	**Element of MED** Monitoring **Requirement** AFOLU requirements: VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 10.2 and 10.4 **Corrective Action Request** **a)** According to section 10.2, c.f. 2846-2848, of the MED "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". Hence, the IPCC default values are provided in the MED as a source of conservative values. However, many average values of the IPCC (e.g. BEFs) tend to overestimate carbon stocks, and in many cases ranges are provided. Procedures for the conservative application of default values shall be provided in the MED (e.g. some VCS methodologies make reference to the 'Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks' (version 2) which are already required for CDM methodologies). **b)** According to section 10.4, c.f. 2942-2944, of the MED in order to determine the total dry biomass of subsamples, stems and branches shall be oven dried at 70ºC. This temperature is suitable for drying fruits, flowers and leaves; the suitable temperature for drying wood or is 105ºC, until constant weight is reached. The MED should be revised.	**Response #1** (MED Version 06) Section 10.2 has been revised to include this language in the introduction specifying that the CDM guidelines shall be applied in choosing IPCC defaults.	**Assessment #1** (MED Version 06) a) The MED has been revised and it includes a reference to the use of conservative values and the application of 'Guidelines on conservative choice and application of default data in estimation of net anthropogenic GHG removals by sinks' (version 2) – OK. b) The MED has been revised – OK. **CAR19 is closed.**
CAR20	**Element of MED** General **Requirement**	**Response #1** (MED Version 06) MED revised.	**Assessment #1** (MED Version 06) Typo errors have been corrected - OK.

CAR ID	Corrective action request	Response by project proponents	DNV's assessment of response by project proponents
	VCS Version 3.3 **Evidence (Report Section)** MED Version 05, All sections **Corrective Action Request** Typo errors identified in the word version shall be addressed.		**CAR20 is closed.**

Clarification requests

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
CL1	**Element of MED** General and Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 3.2 and 8.1.2.4.2 **Clarification request** a) It is stated in line 261-261 that "The minimum mapping unit set forward in the forest definition must also be applied to forest strata" and in line 620 that "The minimum mapping unit for LULC classification and forest stratification must be identical as the minimum size set forward in the forest definition". There are some countries where the forest definition states that the minimum area is 0.05 ha (i.e. 22 m of pixel). Clarification is sought in what would be the approach in these cases since it is likely that no satellite imagery <22 m of spatial resolution is available for the historical period.	**Response #1** (MED Version 06) Section 3.2 and Section 8.1.2.2 have been revised to indicate that the minimum mapping shall never be less than 0.1 ha, which corresponds to approximates the area of 1 pixel in medium resolution satellite imagery and represents the minimum sampling unit area for geographically explicit LULC mapping according to IPCC GPG-LULCF 2003. **Response #2** For consistency with other methodologies, we changed this to a requirement that the minimum mapping unit shall be less than 1 ha. See comments marked with CL1#1.	**Assessment #1** (MED Version 06) Section 3.2 has been updated with "The minimum mapping unit must be set according to the forest definition employed for the project, or 0.1 ha, whichever is the greatest". However, in section 8.1.2.2 it is stated "*The minimum mapping unit for LULC classes shall be set according to the forest definition employed for the project, but shall be no less than 0.1 ha. This minimum size approximates the area of 1 pixel in medium resolution satellite imagery and represents the minimum sampling unit area for geographically explicit LULC mapping according to IPCC GPG-LULCF 2003*" which is more restrictive - **NOT OK.** **Assessment #2** The MED has been updated. Now it is stated that the MMU shall be smaller than 1 ha which is consistent with JNR and other methodologies such asVM0015. This is consistent with the maximum threshold for a forest definition – OK. **CL1 is closed.**
CL2	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3	**Response #1** (MED Version 06) a) The 250,000 ha requirement only has to hold at validation and is intentionally dimensioned large so that it can be allowed to shrink. Project proponents do not have to adjust the reference region when areas are added. To avoid that PPs can	**Assessment #1** (MED Version 06) a) In the registered version of AM0006, 250 000 ha was the minimum for a project area of <50 000 ha. If you fix it as 250 000 ha it would mean the reference area would be far from the minimum usually required by REDD MEDs for project areas in the

