

REVISION AND EXTENSION TO VM0007: REDD+ METHODOLOGY FRAMEWORK FIRST ASSESSMENT REPORT



Document Prepared By: Aster Global

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| Methodology Category | Methodology | |
| | Methodology Revision | X |
| | Module | |
| | Tool | |
| Sectoral Scope(s) | Agriculture, Forestry and Land Use | |

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|-----------------------|---|
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Summary:

Aster Global was commissioned by Restore America’s Estuaries to perform the first methodology revision assessment of the revision and extension of VM0007 REDD Methodology Modules in accordance with the VCS Methodology Approval Process, VCS Standard, VCS Program Guide and the VCS AFOLU Requirements.

The VM0007 methodology provides a series of modules and tools which form the basic framework for a complete REDD baseline and monitoring methodology. It now includes and integrates modules for Restoring Wetland Ecosystems (RWE) projects and Conservation of Intact Wetlands (CIW) in coastal areas. Identification of the most plausible VCS eligible activity is guided by a decision tree located in the REDD+MF module, which provides the overarching structure for the implementation of the VM0007 Methodology.

The purpose and scope of the methodology element first assessment was to evaluate whether or not the revisions to the methodology elements were prepared in line with VCS program requirements. ASTER GLOBAL’s assessment included a detailed review of changes related to the new RWE elements with regard to eligibility criteria, baseline approach, additionality, project boundary, emissions, leakage, monitoring, data and parameters, adherence to the project level principles of the VCS program (relevance, completeness, consistency, accuracy, transparency and conservativeness). ASTER GLOBAL’s assessment also included a detailed analysis of the methodology, literature reviews, technical reviews and Restore America’s Estuaries’ (RAE) responses to all non-conformity reports (NCRs) clarifications (CLs) and opportunities for improvement (OFIs).

The ASTER GLOBAL’s assessment team identified 47 NCRs/CLs/OFIs. All were addressed satisfactorily by Restore America’s Estuaries. These NCRs and CLs provided necessary clarity to ensure that the methodology was in compliance with VCS rules and requirements.

ASTER GLOBAL confirms all methodology assessment activities, including objectives, scope and criteria, level of assurance and the methodology adherence to the VCS Program and VCS Standard Version 3.7, as documented in this report, are complete. ASTER GLOBAL concludes without any qualifications or limiting conditions that the revised methodology element (VM0007 REDD Methodology

Modules) meets the requirements of VCSA. ASTER GLOBAL recommends that VCSA approve the revisions to the methodology element.

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1 INTRODUCTION

1.1 Objective

This methodology first assessment was performed to evaluate the likelihood that implementation of the methodology, would result in accurate calculations and appropriate eligibility criteria for GHG emission reduction/removal (ISO 14064-3:2006). This report summarizes the findings of the first methodology assessment of the Verified Carbon Standard (VCS) double approval process for a methodology element framework, hereafter referred to as the “Methodology” and consisting of individual methodology components, hereafter referred to as “Modules”. Restore America’s Estuaries., referred to as the “Methodology Developer”, has commissioned Aster Global Environmental Solutions, Inc. (Aster Global), referred to as the “Assessment Team” to perform an assessment of revisions to the VM0007 Methodology and associated Modules.

This report presents the findings of a qualified assessment team of auditors and experts in methodologies for GHG emissions or who have assessed the methodology and modules for compliance under the applicable rules of the Verified Carbon Standard. Section 3 below provides the assessment methods and criteria. Section 2.5 presents summary findings of the methodology assessment and Appendix B provides details of individual findings.

1.2 Summary Description of the Methodology

The VM0007 methodology provides a series of modules and tools which form the basic framework for a complete REDD+ baseline and monitoring methodology. The modules and tools were developed to work together for the purpose of quantifying GHG emission reductions and removals from avoiding unplanned (AUDD) and planned deforestation (APD), as well as afforestation, reforestation and revegetation activities (ARR), and for activities which occur on peatlands and are combined with peatland rewetting or conservation (WRC). The recent updates incorporate restoring tidal wetland ecosystem (RWE) projects and conserving tidal wetland ecosystem (CIW) projects into the REDD framework. Identification of the most plausible VCS eligible activity is guided by a decision tree located in the REDD+MF module which provides the overarching structure for implementation of the VM0007 Methodology.

2 ASSESSMENT APPROACH

2.1 Method and Criteria

This assessment is based upon standard auditing techniques in line with VCS Requirements to assess the correctness of the information provided. In accordance with VCS rules, a methodology assessment encompasses applicability conditions, project boundary, procedure for demonstrating additionality, procedure for determining baseline scenario, baseline emissions, leakage, quantification of net GHG emission reduction and/or removals, monitoring, data and parameters, and relationships to approved or pending methodologies. Per section 6.2 of the Methodology Approval Process, the scope of this methodology revision assessment encompassed the revised modules as well as how they fit into the broader VCS VM0007 Methodology. Further, the assessment team evaluated whether any provisions of the methodology might have impacted by

the proposed revisions.

The guidance documents used to assess the methodology revision were the:

- VCS Program Guide (v3.7 21 June 2017)
- VCS Standard (v3.7 21 June 2017)
- Program Definitions (v3.7 21 June 2017)
- Methodology Approval Process (v3.7 21 June 2017)
- Agriculture, Forestry and Other Land Use (AFOLU Requirements (v3.6 21 June 2017)
- AFOLU Non-Permanence Risk Tool (v3.3 19 October 2016)
- VM0007 – REDD Methodology Modules (REDD MF) (revisions being made to v1.5)

2.2 Document Review

Documents received 22 February 2017

- ADD-AM_v1.0_public comment.docx
- BL-TW_v1.0_public comment.docx
- M-TW_v1.0_public comment.docx
- VM0007 REDD+MF_v1.6_public comment.docx
- VMD0007 BL-UP_v3.3_public comment.docx
- VMD0016 X-STR_v1.2_public comment.docx
- VMD0017 X-UNC_v2.2_public comment.docx
- VMD0041 BL-ARR_v1.1_public comment.docx
- VMD0045 M-ARR_v1.1_public comment.docx

Documents received 27 March 2017

- SG_export.shx
- Butt_thesisUPDATE.docx
- MG_export.cpg
- MG_export.dbf
- MG_export.prj
- MG_export.sbn
- MG_export.sbx
- MG_export.shp
- MG_export.shp.xml
- MG_export.shx
- MPAS_export.cpg
- MPAS_export.dbf
- MPAS_export.prj
- MPAS_export.sbn
- MPAS_export.sbx
- MPAS_export.shp
- MPAS_export.shx

- SG_export.cpg
- SG_export.dbf
- SG_export.prj
- SG_export.sbn
- SG_export.shp
- SG_export.shp.xml
 - 01 Data
 - WCMC027_Metadata_v4.SOURCE_ID.atx
 - 14_001_WCMC027_Saltmarsh_pt_v4.CPG
 - 14_001_WCMC027_Saltmarsh_pt_v4.dbf
 - 14_001_WCMC027_Saltmarsh_pt_v4.prj
 - 14_001_WCMC027_Saltmarsh_pt_v4.sbn
 - 14_001_WCMC027_Saltmarsh_pt_v4.sbx
 - 14_001_WCMC027_Saltmarsh_pt_v4.shp
 - 14_001_WCMC027_Saltmarsh_pt_v4.shp.xml
 - 14_001_WCMC027_Saltmarsh_pt_v4.shx
 - 14_001_WCMC027_Saltmarsh_py_v4.CPG
 - 14_001_WCMC027_Saltmarsh_py_v4.dbf
 - 14_001_WCMC027_Saltmarsh_py_v4.prj
 - 14_001_WCMC027_Saltmarsh_py_v4.sbn
 - 14_001_WCMC027_Saltmarsh_py_v4.shp
 - 14_001_WCMC027_Saltmarsh_py_v4.shx
 - WCMC027_Metadata_v4.cpg
 - WCMC027_Metadata_v4.dbf
 - WCMC027_Metadata_v4.dbf.xml

Documents received 08 May 2017

- ACR AR of Degraded Lands v1.2M.pdf

Documents received 16 May 2017

- VMD0045 M-ARR_v1.1_ESI RD1_20170515.docx
- Mayer - 1994 - Surface area control of organic carbon accumulatio.pdf
- VCS-VMD0013-Estimation-GHG-Emissions-Biomass-Peat-E-BPB-2015-1.pdf
- 052 RAE-Silvestrum_VCS_Round 1 Findings_Final_20170515.xlsx
- ADD-AM_v1.0_ESI RD1_20170515.docx
- \BL-TW_v1.0_ESI RD1_20170515.docx
- M-TW_v1.0_ESI RD1_20170515.docx
- VM0007 REDD+MF_v1.6_ESI RD1_20170515.docx
- VMD0016 X-STR_v1.2_ESI RD1_20170515.docx
- VMD0017 X-UNC_v2.2_ESI RD1_20170515.docx
- VMD0041 BL-ARR_v1.1_ESI RD1_20170515.docx

Documents received 26 June 2017

- VMD0045 M-ARR_v1.1_ESI RD2_20170609.docx
- 052 RAE-Silvestrum_VCS_Round 2 Findings_Final_20170626 DRAFT.xlsx
- VM0007 REDD+MF_v1.6_ESI RD2_20170612.docx
- VMD0013 E-BPB v1.1 ESI-RD2 20170612.docx
- VMD0016 X-STR_v1.2_ESI RD2_20170613.docx
- VMD0017 X-UNC_v2.2_ESI RD2_20170613.docx

Documents received 11 July 2017 (Public comments from VCS site)