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	Evidence (Report Section) MED Version 05, Section 8.1.1.2 **Clarification request** **a)** It is stated in section 8.1.1.2 that the minimum size of the reference region excluding the project area is 250 000 ha or at least the size of the project area at the start of the crediting period. The MED accepts the inclusion of additional instances after the project validation, and these could occur within the reference area. Hence, at the time of the baseline renewal the reference area could be reduced significantly due to the existence of instances in this area. Clarification is sought on what would be the procedure in this case and whether the MED includes the necessary provisions for this. **b)** The MED states that "project proponents must demonstrate that the reference region contains at least 15% forest cover at the beginning of the crediting period". Clarification is sought on the rationale of this condition. Please note that in some countries in which the reference area covers the whole country, this condition might not be complied with.	add most of the project area after validation, therefore potentially distorting the mechanics of the methodology, we added a requirement to never add project area so that total size is greater than double the initial size (section 9.3.12.1) b) The 15% requirement was placed to ensure that the baseline can be reassessed periodically. Since the methodology relies on land-use, land-cover change modeling, it needs forest cover to re-evaluate the baseline deforestation rate at the baseline update. By putting this 15% requirement, which is an arbitrary number selected based on known deforestation rates in developing countries, the methodology provides opportunity to the project proponents to evaluate the deforestation rate outside of the project area after the conservation efforts are placed in REDD areas. If no more forest would be left in the reference region during the project period - it would be impossible to re-assess the baseline deforestation rate in the ref region. **Response #2** (MED Version 07) Regarding (i) It was clarified in a call that the 250,000 was set as the area needed to get a robust estimate of the deforestation rate. In addition, making the size of the reference region a function of the project area's size will only incentivize people to share reference regions among projects. Also, when one is allowed to group projects, one can use the same reference region anyhow. Finally, if the reference region is not representative because it is too small for a large project area, than the methodology's requirements regarding similarity between project area and methodology should take care of that, not the minimal area requirement. Regarding (ii) The requirements are changed so that the maximum expansion cannot be more than 50% of the reference region, unless the reference region is redrawn and the baseline is reset. See 9.3.10.1, comment "CL2#2".	range of 50 000 – 250 000 ha. We understand that 250 000 ha OR the project area whichever is largest makes thing very consistent with the figure provided by VM0007 (Reference Area = 7500*PA^0.3), which is a minimum of aprox. 250 000 ha and from there equivalent to the project area. However, the figure provided by VM0007 is in terms of forested area at the start of the historical reference period while in this MED the project area is in terms of gross area (with the requirement of 15% forested area at the start date of the crediting period). My understanding is that your case would lead to more conservative values, as based on the forest scarcity principle, a deforested reference area would have a lower deforestation or degradation rate. However: i) According to VM0007 the minimum reference area starts to be equal to the project area above 350 000 ha not 250 000 ha. Please provide more evidence for the correctness of the 250 000 ha. ii) Regarding the new change made in the MED regarding the maximum area included after the validation of the project, the issue is that this would allow projects that commence with 250 000 ha and that increase to 5000 000 ha applying the same reference area which could be made even smaller considering new leakage belts, etc. The problem is that the reference area would be too small. We would need further evidence in order to have a reference area that still provides a robust and representative baseline and to agree on other limits to this expansion. Maybe addition of additional instances up to 250 000 ha could be acceptable in this case – **NOT OK.** b) The MED has been modified in order to include a specific condition regarding the application of the methodology in the case the reference region encompasses a whole country or island. DNV deems that it would be correct to consider as reference region the whole country or island – **OK.** **Assessment #2** (MED Version 07) a) Regarding the above issues: i) DNV agrees that the size of the reference region is subjective as it would be possible to have various independent projects using the same reference region, so there is no reason why various instances of a same project could use the same reference region. DNV deems that the only limitation of the size is linked to a minimum forest area in order to enable to produce a transition matrix with enough data; 250 000 ha seem to be sufficient for having enough. ii) The MED has been revised. Now it is stated "If the new project area is located entirely within the existing reference region boundary and the size of the total new project area – i.e., cumulative since the beginning of the project – is less than half of the size of the reference region, that area can be added to the existing project area without the need to update the reference region and the baseline". – OK. **CL2 is closed.**
CL3	**Element of MED** Baseline emissions **Requirement**	**Response #1** (MED Version 06) Section 8.1.3.4 wording has been changed as follows: "If necessary, adjust the area and location of the reference region to ensure that the same drivers of deforestation	**Assessment #1** (MED Version 06) The MED has been modified and it states now "If necessary, adjust the area and location of the reference region to ensure that the same drivers of deforestation are

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.3.4 **Clarification request** It is stated in lines 821-822 "If necessary, adjust the area and location of the reference region to ensure that the same drivers of deforestation are acting in both the reference region and the project area". This seems to be contradictory in the case of deforestation as if the deforestation drivers are already acting in the project area, it means that not all the project area is forest.	are present in both the reference region and the project area."	present in both the reference region and the project area". This typo has been corrected - OK. **CL3 is closed.**
CL4	**Element of MED** Leakage emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.3.2.4 **Clarification request** **a)** The MED provides procedures in order to determine the CH4 Emissions from Small-Scale Fires within the project area and the leakage area. It provides in section 8.3.2.4 procedures in order to conclude whether these are significant considering emissions within the project and leakage area in the previous 5 years. However, the MED does not provide any procedure to estimate these emissions in the baseline, and it seems that in the case the emissions in the leakage and project areas are significant these have to be accounted for without referencing to a baseline level. Clarification is sought on why these emissions are accounted for and why these are not referenced to a baseline level in order to have the net anthropogenic increase in these emissions. It should be noted that this could lead to an overestimation of project and leakage emissions.	**Response #1** (MED Version 06) We have revised the accounting procedure such that only emissions from small-scale fires are based on a comparison of actual fire area vs. baseline fire area. This was not done for large-scale fires since these are often too infrequent to establish a meaningful annual baseline. Furthermore, we have also ensured that GHG emissions benefits are not created if the fire emissions declines in the project area compared to baseline. All relevant parameters have been updated in the monitoring section.	**Assessment #1** (MED Version 06) a) Now we see that referencing the emissions in the project scenario to those in the reference area would complicate things as we would have to consider also any increase or decrease of fires in the leakage area in order to really be able to compare with baseline levels. Now we wonder why accounting for non-CO2 emissions from uncontrolled burning in the project scenario is being accounted for as these are expected to be lower than in the baseline scenario. We think that this is unique to this MED and to VM0007. We think that it is reasonable to assume that non-CO2 emissions from uncontrolled burning will be lower in the project scenario (leakage area + project area) than in the baseline scenario; if emissions in the project scenario are higher it would most probably be due to catastrophic events (these are not part of the baseline) which are significant (not deemed *de minimis*). Accounting for any type of fire would mean a huge effort in some cases, which is not justifiable based on the above rationale. We have made some calculations assuming conservative emission factors of a tropical forest (c.f. excel spreadsheet), and in order to conclude that non-CO2 emissions of a catastrophic event are significant (>5% of emission reductions that year, assumed as baseline deforestation – Project deforestation), these should be equivalent to 41%≈40% of the deforestation rate in a certain year (e.g. if the deforestation rate is 100 ha/yr, the catastrophic event should have affected 40 ha) assuming that all biomass is removed and it is burned which is conservative. Hence, if in a certain year a catastrophic event has affected less than 40% * DEFrate, no non-CO2 emission should be considered. CO2 emissions are factored in any case. In addition to this, in the case the deforestation rate in the project scenario exceeds that of the baseline scenario in a certain year, non-CO2 emissions should be considered too. This would probably introduce some simplicity to the MED, mainly regarding monitoring.

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
		Response #2 (MED Version 07) Per the auditor's assessment, any fire that is not catastrophic will lead to emissions that are de minimis. Therefore, all sections related to fire from uncontrolled burning were removed, whether this is small-scale or not. Emissions from catastrophic fires fall under the VCS requirements for catastrophic events and should not be included in a methodology to avoid overlap with the relevant VCS AFOLU requirements. **Response #3** (MED Version 10) Non-CO2 emission from fires are excluded in ex-ante calculations.	**NOT OK** **Assessment #2** (MED Version 07) The MED has been revised. Emissions from uncontrolled fires has been deleted as an emission source of the methodology. DNV deems that this is reasonable considering that it is very likely that emissions for uncontrolled fires in the project scenario will be lower than emissions in the baseline scenario. DNV further agrees that in the case it does not happen like this, it would be required a catastrophic even in order to make these emissions above de-minimis level. In this case, emissions from catastrophic events which are not de-minimis would be handled according to VCS specific requirements. Yet, non-CO2 emission from fires are still included in ex-ante calculations - **NOT OK.** **Assessment #3** (MED Version 10) The MED has been revised. Non-CO2 emissions from fires have been excluded from the ex-ante calculations plus the associated parameters - OK. **CL4 is closed.**
CL5	**Element of MED** Quantification of Net GHG Emission Reductions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.4.4 **Clarification Request** a) The first term of equation 121 gives the carbon stocks in the harvested areas in the project scenario while the second term provides the changes in carbon stocks due to deforestation within the harvested areas in the baseline scenario. Clarification is sought on why the first term does not refer to changes in carbon stocks too.	**Response #1** (MED Version 06) This equation is applicable for estimating GHG emissions reductions benefit from areas that will undergo harvesting by avoiding deforestation. The first term shows total amount of avoided carbon in the harvest areas and any change in baseline deforestation in the harvest areas that the project avoided. SDG: This is an explanation of the equation, not a response on his question. Please rephrase and respond to his question. I actually think he may be right. TODO BDS **Response #2** (MED Version 07) See CAR 11. As CL5 is tied to CAR 11, it should be closed here.	**Assessment #1** (MED Version 06) Please refer to CAR11 – **NOT OK.** **Assessment #2** (MED Version 07) The MED has been revised. Now it is clear that within harvested areas the carbon stocks will monitored through periodical estimations of carbon stocks - OK. **CL5 is closed.**
CL6	**Element of MED** Data and Parameters **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 9.1 and 9.2 **Clarification Request** **a)** The MED indicates a frequency of monitoring for	**Response #1** (MED Version 06) a) Corrected frequency of monitoring to "At least once before every baseline update" b) These two parameters are related to long-term average carbon stock estimation from areas that undergo harvest activities under the project scenario. Since the estimated long-term average is least likely to vary year after year, the long term average can be re-assessed at baseline update. This update frequency is chosen for reducing the cost of monitoring. However, if the project proponents see a financial incentive to annually monitor the area, it was made an option to undertake the monitoring activities at every verification.	**Assessment #1** (MED Version 06) a) The MED has been updated. However, this can also be updated at instance inclusion if new instances are included – **NOT OK.** b) According to EQ120 those parameters are used to estimate the ΔGHG from avoided deforestation from areas under harvest so it is monitored. Besides, this is degradation that should be monitored. This is related to CAR11, so we should further discuss – **NOT OK**. **Assessment #2** (MED Version 07)