- Questions_methoology_VM0007.pdf
- WILDCOAST comments for VM0007 revision_0.pdf

Documents received 12 July 2017

- VMD0045 M-ARR_v1.1_ESI RD2_20170613.docx

Documents received 13 July 2017 – VCS Responses

- Response to Wildcoast.docx
- Response to South Pole.docx

Documents received 19 July 2017-VCS Responses

- Response to Wildcoast.docx
- Response to South Pole v2.docx

Documents received 24 August 2017 – VCS Responses

- VMD0045 M-ARR_v1.1_ESI RD2_20170613_AS.docx
- 052_RAE-Silvestrum_methvalreport_FINAL_v1_AS.pdf
- ADD-AM_v1.0_ESI RD1_20170515_AS.docx
- BL-TW_v1.0_ESI RD1_20170515_AS.docx
- M-TW_v1.0_ESI RD1_20170515_AS.docx
- VM0007 REDD+MF_v1.6_ESI RD2_20170612_AS.docx
- VMD0007 BL-UP_v3.3_public comment_AS.docx
- VMD0013 E-BPB v1.1 ESI-RD2 20170612_AS.docx
- VMD0017 X-UNC_v2.2_ESI RD2_20170613_AS.docx
- VMD0041 BL-ARR_v1.1_ESI RD1_20170515_AS.docx

Documents received 13 September 2017 -VCS Responses

- RAE Meth Report-Post VCS.docx

Documents received 22 September 2017-VCS Responses

- RAE Meth Report-Post VCS_2_2.docx

Documents received 02 March 2020

- M-TW_v1.0_SCS RD2_28FEB2020.docx"
- VM0007 REDD+MF_v1.6_SCS RD2_02MAR2020.docx"
- BL-TW_v1.0_SCS RD2_28FEB2020.docx"

Documents received 03 April 2020

- VMD0013 E-BPB v1.1 03JAN2020.docx"
- VMD0015 M-REDD, v2.1_RD2 SCS_28JAN2020.docx"
- VMD0017 X-UNC_v2.2_ESI RD2_27SEP2017 RD1_15DEC2017.docx"
- VMD0042 BL-PEAT v1.0_SCS RD2_23MAY2019.docx"
- VMD0044 LK-ECO v1.0 RD2 26JUL2018.docx"
- VMD0046 M-PEAT v1.0_SCS RD2_08NOV2019.docx"
- X-STR 2nd val changes.docx"
- ADD-AM_v1.0_ESI RD1_27SEP2017_SCS RD1_15DEC2017.docx"
- BL-ARR 2nd val changes.docx"
- BL-PL 2nd val changes.docx"
- BL-TW 2nd val changes.docx"
- BL-UP 2nd val changes.docx"
- M-ARR 2nd val changes.docx"
- M-TW 2nd val changes.docx"
- OneDrive-2020-04-07.zip"
- REDD+ MF 2nd val changes.docx"
- VMD0009 LK-ASP v1.2_RD2 SCS_17APR2019.docx"
- VMD0010 LK-ASU v1.1_RD2 SCS_03JAN2020.docx"

Documents received 03 April 2020

- BL-TW_v1.0_SCS RD2_09MAR2020

Documents received 01 May 2020

- VMD0007 BL-UP_v3.3_01NOV2019 CLEAN.docx"
- VMD0009 LK-ASP v1.3_17APR2019 CLEAN.docx"
- VMD0010 LK-ASU v1.2_03JAN2020 CLEAN.docx"
- VMD0013 E-BPB v1.2_03JAN2020 CLEAN.docx"
- VMD0015 M-REDD, v2.2_28JAN2020 CLEAN.docx"
- VMD0016 X-STR_v1.2_02JAN2020 CLEAN.docx"
- VMD0017 X-UNC_v2.2_15DEC2017 CLEAN.docx"
- VMD0041 BL-ARR_v1.1_02JAN2020 CLEAN.docx"
- VMD0042 BL-PEAT v1.1_23MAY2019 CLEAN.docx"
- VMD0044 LK-ECO v1.1_26JUL2018 CLEAN.docx"
- VMD0045 M-ARR_v1.1_02JAN2020 CLEAN.docx"
- VMD0046 M-PEAT v1.1_08NOV2019 CLEAN.docx"
- ADD-AM_v1.0_15DEC2017 CLEAN.docx"
- BL-TW_v1.0_09MAR2020 CLEAN.docx"
- M-TW_v1.0_28FEB2020 CLEAN.docx"
- VM0007 REDD+MF_v1.6_02MAR2020 CLEAN.docx"
- VMD0007 BL-PL_v1.3_01NOV2019 CLEAN.docx"

2.3 Interviews

The objective of the interview process was to resolve requests for clarifications, corrective actions and other outstanding issues which were required as part of the methodology revision assessment. After issuance of a round of NCRs/CLs, conference calls between the assessment team and the authors were arranged to reconcile understanding of the issues. As a guarantee of transparency in the resolution process, concerns raised and responses given were documented in greater detail, given in Section 3.5.

The official opening meeting was conducted on 13 March 2017 between representatives from the methodology developer with authority to approve the Methodology Assessment Plan; the Lead Validator and prAster Globaldent of ASTER GLOBAL. The agenda of the meeting consisted of review and mutual understanding of the components in the Methodology Assessment Plan including potential revisions, project timeframes and the standardized processes to solicit feedback from parties.

On 20 March 2017, a walk-through meeting was held, where the methodology developers generally went over the changes to the methodology and its modules with the assessment team. After confirmation of the Assessment Plan and the walk-through meeting, the methodology assessment audit process commenced and lead to a Round 1 of Non-conformance Reports (NCRs), Clarification Requests (CLs), and Opportunities for Improvement (OFIs). Additional interviews were arranged, as needed, after the authors addressed NCRs/CLs in subsequent versions of the methodology and reviewers required additional clarification on changes applied. The table below lists the individuals involved in the major meetings and their organizational affiliation for this first methodology assessment.

| Attendee | Affiliation |
|----------|-------------|
|----------|-------------|

| | |
|----------------------|-------------------------------|
| Shawn McMahon | Environmental Services |
| Igino Emmer | Silvestrum Climate Associates |
| Stephen Emmet Mattox | Restore Americas Estuaries |
| Richard Scharf | Environmental Services |
| Barbara Toole O’Neil | Adelante Consulting |
| Tony Poole | Environmental Services |

2.4 Assessment Team

The assessment team consisted of qualified individuals linked to the sectoral scope and technical areas of the methodology. The composition of the assessment team operated at several qualification levels:

- Lead Assessor (L)
- Assessment Team Member (TM)
- Assessment Expert (E)
- Assessment QA/QC (QA/QC)

| Team Member | Expertise/Experience |
|---------------------|--|
| Shawn McMahon (L) | Senior Project Manager, Lead Assessor, VCS WRC Non-Peatlands Expert. Approved to conduct third-party carbon sequestration validations and verifications under VCS (WRC expert). Specializes in third-party carbon offset validations and verifications, carbon sequestration project development, development and implementation of management plans for enhancement of carbon stocks, development of carbon and environmental asset tracking programs, and team management. |
| Dr. Guy Pinjuv (TM) | Senior Scientist, Lead GHG Validator/Verifier. Expertise lies in forest carbon growth modeling, carbon project development, forest offset project validation and/or verification and forestry related methodology assessments. Responsible for team management, client coordination, and performance of senior technical project management. Climate Action Reserve Forest and Urban Forest Project Lead Verifier. |
| Richard Scharf (TM) | Senior Soil Scientist, NCLSS, SC Soil Classifier. Over twenty-two years of experience in a variety of soils-related projects. Duties include managing and conducting soils work for wastewater projects, stormwater projects and wetland delineation. Provides expertise and experience on carbon offset projects/methodologies |

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| | associated with agricultural land management and/or soil carbon pools. |
| Matthew Perkowski (TM) | Project Forester and Forest Biometrician. Responsibilities include meeting the internal and external client objectives in the fields of forest inventory and sampling, growth and yield modeling, and directly in support of offset validation/verification projects. In addition, he is focusing on streamlining and developing quantitative tools for the GHG group to increase product service value for clients. |
| Eric Jaeschke (TM) | Project Forester and Remote Sensing Specialist. Duties include technical GIS and remote sensing support for carbon offsetting projects through validations/verifications under various rule sets, data analysis and field validations. |
| Kevin Markham (E) | Wetlands Expert/Assessment Team Member. A Vice President Globalident and Senior Manager for ASTER GLOBAL, Mr. Markham provides technical oversight and QA/QC for compliance with the CWA, CAMA, NEPS and ESA. He has extensive experience in wetland delineation, assessment, mitigation planning and permitting. |
| Barbara Toole O'Neil (E) | VCS-Standardized Methods Expert/Validation Team Member. Since 2012, Ms. Toole O'Neil has focused on climate services, corporate responsibility and energy efficiency projects from the industrial manufacturing to ecosystems services sectors. Her work responsibilities have addressed a wide range of environmental issues from preparing inventories or offset project documents to assessing methodologies submitted to the Verified Carbon Standard (VCS) (forestry to energy efficiency); supporting the development of the ARB Mine Methane Capture Protocol as part of the working group, managing energy efficiency surveys and measurement projects on farms, validating/ verifying inventories and carbon offset projects, corporate social responsibility auditing, developing governance for sustainability non-profits, to writing a social standard to assess the impact of environmental projects (carbon, water, forestry, agriculture) on the quality of life for women in emerging third world countries. |
| Tony Pooley (TM) | Methodology assessment trainee. |
| Janice McMahon (QA/QC) | President of Aster Global Environmental Solutions, Inc. Specializes in natural resource management projects including carbon sequestration feasibility assessments, development/implementation of management plans for enhancement of ecosystem services, assessment of GHG emissions and reductions, development of environmental asset tracking programs, GHG validations and verifications, |

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| | <p>endangered/ threatened species assessments, habitat management plans, and integrated ecosystem services plans. Responsible for leading the Forestry, Carbon, and GHG Services Division, which includes client and team coordination, proposal preparation and review, marketing presentations, maintenance of ASTER GLOBAL’s ANSI accreditation and management System, and quality assurance and quality control for projects in the United States as well as the international market.</p> |
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2.5 Resolution of Findings

The process of methodology revision assessment involved 3 formal rounds of evaluation by the assessment team and resulted in a methodology version which was in conformance to VCS rules. Findings related to corrective action, clarification requests or other findings were resolved during communication between the assessment team and the methodology developer. More specifically, where noted by the assessment team, the methodology developer implemented corrective actions by amending methodology modules and providing written clarification responses. Types of findings were characterized in the following manner:

Non-Conformance Reports (NCRs) were issued as a response to material discrepancies in a part of the methodology and generally fell into one of the following categories:

- Non-conformance to a VCS guiding document listed in Section 2.1
- Internal consistency among modules was lacking
- Mathematical formulae in modules were incorrect
- Additional information was required by the assessment team in order to confirm reasonable assurance for compliance

Clarifications (CL) were issued when language within a module needed extra clarification to avoid ambiguity.

Opportunities for Improvement (OFI) were issued to the methodology developer when an opportunity for improvement was identified.

During the course of the methodology revision assessment, 47 NCRs, CLs, and OFIs were identified. All NCRs/CLs were satisfactorily addressed. The NCRs/CLs provided necessary clarity to ensure the project was in compliance with the requirements of the VCS for GHG projects and the selected methodology. Detailed summaries of each finding, including the issue raised, responses and final conclusions are provided in Appendix B. Selected important findings and points of discussion from all components of the methodology assessment are presented in the table below.

| Finding/Discrepancy | Resolution |
|---------------------|------------|
|---------------------|------------|

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| <p>It is not clear if the methodology used a standardized method for additionality and a project method for the crediting baseline.</p> | <p>Test was added that is sufficient to address this item. The module now states "This module provides a determination, based on an activity method, of additionality for tidal wetland restoration and conservation of intact wetland project activities that meet the applicability conditions set out in Section 4 below. A project method must be used for the crediting baseline. "</p> |
| <p>Non-human induced elevation of non-vegetated wetlands is not discussed in BL-TW or the proposed update of VM0007.</p> | <p>Modules BL-TW and X-STR were revised to require project developers to account for naturally formed vegetated wetlands due to elevation change in the baseline, and to account for bathymetric changes that might expand seagrass meadows in the baseline case, respectively.</p> |
| <p>While VCS specifically states that expert opinion may be used to justify performance benchmarks and other elements, they do not specifically state that it can be used in activity methods to demonstrate activity penetration. Please show how expert opinion is permissible to use in place of the required APy equation.</p> | <p>VCS has provided a communication to RAE and ASTER GLOBAL confirming that the use of expert opinion is allowable.</p> |

3 ASSESSMENT FINDINGS

The proposed revisions to the VM0007 methodology element were found to be in full compliance with the principles set out in the VCS Standard and other VCS rules and requirements. The new modules and revisions enlarge the eligible environments and activities to be more broadly applicable for a variety of project types including restoring and conserving wetland ecosystems in coastal and inland wetlands. New baseline, leakage, stratification, uncertainty and monitoring modules are consistent with best practice and scientific consensus by following previously validated methods for determining emissions. The assessment team evaluated adherence of the methodology to the VCS Standard and further concluded that the methodology references specific VCS approved modules. Applicable VCS approved tools are appropriately invoked for determining project significance, baseline, additionality and risk.

The assessment addressed specific issues that arose in the methodology which are pertinent to the principles set forth by the VCS Standard, including relevance, completeness, consistency, accuracy, transparency, and conservativeness.

3.1 Relationship to Approved or Pending Methodologies

The methodology and revision and accompanying modules fit into the modular framework where modules are interchangeable among various approved VCS methodologies. The revision is directly related to previously approved versions of the methodology VM0007 v.1.5 and builds upon a strong modular structure.

3.2 Stakeholder Comments

VM0007 REDD Methodology Modules were posted for comments from 21 February 2017 to 23 March 2017. Two sets of comments were received: one from South Pole Group, the other from Wildcoast.

The methodology developers responded to each comment appropriately. Several of the comments caught mistakes of one kind or another, which were changed in later draft versions of the methodology. Some of the comments appeared to stem from the confusion that sometimes occurs when using a modular methodology. Some comments from Wildcoast may stem from unfamiliarity with the requirements of carbon registries in general, and VCS in particular.

The developer’s responses to the comments are reasonable and sometimes resulting in a change in the document. In two cases, the developers offer to communicate directly with the commenter to gather more background to answer the questions.

Comments and Developer Responses

| South Pole Comment | Response | Validator Remarks |
|--|---|---|
| If there is a REDD combined with another activity, is it necessary to do the additionality for each activity (REDD and also the other activities)? | All WRC projects, whether or not combined with other categories, are deemed additional. We will clarify this in the MF and the ADD module. | Section 7 of REDD+MF and the associated modules adequately explain how additionality is determined and ensures that demonstration of additionality is applied separately to each project activity |
| If a wetland is not a peatland or tidal wetland (for instance inland wetlands), an inland wetland can be included to this methodology? | The methodology only covers peatlands and tidal wetlands. For other types of wetland (eg island wetland) the procedures would have to be screened with the necessary expertise. Our expertise is limited to peatland and tidal wetland. | The description provided by the methodology developer is sufficient. The methodology is sufficiently descriptive in its geographic limitations. Inland wetlands are not permitted. |
| What is an intact wetland? | There is no strict definition of intact wetland but the AFOLU requirements refer to such wetland as intact or partially altered while still maintaining their natural functions. (Addition from | The methodology developers description is sufficient given the lack of formal definition in the VCS documentation. |

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| | VCS: ‘Degradation’ is defined in the Program Definitions. Although ‘degraded forest’ is not specifically defined, it would be a forest that has undergone degradation per the definition in the Program Definitions (i.e. forest land with a reduction in canopy cover and/or carbon stocks due to human activities such as animal grazing, fuelwood extraction, timber or removal or other such activities, but that has not been converted to non-forest land.) | |
| Which criteria are used to prove that a forest is degraded or not? | The methodology does not provide a definition of degraded forest. It uses the term as per the AFOLU requirements and assumes that a degraded forest has lost in part or completely its natural functions. | Again the VCS program definitions do not detail a definition for “degraded forest” and the response is sufficient. |
| According to the methodology, enrichment activities in a degraded wetland is an ARR activity? | As long as enrichment is not IFM (ie when forest management is in place in the baseline) this is indeed ARR. | Basic difference between IFM and ARR. |
| In Table 3, column 3, line 4 from REDD+MF, “Avoiding deforestation/forest degradation” is only referring to peatlands or to all wetlands? Why wetland degradation is separated from forest degradation? | The table should be read as follows: if the pre-project conditions is a drained peatland or a degraded tidal wetland with a land cover that is forest with deforestation or with forest degradation, the project activity may be peatland rewetting or tidal wetland restoration in combination with avoiding deforestation or forest degradation. This implies a combination of a restoration activity (wetland) with a conservation activity (forest). | Two project types is logical in this circumstance. |
| If it is possible to use enrichment as ARR, how this can be monitored? How is the carbon stock monitored? Is there a module or SOP to monitor it? | GHG accounting in ARR, whether replanting, enrichment or other, is a matter of comparing forest growth in the baseline and the project scenario. The baseline is not monitored and must be quantified ex ante. | The question seems beyond the scope of the methodology revision. |
| Table 11 from REDD+MF: Refers to AUDD, APD and REDD as three different categories. However, AUDD and APD are | This table is just a translation of language in the BL-PL and BL-UP modules when they are used for CIW | Agreed that a new classification is not being proposed by the methodology here. |

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| included to REDD projects. This is not clear. Can you please specify it or provide some clarification? | activities. The table does not intend to propose a classification. | |
| Conservation of intact wetlands are included in the methodology, but this is not mentioned in the modules of the methodology. Therefore, how can we include Conservation of Intact Wetland in this methodology? | This is determined in Table 4 of REDD-MF. CIW is represented in the top row as AUWD and APWD. | Agreed that table 4 addresses. |
| Table 3 from REDD+MF is not consistent/clear: (i)the methodology has a baseline for carbon estimation for restoration activities, but does not include baseline for REDD; (ii) the suggestion is to separate the drained peatland to the degraded tidal wetland and the undrained peatland to the intact tidal wetland to avoid confusion to the user. | i) The baseline for REDD is covered in modules BL-UP and BL-PL; ii) Table 3 distinguishes various AFOLU project activities, not whether terrain is drained, undrained, degraded or intact. Each project activity has a set of mandatory and optional modules. We do not see any inconsistency here. | Agreed that each project activity is sufficiently delineated within the existing modules. |
| There is no baseline for degraded wetlands in the module for REDD to avoid unplanned deforestation and degradation. | In the case of avoiding wetland degradation in combination with REDD, Table 3 points to the mandatory use of certain baseline modules. The user must select AUDD, APD or AD as REDD sub-categories, as well as AUWD or APWD as CIW sub-categories, and the table then tells which modules are relevant. Eg for AUDD combined with AUWD in tidal wetlands, baseline modules BL-UP and BL-TW are mandatory. | The question is not understood as the baseline for each type of category is defined within the modules. |
| The module BL-UP mentioned degradation for tidal wetlands in the title. However, it is not clear how the baseline and monitoring is performed for degradation. | The principles applied in BL-UP for determining deforestation and forest degradation baselines are used mutatis mutandis for wetland degradation. This is explained in Section 8.1.3 while the difference in language is outlined in Table 11. | The response is sufficient. |
| Modules BL-TW and M-TW include restoration, but not conservation. | This is not the way it works. BL-TW and M-TW provide procedures for quantification of emissions and removals that cover both degradation, restoration and avoided degradation | Again possibly the intent of the question is not understood as the procedures for |