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	$\Delta area_{leakageArea,baselineScenario}(t,i)$ of "At least once before verification". Clarification is sought on whether this is correct as this theoretically should be fixed until the baseline renewal (except of new instances that might not be within the reference area). **b)** The MED indicates that parameter $C_{Harvest}(t,i)$ and $u_{inventory,harvest(t,i)}$ has to be monitored with a frequency of at least at baseline update or as frequently as each verification. Clarification is sought on why this parameter is not monitored before each verification.	**Response #2** (MED Version 07) a) This parameter is applicable for monitoring leakage i.e. transition among strata and are monitored annually. b) C_harvest(t,i) and u_inventoryharvest(t,i) are monitored annually while the measurement can take place once every verification. See CAR 11. **Response #3** (MED Version 09) a) Frequency monitoring updated to Once every baseline update. Also at the time of instance inclusion that requires new leakage area. b) Monitoring frequency of both C_harvest(t,it) and u_inventory,harvest(t,it) are updated to "Once before every verificaiton".	a) This parameter is related to the transition matrix of the leakage area in the baseline scenario. This is fixed for 10 years but it can also be updated at the time of instance inclusion – **NOT OK**. b) Annual monitoring of this parameter is from our point of view excessive as it could be done before each verification and then annualize using a carbon-stock change method – **NOT OK.** **Assessment #3** (MED Version 09) a) The MED has been revised. This is fixed for 10 years but it can also be updated at the time of instance inclusion – OK. b) The MED has been revised. Monitoring occurs before each verification and then annualize using a carbon-stock change method – OK. **CL6 is closed.**
CL7	**Element of MED** Data and Parameters **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 07, Section 5.3 and 8.1.1.2 **Clarification Request** a) According to the section 5.3 and 8.1.1.2 "*The reference region always excludes the project and leakage area*". DNV checked the graphs in section 8.1.5.1 and EQ37 and EQ38 and found that the projected rates of deforestation and degradation in the project area are based on the projected rates in the reference area considering the forested area in the reference area at the start of the baseline validation period. This assumption is only correct if the project area and leakage area are contained by the reference region, so the reference region is a larger region within the project and leakage area are included, so it would be logical that the project and leakage areas would see the same DEF/DEG rate expected at a regional level. In fact in VM0006 Version 1 it was clearly stated that "*If no such applicable regional or national baseline is available, a stratified regional baseline (Sathaye and Andrasko, 2007; Brown et al., 2008) must be developed in a reference region around the project area but much larger than the project*	**Response #1** (MED Version 09) I think you're right and the issue is fairly simply accounted for by adding "and project area": *The historical rates of all LULC class and forest strata transitions must be calculated the union of the reference region, leakage area**, AND PROJECT AREA*** The last sentence in CL6 does not seem to be complete. If this response is not complete, please elaborate.	**Assessment #1** (MED Version 09) a) The MED has been revised. Now it clearly states that the historical rates shall be based on the union of the reference region, leakage area and project area. However, DNV deems that the MED is not clear for the reader in many points: i) Definition of reference area. The use of reference area is not clear in many cases. The reference area is the area in which def/deg rates are estimated and which projections are used for modeling def/deg in the baseline scenario in leakage and project areas. Therefore, the reference area shall contain the leakage and project area before validation, and ideally to all subsequent instances and leakage areas of instances before baseline removal. Stating that the historical analysis is done for the union of the reference area, project area and leakage area is confusing and contradictory with the definition of reference area, besides it induces to confusion for the baseline renewal as in baseline renewal the reference area shall be redefined in order to extract all project areas and leakage areas. ii) Location of project and leakage areas with regard to reference area. In order to be able to use the projections provided in the reference area, it is essential that the leakage and project areas occur within the reference area, and I don't mean as GHG accounting, but also from a location point of view. If the project area and leakage area are located in a different region of a country than the rest of the reference area, even though they are similar from the natural and socio-economic point of view, it would not be possible to apply the projected deforestation to the project area as the project area and the rest of the reference region could be in different points from a cumulative deforestation curve, i.e. if the project area is closed to the rest of the reference area, it is expected that the deforestation seen in the rest of the reference area would be moving to areas that are still forested (the project area, of instance). iii) Some inconsistencies. The MED states "*The minimum size of the reference region excluding the project area is 250,000 ha or at least the size of the project area at the start of the crediting period, whichever is greater*". In this case nothing is stated of the leakage areas. This induces to confusion. There are other examples throughout the

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	area" which would show the original rationale for this. Furthermore, considering EQ37 and EQ38 the reference region has to include project and leakage areas for doing the historical analysis. These areas will be then clipped out at the starting date of the project activity as it would occur with any additional instance added in a later stage. My understanding is that this is what you had in mind, yet it is not clear.	**Response #2** (MED Version 10) **i) Definition has been revised as below:** *The **reference region** is the region from which historical and current deforestation and forest degradation quantities and trends are obtained to predict future deforestation and degradation quantities in the absence of project activities (i.e. baseline scenario). The reference region may include project area and leakage belts initially, but the project area and leakage belts are excluded from the reference region after the start of the crediting period. Additionally, whenever new instances of project areas and leakage areas that were previously included in the reference region are added into the existing project area, the new added instances must be removed from the reference region. The project and leakage area polygons must be excluded from the reference region (i.e. "clipped out" during spatial analysis) after the start of the project crediting period.* ***ii) Location of project and leakage areas with regard to reference area*** *The seleciton of reference region is based on multiple criteria defined in Table 3. One of the criteria under socio-economic front is prevailing policies. While it is true that deforestation may appear to be similar in locations that are closed together,but the underlying cause may not entirely the clsoeness of areas, but due to similarlity in poliies, biophysical and socio-economic context.* I cannot agree with statement "If the project area and leakage area are located in a different region of a country than the rest of the reference area, even though they are similar from the natural and socio-economic point of view , it would not be possible to apply the projected deforestation to the project area as the project area and the rest of the reference region could be in different points from a cumulative deforestation curve, i.e. if the project area is closed to the rest of the reference area, it is expected that the deforestation seen in the rest of the reference area would be moving to areas that are still forested (the project area, of instance)." Because the entire idea of reference region is based on only on "similarly" not the distance. When the lands-tenures are different and policies are different the neighbouring lands observes different deforestation. For example, deforestation rate in the national park or reserve forest is sure to be different	MED. As I said, it would be recommendable to have a drawing showing the realation of this areas in space (as in VM0015), showing the evolution of these areas with time (considering instance inclusion or baseline renewal) and showing that the reference region is always the region from which data is obtained to estimate the deforestation projection. For validation this includes the project and leakage area, and ideally all additional instances. At baseline renewal, this would be updated in order to extract project and leakage areas, etc. – **NOT OK**. **Assessment #2** (MED Version 10) The MED now provides clear indications of what is the reference region and its evolution throughout time - OK. **CL7 is closed.**