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| | scenarios. While BL-UP and BL-PL help determine the baseline scenarios, BL-TW and M-TW help quantify emissions and removals in those scenarios. | quantification appear appropriate. |
| BL-TW: When you mention degradation, are you only referring to soil degradation? | We refer to degradation of tidal wetland and this is not limited to soil degradation. It can also pertain to eg changes in hydrology. | Explanation appears sufficient as degradation can also impact hydrology. |
| M-TW | | |
| There is no module for the risk of degradation in the soil and this is one of the main sources of emission. Therefore, the project cannot claim for the avoided emission from soil degradation. How can I get carbon credits for conserving an intact wetland? If the conservation of intact wetland is not included in the methodology, this need to be excluded. In addition, in the module M-TW the activities for intact wetlands (e.g. improving water management on drained wetlands, maintaining or improving water quality for seagrass meadows, protecting at-risk wetlands) is not included. | This is not covered in the monitoring module for the project scenario. In baseline module BL-TW you will find procedure for quantifying emissions related to soil degradation. Please note that your wording (quote) activities for intact wetlands (e.g. improving water management on drained wetlands, maintaining or improving water quality for seagrass meadows, protecting at-risk wetlands) (unquote) is in part incorrect. Activities for intact wetlands can only be conservation, not improving conditions. | The argument provided by the methodology developer is accurate. |
| Page 8, Equation 6: there is a parenthAster Globals missing in the equation. | Thanks for spotting this. We will remove the parenthAster Globals. | ParenthAster Globals removed. It was discovered that in fact there was an extra parenthAster Globals that needed to be removed. |
| Number and location of plots for monitoring purposes? This is not clear in the module. Also, the frequency of measurement is missing. | Sample size is not provided by the monitoring module but is governed by procedures in module X-UNC. Frequency is provided in the parameter tables in Section 6.2. | The response is accurate, sample size is determined through application of X-UNC. |
| According to the methodology, it is possible to monitor the first time and then wait 10 years until the next one. Is this possible? Please, provide clarification on it. Specially on monitoring frequency vs. verification | The methodology needs to comply with methodology requirements. The monitoring interval and its relation to verification is governed by project requirements. Please see there. | The methodology developer correctly refers the commenter to the VCS Standard (i.e. project requirements). |
| X-STR | | |
| Chapter 5.2. Third paragraph, line 3 mentioned to refer to "4(a) | Thanks for spotting this. We will remove this reference. | Reference removed in later versions. |

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| below”, but 4(a) does not appear in the text. | | |
| Page 11: Equation 8. VC is missing in the explanation of the parameters. | Will be added. | VC was added to the list of parameters. |
| BL-ARR | | |
| Equation 1: how should the project owner need to monitor the baseline? Is it necessary to measure plots in 2 different times? Or why do you use delta in the formula as a change? Please, have in mind that some projects are retroactive and this is not that easy to monitor when the project activities started already. | There is no monitoring of the baseline. The baseline is quantified ex ante. Carbon stock change is a proxy to CO2 emissions and hence the delta is used. In the baseline, a CO2 emission can be quantified by taking the difference in the forecast of C stock of two points in time. | The methodology developer correctly states that the baseline is not monitored. |
| Which land cover should have the baseline? Because it says that can include degraded land. How can we define the degraded land? | A suited area can support a higher tree/shrub C stock than in the baseline achieved through ARR activities. Degraded land is a well-established term in forestry and land use and expert judgement should be sufficient to make the claim. | The VCS program definitions treat this issue similarly, referring to degraded lands within the definition of forestry but not defining. The inference being that the term “degraded” is understood and assessed for each project at project validation. |
| Why do the peatland need to be drained to be eligible? And why is it not possible to include an undrained peatland without forest cover? | The applicability conditions require the peatland area to be degraded, either seen from its forest condition or from its state of drainage, which seems logical for a project activity that intends to improve the situation. Non-forested peatland thus must be drained. This avoids undrained natural non-forested peatland to be afforested. | Explanation from the methodology developer regarding drained peatland is sufficient |
| M-ARR: Why is necessary to use LTA for conservation projects? We believe this only needs to be used when harvest take place. | This module is not for conservation but for ARR. The LTA pertains to harvesting, as pointed out in the heading “Long-term average in case of harvesting”. | LTA is only relevant to projects including afforestation. |
| M-ARR: Why soil is not included anymore? | Thanks for spotting this. This also points to a problem with Table 5 in REDD+ MF. Both BL-ARR and M-ARR are focused on biomass compartments, since modules CP-S, PEAT and TW cover soil. We will clarify how litter, deadwood and soil | Soil was added to the later versions of the module. |

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| | are accounted for in both terrestrial and wetland situations. | |
| X-UNC: The title does not mention WRC. The content of the modules should be consistent with the title. | The “REDD+” is intended to cover all activities and situations, as in the title of the framework document “REDD+ MF”. | Agreed that “REDD+MF” is all encompassing and sufficient to include WRC within its scope. |
| BL-UP: The title is not very clear. Deforestation can be included to wetland? For instance, page 12 point b., mentioned “deforestation agents”. According to the title, deforestation cannot be included to wetland. Please, clarify. | For both forested terrestrial sites and wetlands, the module provided procedures for accounting the loss of forest cover in the baseline. The module, however, also provides procedures for wetland degradation. For example, a salt marsh (ie. without forest cover) may degrade or get lost in the baseline, and this can be quantified using this module and taking account of translation table 1. | The procedures are sufficient within the module. |
| If deforestation is allowed in wetlands, there is not enough detailed guidelines for the baseline. | See above. | See above |
| Wildcoast Comment | Developer’s Response | Validator Remark |
| In general, I think that the methodology could include clearer and easy to use decision trees, both for the reader and for potential project dAster Globalgners. This will expedite the decision process of whether to start a carbon credit project or not. Also it would be useful if the methodology uses a simpler language whenever possible and includes a quiz to evaluate the viability of potential projects. | As we strive to satisfy the user’s need for an understandable and –easy-to-use document, we must find a middle ground between, on one end, simple language and more extensive narratives, and bullet-pointed instruction combined with equations, on the other. We argue that a methodology is not a complete tool for assessing project viability and that a methodology – in essence – needs to meet VCS methodology requirements. We suggest VCS to communicate with Wildcoast about what can be expected form a methodology. | Agreed that the scope of the revision was not to make all portions of the methodology more reader friendly, rather to include the WRC scope which has been accomplished. The use of the methodology as a decision tool as is being requested here should be taken up by the commenter with the VCS. |
| The methodology seems to be applicable to a mangrove conservation project in Mexico. However, after reading it, there is still some uncertainty to assess the probability of project success (i.e. knowing if carbon credit for sale are going to be produced). It seems that it is necessary to | See response above. | See above. |

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| <p>actually apply and invest on the methodology to make sure if an specific project will meet all conditions required by VCS. Maybe a quiz to evaluate project feasibility can be included to help project proponents.</p> | | |
| <p>For the reader, especially for those new on the carbon credits world, it is not easy to follow the first decision tree to define the type of project to be developed. We suggest using more mainstream language and whenever possible provide clear examples of projects and/or activities.</p> | <p>See response above.</p> | <p>See above.</p> |
| <p>Also, it seems that a CIW project must be always combined with a REDD project, but there is uncertainty if a CIW project can stand by itself. Those, is it difficult to determine which models and tools to use or when to use them. The methodology and decision tree should be clearer about this.</p> | <p>This is helpful feedback. CIW can be a stand-alone project activity. In fact, REDD and ARR can be too. We will make this explicit in the language of section “Identification of the Most Plausible VCS-eligible Activity(ies)” in chapter 2. Note that Table 3 indicates that RWE and CIW can be done not combined with another category.</p> | <p>Appropriate revision added.</p> |
| <p>A clear definition/description with examples should be provided for UPWD and APWD.</p> | <p>Definitions of these categories are provided in the VCS AFOLU Requirements. The methodology assumes knowledge and understanding of VCS Standard, AFOLU Requirements and Program Definitions.</p> | <p>Agreed. The AFOLU sufficient describes all project types.</p> |
| <p>With the information provided, it is difficult to decide if a leakage area and leakage avoidance activities are needed for a specific WRC project.</p> | <p>This comment re leakage is not specific enough for an appropriate response. We will be happy to communicate directly with Wildcoast.</p> | <p>Agreed that insufficient detail was provided by the commenter.</p> |
| <p>Page 15-16 and other parts of the ms, the following paragraph is confusing “Baseline agents of deforestation must: (i) clear the land for tree harvesting, settlements, crop production (agriculturalist) or ranching or aquaculture, where such clearing for crop production or ranching or aquaculture does not amount to large scale industrial agriculture or aquaculture activities*; (ii) have no documented and uncontested legal right to deforest the land for</p> | <p>See response above</p> | <p>See above.</p> |

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| <p>these purposes; and (iii) be either rAster Globaldents in the reference region for deforestation or immigrants. Under any other condition this methodology must not be used". We suggest to use a simpler language and/or provide examples.</p> | | |
| <p>On page 16, the conditions contained in Modules BL-TW and M-TW that also apply to avoiding unplanned wetland degradation, should be described in this document to expedite the review and decision making for project dAster Globalgners (potential new partners for VCS).</p> | <p>In REDD+ MF we include conditions that apply across the board for each eligible project category. In modules, we include applicability conditions that apply to that specific module. To us this seems the best way to structure applicability conditions and to avoid overwhelming the user when reading the framework document.</p> | <p>The public comment refers to a stylistic preference. The applicability condition is sufficiently addressed within the module.</p> |
| <p>On page 20, number 5.1.4: The acronyms for avoiding planned and unplanned wetland degradation are mixed up.</p> | <p>Thanks for spotting this.</p> | <p>Acronyms in 5.1.4 are no longer mixed up.</p> |
| <p>On page 22, the table for carbon pools of REDD project activities is missing (Table 4).</p> | <p>Section 5.3.2 REDD points out: "The carbon pools (and corresponding methodology modules) included in or excluded from the boundary of REDD project activities are shown in Table 4." This is a left-over of the first version of VM0007. In subsequent versions of the methodology it was decided to not duplicate the required information on carbon pools for REDD.</p> | <p>The justification provided to avoid duplication is sufficient.</p> |
| <p>On page 18, it would be useful to know if data, statistics and geographic information, can be taken from official governmental reports or published peer-reviewed science for the project area, and if so, what are the conditions to be able to use published technical information.</p> | <p>Point appreciated. We will consider if such information can be taken from official governmental reports or published peer-reviewed science for the project area.</p> | <p>Page 18 indicates "The project proponent must demonstrate (a), (b) or (c) above, based on verifiable information such as laws and bylaws, management plans, annual reports, annual accounts, market studies, government studies or land use planning reports and documents." The appropriateness of the source is determined by the validator on an individual basis for each</p> |

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| | | project as the scope was determined to be too broad to provide sufficient criteria. |
| On page 24 the Table numbers seems to be defaced/wrong. | We do not see this problem in our document version (the one for public review obtained from VCS) | The issue was not able to be found in the version of the methodology provided to the validators. |
| On sections 6-8 a decision tree should be provided to help the reader understand and decide what modules to use. It would be very useful. | See response above. | The comment is unclear. A decision tree and table 4 “Determination of When Module/Tool Use is Mandatory (M) or Optional (O)” is included in section 2 to address this issue. |

3.3 Structure and Clarity of Methodology

The VM0007 REDD Methodology Modules were reviewed by the assessment team for clarity and logical consistency in accordance with VCS rules for methodology assessments (Methodology Approval process v3.6, 25 March 2015). Methodology developers have followed the VCS templates closely and have included the specific criteria and procedures in the appropriate sections. The terminology used in the revised methodology element is consistent with the VCS Program and GHG accounting and language chosen is precise. Definitions are defined at the beginning of modules to reference the reader. Specific key terms were used appropriately; must, should, and may to indicate a firm requirement and permissible or allowable options, respectively. Key words for outlining mandatory requirements are used consistently for permissible or allowable options. Criteria and procedures for the methodology were written by the methodology developers in a clear, concise and coherent manner to allow the project to be unambiguously audited by the assessment team. The notation of the methodology makes sufficient use of VCS rules and procedures. Overall, it is of the assessment team’s opinion that the structure of the document meets the strict requirements of the VCS Program.