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
		than the deforestation rate in surrounding unprotected forest. Thus, land-use policy and law enforcement is major contributor to deforestation rate, and not the distance. Thus, "should be close together" is not much of value in selecting reference region. Therefore, we do not believe that a reference region need to be very close to the project area to be represetnative of the reference region, speciallyi n the case of mosaic deforestation. If two areas are apart while all the criteria listed in table 3 are match, we do not think we have enough reasons to believe that the deforestation rates would not be similar. ***iii) Some inconsistencies.*** With the revision in definition, much of the confusion is resolved. In addition, the text now explicitly states that the reference region is 250,000 excluding project are and leakage area. I believe the revision definition resolves any confusion. But if it did not, we may have to think about adding a hypothetical illustrative map.	
CL8	**Element of MED** Leakage estimation - Monitoring **Requirement** AFOLU requirements: VCS Version 3.3, §4.6.3 **Evidence (Report Section)** MED Version 09, Section 9.3.12 **Corrective Action Request** The PD states "in case project proponents can justify in the monitoring report that the empirically observed transition rates in the leakage belt are not caused by leakage caused by project activities, but rather through some external factor, it is allowed to use the leakage cancellation factors determined ex-ante for ex-post calculations. A valid justification that the observed transition rates in the leakage belt are not caused by leakage caused by project activities is to demonstrate that the deforestation rate has increased in the reference region beyond what was assumed in the baseline". Clarification is sought on whether the use of ex-ante factors which are subjective or imprecise would be valid considering that it would be possible to demonstrate that ex-ante DEF/DEG projected rates have changed ex-post by observing new rates in the reference region.	**Response #1** (MED Version 11) Here is a draft text based on our internal discussion and analysis. This text will replace section 9.3.3.1 of the meth. However, in case project proponents can justify in the monitoring report that observed change in deforestation and/or forest degradation in the leakage area compared to deforestation and/forest degradation in baseline in the leakage area is not caused by project activities, but rather through some external factor, project proponent are allowed to adjust the baseline rate of deforestation and forest degradation within the leakage area as explained in this paragraph. This justification may include the case when in the monitoring period the deforestation and/or forest degradation rate in the reference region is higher than the monitored rate of deforestation and forest degradation within the leakage area. Under this case, project proponents may adjust the baseline rate of deforestation and/forest degradation rate in the leakage area before calculating the geographically constrained leakage. The rate of deforestation and/or forest degradation within the leakage area under the baseline is adjusted by first estimating the rate of deforestation and/or forest degradation in the reference region through remote sensing, and then using this rate as the total rate of deforestation (and/or forest degradation) in estimating the adjusted baseline rate of deforestation and forest degradation for the monitoring period within the leakage areas following the procedures described in section 8.1.5.4. All other variables and inputs to the procedure in section 8.1.5.4 shall remain the same as the values used at validation or last baseline update. Once the project proponents elect to adjust the baseline rate of deforestation and/or forest degradation in the leakage area, the project proponent must continue to demonstrate that the adjusted rate is valid for the next monitoring period, or readjust the baseline rate of deforestation and/or forest degradation in leakage areas relevant to that monitoring period until the next baseline update.	**Assessment #1** (MED Version 11) DNV agrees on the proposed approach. Baseline DD is based on a projected model which is only based on the analysis of the DD rates observed within the reference region during the historical period. The MED provides in section 8.1 procedures to estimate conservatively the DD rate which will lead to conservative estimations of baseline emissions within the project area. However, this approach has two issues: a) Historical rates are not necessarily accurate, as during the crediting period regional DD rates might increase due to changes in socio-economic factors (e.g. technological break-through, immigration from other regions, new infrastructure which facilitates the access of DD agents, etc.). In this case we would see an increase in DD rates above baseline levels which is especially critical in the leakage areas as these will see a higher DD rates linked to the overall increase in regional DD rates and due to the displacement of DD agents from the project area. b) Baseline projected rates were estimated conservatively as the lower bound at the 95% confidence. This lack of accuracy of the projected rates will cause that the DD seen in the leakage area will always be higher than the baseline rates. Something which will penalize the project as it will account for more leakage than really considered. In view of this, DNV agrees that the project proponent should have the option to update the baseline scenario but only reduced to the leakage area. **CL8 is closed.**

CL ID	Clarification request	Response by project proponents	DNV's assessment of response by project proponents
	It would be possible to adjust a new deforestation or degradation rate and show the impact in numbers.		

Observations

OBS ID	Observation	Response by project proponents	DNV's assessment of response by project proponents
OBS1	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.1.2 **Observation** a) It is stated "Existing regional or national baselines that are spatially explicit and approved by the competent national authority must be adopted if they provide an equally or more accurate measure of the project's baseline compared to this methodology i.e., the pre-existing baseline needs to conform to the requirements of this methodology." It should be noted that this is not in line with the requirements of the JNR §3.11.14 which require project proponents to adopt the baseline in any case.	**Response #1** (MED Version 06) Section 8.1.1.2 Text revised to conform to JNR rule to always adopt existing baseline of the higher jurisdiction. See text highlighted by comment bubble "OBS1".	**Assessment #1** (MED Version 06) a) The MED has been revised –**OK.** **OBS1 is closed.**
OBS2	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.4.3 **Observation** a) It is stated in lines 873-876 "Extra measurement plots must be installed within the ANR areas to reliably estimate the increase in carbon density. Use AR-AM Tool 03 ("Calculation of the number of sample plots for measurements within A/R CDM project activities") to determine	**Response #1** (MED Version 06) Section 8.1.4.3 Revised as recommended using the verb "may".	**Assessment #1** (MED Version 06) a) The MED has been revised –**OK.** **OBS2 is closed.**

OBS ID	Observation	Response by project proponents	DNV's assessment of response by project proponents
	the number of biomass inventories required". The referred tool is very specific to A/R project activities and it is not applicable to all the circumstances and certain plot configurations, therefore DNV recommends to include here a "may" and not make the use of the tool compulsory.		
OBS3	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 8.1.4.4 **Observation** **a)** It is stated in lines 944-945 "The aboveground organic **must** be calculating by measuring the **DBH** of all trees with a **DBH ≥ 5 cm** within the sampling plot". This requires to use as biometric parameter the DBH and defines the minimum DBH ≥ 5 cm. The MED proponent should consider revising this, in order to use more general terms as in some projects other parameters might be used (collar diameter) and equations might allow using diameters above 2 cm. The statement provided in the MED is very specific to certain project circumstances. Please note that there are many references to DBH throughout the MED which should be revised too. **b)** Line 951 states that the aboveground non-tree organic matter "must be measured by destructive harvesting techniques". DNV deems that this is too stringent as: a) allometric equations can be built for shrubs too, or at least tables which provide biomass per size and species; b) Other methods which are less costly are available. For instance the tool for the "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in AR CDM project activities _V3.0.0" provides alternative	**Response #1** (MED Version 06) a) We have changed the text to be less restrictive and have made clear that DBH is only an example of a tree metric that can be used in an allometric equation throughout the meth. b) We have included a reference to the tree and shrub tool c) Thanks for the observation. We have revised the method for lying dead wood based on the CDM tool without specifically refering to this tool. This change demanded changes in other component of dead wood pool.	**Assessment #1** (MED Version 06) a) The MED has been revised –**OK.** b) The MED has been revised –**OK.** c) The MED has been revised –**OK.** **OBS3 is closed.**

OBS ID	Observation	Response by project proponents	DNV's assessment of response by project proponents
	methods for the estimation of shrub biomass based on IPCC default values and just requiring the estimation of the Crown Cover. The MED proponent should consider revising this. **c)** Regarding the estimation of lying and standing dead organic matter, the MED proponent should note that methods for the estimation of these pools are provided in the CDM tool "Estimation of carbon stocks and change in carbon stocks in dead wood and litter in AR CDM project activities".		
OBS4	**Element of MED** Monitoring **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 05, Section 9.1 and 9.2 **Observation** **a)** Section 9.1. states that the source of the value for parameter ρ_{wood} has to be GPG-LULUCF Table 3A.1.9. The MED proponent shall note that many species or genus are not provided in this source. It is recommendable to state that other sources for basic density are acceptable. **b)** Section 9.2 provides many parameters which refer to data, parameters, or variables appearing as intermediate values in calculation steps provided in the MED. These parameters could be deleted as they would not be necessary. This would reduce significantly the number of parameters of sections 9.1 and 9.2 which would simplify significantly the methodology.	**Response #1** (MED Version 06) a) alternative data source was added to parameter rho_wood b) we went through the list of data parameters and variables and removed any intermediate calculations. Please indicate where you think an intermediate calculation remains, as we may have a disconnect on what is intermediate and what isn't. Note that you requested to add parameters uclassification, utransition and ustratification, while I would categorize these as derived. Please advise **Response #2** (MED Version 07) Section 9.3.2 was completely revised and any mentioning of parameters that are not used were removed from this section. We have tried to more explicitly state which parameters are provided at baseline renewal and which ones not. However, we felt that a complete separation of these parameters was not feasible as it would lead to too much repetition in this section. The following sections were deleted from the methodology for consistency and simplicity: • All parameters that are qualitative and not required for GHG accounting from the monitoring variables as they will be included in the monitoring reports and/or the PD. • All boxes indicating "PD requirements" since this text is overlapping and redundant with the body of the methodology • Table 21, outlining the variables needed in a monitoring report, was redundant with the tables in section 9.2 We have removed the following emission sources from the methodology since they are de minimis with reasonable assurance: • Emissions from fertilizer for agricultural intensification are removed to follow VCS AFOLU requirements • Woodlot plantation and Woodlot regeneration. It is almost certain that woodlots will have higher stock density than the land use land cover they are established on. Therefore, their omission is conservative. $GHG_{sources,projectArea}(t)$ was replaced by $GHG_{fireBreaks}(t)$ as emissions from firebreaks were the only project-related emission included. This simplified section 8.2.3	**Assessment #1** (MED Version 06) a) The MED has been revised – **OK.** b) It has been improved. There are parameters in section 9.2.3 which is not clear for what they are for instance. Furthermore, I guess it would be good to have separated those parameters which have to be provided at baseline renewal and those at verification. We could further discuss on this if you like to further simplify the MED. Otherwise, we can leave it like this as it is acceptable. – **NOT OK**. **Assessment #2** (MED Version 07) This is just to make further observations. ✓ Ex-ante parameters that do not serve for ex-post estimates (actual NERs generated) ideally should not be in section 9.2 as they are not necessary for any monitoring, not even at baseline renewal. I am referring mainly to the parameters required in equations and guidance provided in 8.1.3 and 8.2.1. ✓ Parameters in 9.1 and 9.2 should be related to estimations of NERs ex-post trying to avoid including a) calculated parameters (which are derived from other parameters already listed) AND b) which are not important to be reported in the VCS-PD or MR (e.g. for instance, reporting uncertainties of EF or carbon densities it is important as this serves as reference for future verification periods; also the accuracy ex-ante would be important, etc.) **NOT OK**.