3.4 Definitions

The key terms defined in the methodology element modules are presented clearly and appropriately in a definition section at the beginning of the document for ease of use by methodology developers. The comprehensive list of terms relevant to the methodology is ordered alphabetically and definitions for acronyms are provided. Definitions of key terms are presented concisely and assist the reader in comprehension for effective implementation of the methodology.

3.5 Applicability Conditions

The methodology includes the following project category level applicability conditions to ensure adherence to VCS rules and requirements, and to address specific issues that arose in the

methodology assessment process. This assessment determined that the applicability conditions contained within the methodology are appropriate, adequate and in compliance with the VCS rules. The following table summarizes applicability conditions as written, changes made during the revision of the methodology, and the final evaluation of those changes during the assessment.

| Applicability Conditions (REDD+MF) | Assessment Team Findings |
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| a. <u>All activity types</u> | |
| All land areas registered under the CDM or under any other carbon trading scheme (both voluntary and compliance-oriented) must be transparently reported and excluded from the project area. | The methodology ensures land areas are transparently reported in compliance of AFOLU Requirements and this applicability condition is sufficiently clear to determine if a project meets the condition. |
| b. <u>REDD activity types</u> | |
| Unplanned deforestation: Baseline agents of deforestation shall: (i) clear the land for tree harvesting, settlements, crop production (agriculturalist) or ranching or aquaculture, where such clearing for crop production or ranching or aquaculture does not amount to large scale industrial agriculture activities (ii) have no documented and uncontested legal right to deforest the land for these purposes; and (iii) are either rAster Globaldent in the Reference Region for Deforestation or immigrants. Under any other condition this methodology shall not be used. | This applicability condition is written in a clear and precise manner to ensure that projects are able to properly evaluate whether baseline agents for unplanned deforestation are appropriate for the methodology. |
| Planned deforestation/degradation: Conversion of forest lands to a deforested condition must be legally permitted. | This applicability condition addresses the practicality of project activities and is written in such a manner so as projects are not able to fall out of line of the condition. |
| Avoiding Forest Degradation (fuelwood/charcoal): Fuelwood collection and charcoal production must be “non-renewable” (as defined in Module BL-DFW) in the baseline period. If degradation is caused by either illegal or legal tree extraction for timber, this framework cannot be used. | The applicability condition is practical to include in order to account for carbon loss due to baseline forest degradation. The applicability condition allows for a demonstration of conformance at time of project validation and ensures projects are unable to fall out of line with the condition. |
| c. <u>ARR</u> | |
| Procedures for estimating carbon stock changes in ARR project activities are provided in BL-ARR and M-ARR. In strata with drained, organic soil, ARR activities must be combined with rewetting. Where exclusion of project activities on wetlands | This applicability condition is written in a sufficiently precise manner to direct projects to use of the appropriate modules for estimating carbon stock changes in ARR project activities. Further, AFOLU Requirements section 4.2.20.2 specifies ARR activities involving |

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| <p>exist in the applicability conditions of methodologies and tools, such applicability conditions can be disregarded for the purpose of their use within this Methodology, as quantification procedures for peat and tidal wetland soil are provided in BL-PEAT, M-PEAT, BL-TW and M-TW.</p> <p>Project activities where at least a part of the project activity is implemented on organic soils or wetlands and that wish not to account for soil emissions, intentional manipulation of the water table is not allowed (i.e., the project activity shall not involve manipulation of hydrology or otherwise affect hydrology), no more than 10% of their area may be disturbed as result of soil preparation for planting and species planted are restricted to those likely to have occurred under historic natural forest conditions in the project area,</p> <p>The with-project scenario does not involve the application of nitrogen fertilizers.</p> | <p>nitrogen fertilization are not eligible project activities.</p> |
| <p>d. <u>WRC Activity Types</u></p> | |
| <p>Project activities that lower the water table, unless the project converts open water to tidal wetland or improves the hydrological connection to impounded waters, are ineligible.</p> <p>Changes in hydrology must increase SOC, or if salinity is changed to reduce CH4 emissions, change in SOC stock must be accounted for.</p> <p>If hydrological connectivity of project area with adjacent areas lead to increased emissions outside project area, project is ineligible.</p> <p>Project activities including the burning of organic soil are ineligible.</p> <p>Projects including the use of nitrogen fertilizers are ineligible.</p> | <p>This condition is consistent with and ensures that a project satisfies all the requirements in AFOLU sections 4.2.16 - 4.2.19. The methodology developer chose to address peatland rewetting exclusively and allows it to be combined with the ARR criteria. See also AFOLU Requirements v3.2 for specifics on subcategories for rewetting drained peatlands (RDP) and conservation of undrained and partially drained peatlands (CUPP).</p> <p>Per AFOLU-WRC section 4.6.20 there can be no significant hydrological effect on adjacent lands, either by using a large enough buffer or physical barriers. The water table depths in adjacent lands will be monitored to detect ecological leakage.</p> |

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| <p><u>RWE Project Activities</u></p> | |
| <p>Peatland Rewetting: Projects that reduce fire on peatlands that do not include rewetting are ineligible.</p> <p>RWE projects in combination with ARR activities must include rewetting unless it is a tidal system where the tidal system is restored or continues to be in place.</p> | <p>Satisfies AFOLU requirement 4.2.19 1) b.</p> <p>Combines requirements of 4.2.19 1) a) ii) and 4.2.20 1)</p> |
| <p>Tidal Wetland Restoration may include the following project activities:</p> <p>Creating, restoring and/or managing hydrological conditions.</p> <p>Altering sediment supply.</p> <p>Changing salinity characteristics</p> <p>Improving water quality.</p> <p>Reintroducing native plant communities.</p> <p>Improving management practices.</p> <p>Prescribed burning of herbaceous and shrub aboveground biomass may occur.</p> | <p>Relates to the requirements of 4.2.19. RWE projects generally revolve around activities that increase SOC or increase carbon in biomass. Changing salinity may reduce methane emissions.</p> |
| <p>CIW (conservation of intact wetlands) projects are eligible under the following conditions:</p> <p>AUWD: Baseline agents of degradation cause an alteration in the hydrology of the project area, have no documented, uncontested legal right to degrade and are rAster Globalidents or immigrants in the reference area.</p> <p>APWD: Conversion of intact wetlands to a degraded condition must be legally permitted.</p> <p>Peatland Conservation (both AUWD and APWD): REDD project activities on peatland</p> | <p>Applicability conditions describes the difference between planned and unplanned degradation – planned degradation is a legal activity, according to requirement 4.2.19.</p> <p>By AFOLU requirement 4.2.19, projects on peatlands may not lower water table depth.</p> <p>The final applicability conditions reduce or eliminate leakage.</p> |

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| <p>that increase drainage are ineligible.</p> <p>Additional conditions for tidal wetland conservation projects (both AUWD and APWD):</p> <p>Activities may include protecting at-risk wetlands, improving water management on drained wetlands, maintaining/improving water quality for seagrass meadows, recharging sediment to avoid drowning of wetlands and creating accommodation space for wetlands migrating with sea-level rise.</p> <p>The area is free of any land use that could be displaced outside the project area OR the land use could be displaced outside the project area, but baseline emissions for this use are not accounted for, OR the area is under a land use that will continue during the project crediting period</p> | |
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3.6 Project Boundary

The VCS Standard requires that the methodology establish criteria and procedures for describing the project boundary and identifying and selecting optional carbon pools, i.e. sources, sinks, and reservoirs relevant to the baseline and project scenarios. Procedures to quantify emissions are appropriately included in all new and revised methodology modules for all relevant pools and sources.

The methodology appropriately addresses the establishment of spatial, temporal and gaseous boundaries to meet VCS AFOLU Requirements for REDD, ARR, and WRC project categories and applicable to AUDD, APD, Degradation (fuelwood/charcoal) project scenarios. Mandatory and optional pools in this methodology are confirmed suitable based on the choosing of appropriate modules for a project specific methodology.

The spatial boundaries in this methodology were assessed for conformance to VCS rules and found to be sufficiently detailed, appropriate, and adequate for project scenarios and in compliance with AFOLU Requirements section 4.2.14. The assessment team reviewed accounting procedures of effects of sea -level rise on project boundaries for WRC project activities in tidal zones. The procedures provided in Module X-STR were found to be in compliance with VCS rules and requirements (such as the conservative use of default factors and IPCC guidance). Spatial boundaries with respect to sea level rise were also assessed in Module X-STR, where the project proponent is required to provide a projection of relative sea-level rise within the project area based on IPCC regional forecasts or peer-reviewed literature applicable to the region. In addition, the project proponent may also utilize expert judgment.