OBS ID	Observation	Response by project proponents	DNV's assessment of response by project proponents
		Response #3 (MED Version 09) Ex-ante values were removed that are not relevant were removed. **Response #4** (MED Version 10) Added the following three parameters as suggested: • $contribution_{DF}(d)$ and $contribution_{DG}(d)$ • $RelativeDriverImpact_{DF}(t,d)$ and $RelativeDriverImpact_{DG}(t,d)$ • $leakage_{constrained}(d)$	**Assessment #3** (MED Version 09) Since all primary parameters will be reported in the VCS-PD anyway, probably an idea to reduce the number of parameters but still report values which will be used in future verifications, you could only report calculated values in this case: -Contribution of each driver DF/DG -Relative driver impact DF/DG -$leakage_{constrained}(d)$ **NOT OK**. **Assessment #4** (MED Version 10) The MED was revised - **OK** **OBS4 is closed.**
OBS5	**Element of MED** Baseline emissions **Requirement** VCS Version 3.3 **Evidence (Report Section)** MED Version 07, Section 8.1.4 **Observation** **a)** Section 8.1.4 provides equations in order to estimate the carbon density which assume a stratified or simple random sampling using PSPs (or TSPs in non-forest classes). For instance in 8.1.4.4 it provides equations for the estimation of $OM_o(i)$ and $stderr(OM_o(i))$ assuming a SRS. In order to ensure the application of latest available technology to estimate the carbon stocks, the MED should give also the option to use other acceptable methods to estimate carbon stocks such as double sampling or regression estimators which would enable to use latest available technology such as LiDAR, etc. The average estimate and the standard error should be calculated using appropriate formulae, etc. (A/R CDM is evolving in this sense…now they are planning to accept the use of double sampling to estimate carbon stocks in any stratum and to use combination of different	**Response #1** (MED Version 09) Good point. We have added the following as the last paragraph of section 8.1.4.5: The stratum-specific average organic matter density, $OM(i)$ and its associated uncertainty, $u_{inventory}(i)$ may also be (partially) estimated using LiDAR on the condition that (1) it can be demonstrated in the Project Document that the use of LiDAR is conservative, and (2) valid and unbiased uncertainty estimators are provided for the biomass stock density that are equivalent to the uncertainty estimators used for plot-based measurements described in this methodology. Project proponents may use any existing or forthcoming VCS tools or VCS approved methodology elements to demonstrate that the use of LiDAR is effectively conservative. **Response #2** (MED Version 10) Revised as shown below:. The stratum-specific average organic matter density, $OM(i)$ and its associated uncertainty, $u_{inventory}(i)$ may also be (partially) estimated using other sampling approaches such as double sampling, regression estimators i.e., LiDAR on the condition that (1) it can be demonstrated in the Project Document that the use of such approach is conservative, and (2) valid and unbiased uncertainty estimators are provided for the biomass stock density that are equivalent to the uncertainty estimators used for plot-based measurements described in this methodology. Project proponents may use any existing or forthcoming VCS tools or VCS approved methodology elements to demonstrate that the use of such approach is effectively conservative.	**Assessment #1** (MED Version 09) I would not say LiDAR, but would say "using other sampling approaches such as double sampling, using regression estimators, etc.". A project developer may use double sampling using basal area estimations or NDVI with other measurements, or they would apply a multistage sampling, etc. **NOT OK**. **Assessment #2** (MED Version 10) The MED has been revised - OK. OBS5**is closed.**

OBS ID	Observation	Response by project proponents	DNV's assessment of response by project proponents
	sampling methods. I send you attached the draft).		