Similarly, temporal boundaries were reviewed within the context of VCS rules and found to be detailed and sufficient. The revised methodology with respect to the WRC project scenario, was found to appropriately account for the Peat Depletion Time (PDT) and Soil organic carbon Depletion Time (SDT) in the baseline scenario. This is the temporal period during which the project can claim emission reductions from rewetting, restoration or conservation. The review team confirmed that revised procedures for determining the PDT or SDT are provided in Module X-STR. The methodology further defines temporal boundaries according to project category for historical reference period, project crediting period, and monitoring period. Significant sources of gaseous emissions accounted for are in compliance with AFOLU Requirements sections 4.3.19, 4.3.20, and AFOLU WRC requirements 4.5.25.

The methodology allows for flexibility in selecting carbon pools depending on project category and associated scenario or otherwise demonstrable conservative exclusion. The assessment team evaluated the appropriateness of mandatory or optional carbon pools and sources of GHG for project scenarios under the methodology and determined the project developers' choices were justified. The assessment team concludes that procedures outlined in the methodology for selection of pools, sources, sinks, and reservoirs are clearly specified and suitable for the project activities covered by the methodology.

3.7 Baseline Scenario

The determination of the most likely baseline scenario is essentially unchanged from the previous version. The existing procedures are appropriate given the revision for WRC activities, because WRC activities are eligible to apply the activity method for determining additionality per the VCS standard 4.1.11. The revised module ADD-AM provides a determination, based on an activity method, of additionality for tidal wetland restoration and conservation of intact wetland project activities that meet the applicability conditions set out in Section 4 of the methodology. The baseline scenario for WRC project activities is determined through a Project method using the module T-ADD, and these procedures are appropriate because they are also required per 4.1.11. The determination of the most likely baseline scenario for all other project activities is determined through the use of T-ADD, the CDM combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities, with the following understanding:

From Table 10 of VM0007:

| Where the tool refers to: | It must be understood as referring to: |
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| A/R, afforestation, reforestation or forestation | REDD, ARR or WRC project activity |
| Net greenhouse gas removal by sinks | Net greenhouse gas emission reductions |
| CDM | VCS |
| DOE | VVB |
| TCERs, ICERs | VCUs |

The tool contains steps to select the most conservative baseline scenario depending on the amount of information available to generate baseline estimations. Applying the CDM tool appropriately allows for transparent identification of baseline scenarios and encourages conservative baseline net greenhouse gas removals by reductions, further it is appropriate for use with WRC projects as there are no additional requirements for assessing additionality for this project type in section 4.2 – 4.6.22 of the AFOLU WRC requirements.

3.8 Additionality

Tidal wetland conservation and restoration project activities and peatland rewetting use an activity method for demonstrating additionality. The new module ADD-AM (Demonstration of Additionality of WRC projects) is used. It involves two steps:

1. Demonstrate regulatory surplus, in accordance with the VCS Standard.
2. Applicability conditions represent the positive list.

ASTER GLOBAL used a standardized methods expert in the assessment of the activity method, this expert added value to the overall assessment of the new activity method module by reviewing requirements for the use of the activity method including: VCS Standard requirements 4.1.10 – 4.1.12, 4.3.7- 4.3.10, and 4.6.8 – 4.6.9. The demonstration of regulatory surplus and conditions that represent a positive list. Justification for the positive list is included in an appendix. The positive list was determined to be appropriate for tidal wetland and sea grass restoration activities in VM0033, where the level of restoration was determined to be 2.74% or less in the U.S. Expert opinion was used to justify extension of the positive list for restoration activities to the rest of the world¹. ASTER GLOBAL determined that the expert (Pieter van Eijk) was qualified to provide an expert opinion on expanding the positive list globally as he is a Masters educated ecologist with 10 years of international experience in coastal wetland restoration, with many peer reviewed publications on the topic.

Additional analysis, described in the module and reviewed by ASTER GLOBAL, found that the penetration of conservation activities to be about 3.6% in the world. Given the low penetration (much less than 5%) of these activities throughout the world, the new module is appropriate for determining additionality.

For all activities ineligible for the activity method, the methodology uses T-ADD (CDM combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities) is used to demonstrate additionality. This is the same tool used for the related, accepted VM0033

¹ The use of an expert opinion was approved by VCS guidance providing a communication (On 22 Jun 2017) to ASTER GLOBAL. This guidance states, “In our view, we do believe it can be appropriate for expert opinion to be used to show that datasets and conclusions are applicable more broadly for the purpose of determining activity penetration. We note that this sort of approach was used for VM33, and so if it can be shown that expert opinion is being used in a similar manner to that instance, we would be comfortable for expert opinion to be used in this case as well.”

methodology, and uses standard methods to determine alternative land use scenarios, barrier analysis, economic analysis and common practice analysis. It is appropriate for determining additionality in REDD+MF projects.

The only exception is for tidal wetlands projects that are eligible to apply the activity method for determining additionality.

3.9 Quantification of GHG Emission Reductions and Removals

3.9.1 Baseline Emissions

Procedures for quantifying the baseline emissions for REDD, ARR, and WRC project activities are determined by baseline type and selected carbon pools per AFOLU Requirements section 4.5.19. In the case of combined project types, the methodology appropriately requires development of a unique baseline to account for peat as a soil carbon pool. For instance, module BL-PEAT appropriately operates in combination with Modules M-PEAT and E-BPB to provide conservative procedures for quantification of the baseline. New and existing modules for quantification of baseline emissions encompass all GHG sources, sinks, and carbon pools as specified by the delineated project boundary. The following baseline modules BL-PL, BL-UP, BL-PEAT, BL-TW and BL-ARR, contain procedures for calculating baseline GHG emissions. The methodology appropriately uses annual accounting procedures in all modules for determination of the baseline emissions.

Some changes were made to include tidal wetlands. BL-ARR is now used to measure living and dead biomass pools only. There is no longer a WRC component in Δ CBSL-ARR. Instead, BL-TW calculates emissions from the soil pool separately, then adds the biomass emissions from BL-ARR (and fuel emissions) to calculate baseline emissions for (GHGBSL-TW).

Carbon pools included in projects are presented in the same way as in the previous version of REDD-MF (v.1.5). One change is the inclusion of the burning of woody biomass as a GHG source. Another change, in WRC projects, includes emissions from fossil fuel use in the project scenario, as degraded wetland restoration often requires significant use of earth moving equipment, etc. Methodology users are referred to M-PEAT and M-TW for monitoring procedures of the soil pool for WRC projects.

For CIW project activities, module BL-UP or BL-PL is used, applying a “terminology conversion” table in order to encompass wetlands.

The VCS AFOLU requirements regarding the calculation of baseline (and project) emissions in this revision of the REDD+ MF methodology are covered. For example:

- Peat Depletion Times (PDT) and Soil organic carbon Depletion Times (SDT) are estimated and used in setting the limit on the time period during which GHG emission reductions are claimed for a project. SDT was added to the X-STR module.
- Change in water table depths in the baseline are projected into the project crediting period.
- SOC in sediment (allochthonous soil carbon) is accounted for separately from that resulting from vegetative growth (autochthonous soil carbon).

- In order to qualify, projects must demonstrate significant GHG benefits over the baseline for at least a 100-year time frame.

Sea level rise and its effects on GHG emission reductions during the project lifetime is addressed.

The procedures for calculating baseline emissions in the methodology are appropriate and adequate for estimating emissions in both mineral soil and peatland situations. The equations and formulas are used without error and parameters for quantification of baseline emissions are used appropriately in calculating all significant baseline emissions.

3.9.2 Project Emissions

Project emissions for monitoring periods are calculated according to REDD, ARR, and WRC project categories which are accompanied by specific monitoring modules. The modules contained within the methodology appropriately monitor for changes in project carbon stocks from natural or anthropogenic causes and accounts for gains or losses in the previously validated monitoring procedures per AFOLU Requirements section 4.5.20.

For REDD project activities, the module M-MON, is still used, which has not been changed. For ARR activities, the module M-ARR is used, which has been updated to include ARR activities on wetlands. For WRC activities, the modules M-PEAT or M-TW is used, depending on which is appropriate.

M-ARR is now only used for guidance in monitoring changes in biomass. The base methodology refers the user to M-PEAT or M-TW to monitor changes in the soil pool, depending on relevance. GHG emissions from tidal wetlands include emissions from biomass changes, soil, fuel and burning of biomass. M-TW only describes the procedures for the soil component and refers users to M-ARR, E-BPB and E-FFC for biomass changes, burning and fuel use in the project scenario, respectively.

Major findings related to the quantification of baseline emissions in the revised methodology are presented.

- As per AFOLU Requirements (WRC) section 4.5.28, “Where soil carbon is included in the project boundary, sedimentation shall be accounted for so that carbon sequestration resulting from the growth of vegetation can be estimated separately from carbon accumulated in sedimentation.” M-TW (and BL-TW) provide methods to differentiate between allochthonous and autochthonous soil carbon, so carbon in sediment from outside the project area can be separated from soil carbon resulting from vegetative growth within the project area
- As per AFOLU Requirements (WRC) section 4.5.31, “As WRC activities are likely to influence CH₄ emissions, methodologies shall establish the criteria and procedures by which the source may be deemed *de minimis* or conservatively excluded.” M-TW (and BL-TW) provide methods for estimating CH₄ emissions.

ASTER GLOBAL reviewed GHG sources, sinks and reservoirs identified in version 1.5 of REDD-MF and its associated modules to ensure all were included in the updated versions, plus the addition of any GHG sources, sinks and reservoirs added by including the tidal wetlands modules.

The main carbon pools in REDD+ activities are biomass, both living and dead, and soils. This is true for tidal wetlands as well.

As was always the case, biomass is estimated under REDD or ARR, depending on project activities. Soils are covered under M-TW and BL-TW (or M-PEAT and BL-PEAT, for organic soils). This is appropriate, as changes in wetland soil emissions and sequestration are strongly correlated to changes in drainage, so estimated emissions must consider water table/water level changes, as well as carbon accumulated from decomposing vegetation.

The procedures for calculating project emissions in the monitoring modules are appropriate and adequate for estimating emissions, and cover all GHG sources, sinks and reservoirs included within the project boundaries. The equations and formulas are used without error and parameters for quantification of emissions are used appropriately in calculating all significant project emissions. The procedures for calculating project emissions using monitoring modules conform to VCS rules.

3.9.3 Leakage

Leakage is taken into account in the methodology and associated modules and procedures are in compliance with VCS rules for REDD, ARR, and WRC project activities. Significance of leakage and carbon pools is appropriately determined using the module T-SIG. In the case of significant market decrease in production of timber, fuelwood, or charcoal, leakage is determined using module LK-ME. Where leakage prevention leads to a significant increase in the use of fertilizers, module E-NA is appropriately used. In accordance with AFOLU Requirements section 4.6.6, leakage mitigation measures which can cause any significant increase in GHG emissions associated with these activities are appropriately accounted for, unless deemed *de minimis* (as set out in AFOLU Requirements section 4.3.3).

More specifically, modules used for the different possible project activities are:

- Planned deforestation/degradation: Module LK ASP (LK-ASP is also used for AUDD projects where the deforestation agents can be identified).
- Unplanned deforestation/degradation: Module LK-ASU
- Fuelwood/charcoal collection: LK-DFW
- Pre-project agricultural or aquacultural activity displacement: Module LK-ARR.
- WRC projects not combined with REDD or ARR, where activity shifting is displaced to peatland areas, LK-ASP or LK-ASU is used
- Combined RWE-ARR projects may use: Module LK-ASP

All the leakage modules used are accepted, previously validated modules and are used appropriately for project activities covered by the methodology.

3.9.4 Net GHG Emission Reductions and Removals

The revised methodology calculates the net GHG emissions reductions and removals (NERs) of a project accounting period by adding the NERs for each activity type (REDD, ARR, WRC). Methods for calculation of NERs from each project activity category is included and is appropriate.

The following summarises how the processes to calculate NERs and uncertainty were changed through this revision, and the review that ASTER GLOBAL took to determine that these processes were appropriate. Section 8.2 of the REDD-MF document originally submitted to the review team summarized the net GHG emission reductions and removals generated by the project that had undergone a changes to Module M-ARR, and it was not clear to the review team that the integrity of the overall methodologies use of the tool had not been adversely impacted. Module M-ARR used to depend on CDM methodology AR-ACM0003 Afforestation and reforestation of lands except wetlands and associated tools. The use of this tool had been removed altogether, and the newer version called for GHG emissions and removals under the ARR project scenario on mineral soils to be estimated using the procedures provided in AR-Tool14 “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”. The review teams concern over changes in Module M-ARR not calling the CDM methodology AR-ACM0003 were that these changes may have adversely impacted the integrity of the overall methodologies use of the tool with respect to applicability conditions in the CDM methodology. Through the process of review findings, the original CDM methodology AR-ACM0003 was added back into Module M-ARR, and Section 8.2 of the REDD-MF document was largely unchanged.

The review team also examined equations and the structure of the updated Module X-UNC document and noted the general approach for calculating uncertainty was consistent with the previous version, noting only minor items related to organization and clarity that needed to be addressed.

The final revised methodology calls for quantifying net GHG emissions reductions and removals (NERs) according to project activity in each monitoring period by subtracting gross reductions and removals from the buffer amount allocation. Uncertainty is addressed through the use of weighted standard errors of estimates from the baseline emissions calculations and project case carbon stock measurements. The methods for calculation of emission reductions and removals from the methodology are appropriate, adequate and in compliance with the VCS Standard, section 4.7.1. The review team determined that the equation and formulas are used without error and parameters for quantification of emissions are used appropriately in calculating all significant emissions.

3.10 Monitoring

The data and parameters monitored are unchanged from the previous version of the methodology.

Data and parameters available at validation

| Data parameter | Assessment team findings |
|--------------------------------|---|
| $\Delta C_{BSL,degrad-FW/C}$ | This data/parameter was included because it pertains to net GHG emissions in the baseline caused by degradation induced by fuelwood collection and charcoal production. This value is derived conservatively from approved module BL-DFW and is compliant with VCS rules for default values. |
| $\Delta C_{BSL,planned}$ | This data/parameter was included because it pertains to net GHG emissions in the baseline from planned deforestation. This value is derived conservatively from approved module BL-PL and is compliant with VCS rules for default values. |
| $\Delta C_{BSL,unplanned}$ | This data/parameter was included because it pertains to net GHG emissions in the baseline from unplanned deforestation. This value is derived conservatively from approved module BL-UP and is compliant with VCS rules for default values. |
| $\Delta C_{LK-AS,degrad-FW/C}$ | This data/parameter was included because it pertains to net GHG emissions due to activity-shifting leakage caused by degradation induced by fuelwood collection and charcoal production. Calculating leakage from forest degradation caused by fuelwood/charcoal production was found to be a suitable way to account for leakage. This value is derived conservatively from approved module LK-DFW and is compliant with VCS rules for default values. |
| $\Delta C_{LK-AS,planned}$ | This data/parameter was included because it pertains to net GHG emissions due to activity-shifting leakage from planned deforestation. Calculating leakage from the shifting of an identified deforestation agent was found to be a suitable way to account for leakage. This value is derived conservatively from approved module LK-ASP and is compliant with VCS rules for default values. |
| $\Delta C_{LK-AS,unplanned}$ | This data/parameter was included because it pertains to net GHG emissions due to activity-shifting leakage from unplanned deforestation. Calculating leakage from displaced immigrant agents and local rAster Globaldents was found to be a suitable way to account for leakage. This value is derived conservatively from approved module LK-ASU and is compliant with VCS rules for default values. |

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| ΔC_{LK-ME} | This data/parameter was included because it pertains to net GHG emissions due to market-effects leakage. Calculating leakage from the limit of timber supply of fuelwood supplied to a market was found to be a suitable way to account for leakage. This value is derived conservatively from approved module LK-ME and is compliant with VCS rules for default values. |
| $\Delta C_{BSL-ARR}$ | This data/parameter was included because it pertains to net GHG emissions in the ARR baseline scenario up to year t^* . This value is derived conservatively from approved module BL-ARR and is compliant with VCS rules for default values. |
| $\Delta C_{BSL-WRC}$ | This data/parameter was included because it pertains to net GHG emissions in the WRC baseline scenario up to year t^* . This value is derived conservatively from approved module BL-PEAT and is compliant with VCS rules for default values. |
| $E_{FC,it}$ | This data/parameter was included because it pertains to net GHG emissions in the WRC baseline scenario up to year t^* . This value is derived conservatively from approved module E-FFC and is compliant with VCS rules for default values. |
| $N_2O_{direct-N,i,t}$ | This data/parameter was included because it pertains to direct N_2O emissions as a result of nitrogen application on the later native land use within the project boundary in stratum i in year t^* . This value is derived conservatively from approved module E-NA and is compliant with VCS rules for default values. |
| GHG_{LK-ECO} | This data/parameter was included because it pertains to net GHG emissions due to ecological leakage from the WRC activity up to up to year t^* . This value is derived conservatively from approved module LK-ECO and is compliant with VCS rules for default values. |

Data and parameters monitored

| Data parameter | Assessment team findings |
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| $\Delta C_{WPS-REDD}$ | This data/parameter was included because it pertains to net GHG emissions in the REDD project scenario up to year t^* . Calculating net GHG emissions using this module is suitable because it has been previously assessed and validated (formerly known as M-MON). This value is derived conservatively from approved module M-REDD and is compliant with VCS rules for default values. |
| $\Delta C_{WPS-ARR}$ | This data/parameter was included because it pertains to net GHG emissions in the ARR project scenario up to year t^* . Calculating |

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| | net GHG emissions using this module is suitable because it is specific to ARR monitoring activities on peat and mineral soils. This value is derived conservatively from approved module M-ARR and is compliant with VCS rules for default values. |
| <i>GHG_{WPS-WRC}</i> | This data/parameter was included because it pertains to net GHG emissions in the WRC project scenario up to year <i>t*</i> . Calculating net GHG emissions using this module is suitable because it is specific to WRC monitoring activities on peat carbon pools due to drainage, rewetting, and fire. This value is derived conservatively from approved module M-PEAT and is compliant with VCS rules for default values. |

The assessment team concludes that monitoring procedures for the methodology as appropriate, adequate and in compliance with VCS rules.

4 ASSESSMENT CONCLUSION

Environmental Services Inc. completed the first assessment of Revision and Extension of VCS Methodology VM0007. The assessment team confirms that the methodology and new revisions adhere to the criteria established for this assessment and are documented and complete. The latest reviewed versions include:

- VMD0007 BL-UP_v3.3_01NOV2019 CLEAN.docx"
- VMD0009 LK-ASP v1.3_17APR2019 CLEAN.docx"
- VMD0010 LK-ASU v1.2_03JAN2020 CLEAN.docx"
- VMD0013 E-BPB v1.2_03JAN2020 CLEAN.docx"
- VMD0015 M-REDD, v2.2_28JAN2020 CLEAN.docx"
- VMD0016 X-STR_v1.2_02JAN2020 CLEAN.docx"
- VMD0017 X-UNC_v2.2_15DEC2017 CLEAN.docx"
- VMD0041 BL-ARR_v1.1_02JAN2020 CLEAN.docx"
- VMD0042 BL-PEAT v1.1_23MAY2019 CLEAN.docx"
- VMD0044 LK-ECO v1.1_26JUL2018 CLEAN.docx"
- VMD0045 M-ARR_v1.1_02JAN2020 CLEAN.docx"
- VMD0046 M-PEAT v1.1_08NOV2019 CLEAN.docx"
- ADD-AM_v1.0_15DEC2017 CLEAN.docx"
- BL-TW_v1.0_09MAR2020 CLEAN.docx"
- M-TW_v1.0_28FEB2020 CLEAN.docx"
- VM0007 REDD+MF_v1.6_02MAR2020 CLEAN.docx"
- VMD0007 BL-PL_v1.3_01NOV2019 CLEAN.docx"

ASTER GLOBAL approved changes to the methodology and concludes without any qualifications or limiting conditions that the methodology element documentation (VM0007: REDD + Methodology Framework, version 1.6 6 March 2020) meets the requirements of the: VCS Program Guide v3.7, VCS Standard v3.7, VCS AFLOU Requirements v3.6, and the VCS Methodology Approval Process v3.7. Therefore, ASTER GLOBAL recommends that VCSA approve the revised methodology

element (VM0007: REDD + Methodology Framework, version 1.6 6 March 2020) as prepared by Restore Americas Estuaries and Silvestrum Climate Associates.