APPENDIX B

CURRICULA VITAE OF THE TEAM MEMBERS

Andrés Espejo

Mr. Espejo is a DNV Natural Resource Engineer with 8 years' work experience in Europe (UK, Spain and Portugal), South America (Brazil, Guatemala, Chile, Colombia, Argentina) and Africa (Republic of Congo, Uganda, South Africa, Mali, Senegal, Mozambique, Morocco, Kenya). He has extensive and direct experience in managing teams involved with forestry, natural resource valuations, forest inventory and cruising, logistics, biomass valuation and projects & domestic CO2 offset projects.

Mr. Espejo has worked as a forestry engineer for local operations in Galicia - Spain (Forest to Mill and Biomass procurement), operations in Congo Brazzaville, and maritime logistics: Forestry Inventory, valuation and appraisal of forest resources, Forest management, sylvicultural systems, Sylvicultural operations (afforestation, fertilization, liming, soil improvement,), harvesting planning, and ship fixing. Mr. Espejo also provided a FSC controlled wood audit reports of Eucalyptus Fibre Congo made for Portucel Soporcel Group. Mr. Espejo developed a Forest Management plan of HUNOSA's rural land (2.500 ha) and proposal for the creation of a CO2 DOP project.

Mr. Espejo is a senior CDM / VCS validator and verifier and has Technical Area competence in Forestry (Technical Area 14.1) and Agriculture (Technical Area 15.1) under the CDM. He has been involved in the management of more than 30 validations/verifications. Mr. Espejo has been following very closely the development of the different REDD initiatives and negotiations and has a profound knowledge of the main approved REDD/IFM methodologies, DNV has also followed closely the development of a system for the integration of REDD sub-national initiatives with a main REDD national initiative (i.e. nested approach) and has followed closely the development of the VCS Jurisdictional and Nested REDD+ requirements, and knows the requirements of the recently approved standard "Jurisdictional and Nested REDD+ (JNR) Requirements" (Version 3.0). Projects he has been involved with include:

- Verification of Interim REDD+ Performance indicators under the Guyana-Norway REDD+ partnership: Team Leader
- Pre-audit of regional SADC MRV system developed by GIZ
- Second periodical verification of REDD Kasigau project – Phase I (VCS Nº562) and II (VCS Nº612). Leader auditor of REDD project applying AM0009.
- First verification of CDM A/R project "Reforestation as Renewable Source of Wood Supplies for Industrial Use in Brazil" (CDM Nº2569). Leader auditor of A/R project applying AR-AM0005.
- VCS validation and verification of Mali Jatropha Curcas Plantation Grouped project (VCS Nº829). Leader auditor of A/R project applying AR-AMS0006.
- VCS validation and verification of Bukaleba Forest project (VCS Nº799). Leader auditor of A/R project applying AR-ACM0001.
- Verification of the CDM project "Brazil AES forestry project" (CDM Nº3887). Leader auditor of A/R project applying AR-AM0010.
- Verification of the CDM project "Commercial reforestation on lands dedicated to extensive cattle grazing activities in the region of Magdalena Bajo Seco" (CDM Nº4861)
- Initial verification of the CDM project "Securitization and Carbon Sinks Project" (CDM Nº4957). Leader auditor of A/R project applying AR-AM0005.
- Initial verification of the CDM project "Reforestation of degraded degrading land in the Caribbean Savannah of Colombia" (CDM Nº6301). Leader auditor of A/R project applying AR-AM0009.
- VCS methodology VM0010 "Conversion from Logged to Protected Forest, v1.1". Technical reviewer.

- VCS methodology VM0012 “Improved Forest Management on Privately Owned Properties in Temperate and Boreal Forests (LtPF)”. Technical reviewer.
- ISO14064-2 methodology “Rarakau Programme Methodology V1.0”. Technical Reviewer.
- CDM validation of 2 A/R projects in Kenya: “Restoration of Degraded Lands through Reforestation in Mau Forest Complex & National Park area, Kenya” and “Restoration of Degraded Lands through Reforestation in Aberdare Forest Range , Kenya”. Team Leader – ongoing project.

Edwin Aalders

Mr. Aalders has 20 years of experience as an assessor in Environmental Auditing and Policy and Management and in particular related to Climate Change. Mr. Aalders started his career in SGS in 1992 were he quickly became involved in the development of new environmental certification & control services from 1999 ran the Climate Change programme of SGS. In 2004 he became the Director of the International Emission Trading Association (IETA). He acted as the first CEO for the Verified Carbon Standard Association (VCSa) between November 2007 and October 2008 and after leaving IETA Mr Aalders in 2010, became a Partner with IDEAcarbon before joining DNV as at their Climate Change and Sustainable Development Department in 2011.

Mr Aalders has extensive experience with developing Climate Change strtegies and International Cliamte Change negotiations, which saw him being involved in the development of earlier programmes such as the ERUPT, EU ETS, CDM/JI and the more resent NAMAs. During the implementation of the EU ETS Mr Aalders was lead author in the drafting group of the EA-06 developed for the EU ETS MRV system. As Director of IETA Mr Aalders authored numerous publications and position papers in relation to the different market based instruments. Since joing DNV Mr Aalders authored the various manuals on NAMA MRV and team member in the various climate change projects implemented under the different programmes i.e. CDM,JI,VCS, various ETS’ and REDD+.

Mr Aalders is and has been an elected member of roster of experts for the Methodology & Accreditation Panel Expert of the CDM & JI, member of the JI Accreditation Panel, and is currently member of the VCSa AFOLU Steering Committee and the Pacific Carbon Trust Advisory Panel.