5 REPORT RECONCILIATION

The second assessment report and final iterations of the methodological documents were reviewed. Some clarifications were requested, however no additional revisions to the methodology were required.

6 EVIDENCE OF FULFILMENT OF VVB ELIGIBILITY REQUIREMENTS

As set out in the VCS Methodology Approval Process for AFOLU:

1) Both validation/verification bodies shall be eligible under the VCS Program to perform validation for sectoral scope 14 (AFOLU); AND

2) At least one of the validation/verification bodies shall use an AFOLU expert in the assessment; AND

3) At least one of the validation/verification bodies shall have completed at least ten project validations in any sectoral scope. Project validations can be under the VCS Program or an approved GHG program, with the projects having been registered under the applicable program. A validation of a single project under more than one program (e.g., VCS and CDM) counts as one project validation. The validation/ verification body that meets this eligibility requirement may be the same validation/verification body that uses an AFOLU expert.

ASTER GLOBAL fulfils the eligibility requirements in the following ways:

1) ASTER GLOBAL is accredited by the American Standards Institute under ISO 14065:2007 for GHG Validation and Verification Bodied; including validation/verification of assertions related to GHG emission reductions and removals at the project level for Land Use and Forestry (Group 3). VCS accepts this accreditation.

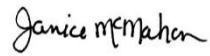
2) ASTER GLOBAL utilized Shawn McMahon, a WRC non-peatlands expert and Dr. Guy Pinjuv, and IFM/REDD expert who participated in all relevant meetings and completed a comprehensive technical review.

3) To date, ASTER GLOBAL has completed 30 VCS project validations under AFOLU. Please see Appendix C for the required evidence.

7 SIGNATURE

Signed for and on behalf of:

Name of entity: Aster Global



Name of signatory: Janice McMahon
President



Name of signatory: Shawn McMahon
Lead Verifier

Date: 06 May 2020

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Appendix A – NCRs/CL/OFIs

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| Item 1 | |
| VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4 | 3.15.1 GHG emissions and/or removals shall be estimated for each GHG source, sink and/or reservoir relevant for the project (including leakage) and the baseline scenario. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VM0007 REDD+MF_v1.6_public comment.docx (Section 4.5.5) |
| ESI Findings - Round 1 | Section 4.5.5 Tidal Wetlands of the methodology states that "For tidal wetlands restoration project activities, prior to the project start date, the project area must meet the following conditions: b) Is under a land use that could be displaced outside the project area (e.g., timber harvesting), although in such case, emissions from this land use shall not be accounted for." It is not clear why land uses that could be displaced outside the project area shall not be accounted for. This is a classic example of leakage that should be included in GHG emissions and/or removals estimated per section 3.1.5 of the VCS standard and section 4.6.9 of the AFOLU requirements. |
| Round 1 NCR/CL/OFI | <p>NCR: Please clarify why land uses that could be displaced outside the project area "shall not be accounted for".</p> <p>Else, please update estimation of GHG emissions and/or removals for each GHG source, sink and/or reservoir relevant for the project (including leakage) and the baseline scenario.</p> |
| Round 1 Response from Project Proponent | IME: Indeed this may look as if a classical leakage emission would not be accounted for. These applicability conditions were copied from VM0033, where, like here, leakage related to WRC restoration projects is excluded by setting certain applicability conditions (see footnote 19). If activity shifting could occur, not accounted for are the baseline emissions from the activity within the project area. We now added 'baseline' to 'emissions' to help clarify this. Any potential leakage emission would be compensated by not accounting baseline emissions. In this approach, a 'stop-loss' component would become null and void. If activity shifting in reality does happen, the project does not benefit since the project was not allowed to account for the emissions associated with the activity. If activity shifting in reality does not happen, the approach is conservative because the project was not allowed to account for the emissions that were in fact a benefit of the project. Note that this applicability condition was included for projects restoring tidal wetlands that may gain significant GHG removals far exceeding any potential leakage loss. Projects just focusing on |

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| | <p>stop-loss and facing activity shifting would not result in any emission reduction. In discussions with validators of VM0033 and the VCS (Sam Hoffer) this was considered a valid approach.</p> |
| <p>ESI Findings - Round 2</p> | <p>If this is the assumption (no leakage in trees offsite, because trees are credited onsite, then you should have to monitor trees onsite over time to make sure stocks are not declining over time)</p> |
| <p>Final ESI Findings</p> | <p>This item was originally pending discussion w Silvestrum and VCS, these are summarized below:</p> <p>No finding was issued, and the item was closed. See discussions with VCS, Silvestrum, and ESI below that resolved issue:</p> <p>Amy Schmid, VCS 22 June, 2017: "Based on our call, we understand there were a few different options discussed (i.e., either to remove the applicability condition or to require monitoring of carbon pools that are included in the project area, but not credited per this applicability condition). Our understanding is that those options seemed amenable to both the development team and ESI. If that's the case, we are comfortable for either of these options to move forward. Please do let VCS know which option is followed, as VCS will need to update VM33 (which includes the same applicability condition) accordingly."</p> <p>Shawn McMahon, ESI: "From last week's discussion we have just one follow up item on the leakage question. As you indicated, "...not accounting for the baseline emission either balances potential leakage emissions or is conservative if such leakage would not occur." However, that only works if the baseline forested component remains in place for the duration of the crediting period. If those trees were to suffer mortality, the role they play to balance leakage is negated. More to the point, without measuring those trees at the outset of the project (i.e. baseline) there is little way to know what volume (and potential leakage-balancing ability) has been lost to mortality. In some cases you might be able to reconstruct this from the dead and down tree and allometrics but in many cases this would not be practical and the impact to the leakage-balancing ability would not be quantifiable. For the leakage-balancing argument to be valid it would seem you would need to measure the baseline aboveground biomass pool at the outset and monitor any losses during the crediting period, as suggested in item 3 from Amy's June 22nd email."</p> <p>Igino Emmer, Silvestrum 05 July 2017: "The standing stock of trees that exists at t_{zero} does</p> |

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| | <p>not play a role in balancing leakage emission. This balancing is achieved by not accounting for baseline emissions related to baseline tree harvesting. The trees that exist at t_zero become project trees and are measured at t_zero (contrary to your more-to-the-point argument) and in the regular monitoring. The project only benefits from tree growth during the crediting period. If the trees die, the entire loss is accounted for and this may cause a big negative on the credit balance of the project, as discussed."</p> <p>Guy Pinjuv, ESI 07/07/2017: "Hello Iginio, Can you direct me to the section of the methodology where there a requirement for "The trees that exist at t_zero become project trees and are measured at t_zero", in the case that above ground carbon in trees is not included in the project boundary? I believe this is the source of the confusion. Potential leakage in this pool (caused by stopping harvesting in the project area) can only be accounted for if trees are measured, even if they are not included in the project boundary."</p> <p>Iginio Emmer, Silvestrum 10 July 2017: "The mandatory measurement of tree carbon stocks is indicated in Table 5 of REDD+ MF. AR tool 14 provides monitoring procedures. In the stock change approach the stocks at the start and the end of each monitoring event are measured. There is no option to not include trees in de project area. This is a mandatory pool."</p> |
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| Item 2 | |
| VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4 | 3.15.2 The net GHG emission reductions and removals generated by the project shall be quantified. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VM0007 REDD+MF_v1.6_public comment (Section 8.2)VMD0045 M-ARR_v1.1_public comment.docxVM0007 REDD+MF_v1.6_ESI RD2_20170612 (Section 1) |
| ESI Findings - Round 1 | Section 8.2 of the REDD-MF document summarized the net GHG emission reductions and removals generated by the project. This section is largely unchanged, and refers to Modules M-ARR (that has been modified).However, Module M-ARR has been undergone a major changes and it is not clear that the integrity of the overall methodologies use of the tool has not been adversely impacted.These changes may or may not affect the integrity of methodologies use of the tool (i.e. older projects that used this methodology, or consistency). For instance M-ARR used to depend |

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| | <p>on CDM methodology AR-ACM0003 Afforestation and reforestation of lands except wetlands and associated tools. The use of this tool has been removed altogether. NOW in M-ARR: <u>GHG emissions and removals under the ARR project scenario on mineral soils are estimated using the procedures provided in AR-Tool14 “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”</u></p> |
| <p>Round 1 NCR/CL/OFI</p> | <p>CL: Please discuss the changes to M-ARR, and demonstrate how these changes have not adversely impacted the integrity of the overall methodologies use of the tool.</p> |
| <p>Round 1 Response from Project Proponent</p> | <p>IME: Instead of referring to ACM0003 we refer to Tool 14, which is the module used by ACM0003 that contains the actual procedures for trees and shrubs. ACM0003 excludes wetlands because procedures covering specific wetlands conditions are lacking (CDM has its dedicated mangrove restoration methodology ARAM0014). Tool 14 contains procedures focussing only on tree and shrub biomass that apply to tree and shrub vegetations in wetlands equally (ACAM0014 also uses tool 14). Tool 14 has no internal applicability conditions. In Sources we added Tool 14 (we now deleted module BL-TW because it is not being used in BL-ARR). In Appl Cond, because we do not anymore refer to ACM0003 and instead use Tool 14 directly, we removed the reference to the appl cond in ACM0003 and the language referring to ACM0003 excluding wetlands; we added a condition that ARR may not occur on undegraded wetland. Procedures now include trees/shrubs (tool 14) as well as herbal vegetation (which is relevant for wetlands). Procedures for herbs are taken from VM0033. Various equations needed to be changed for this but the functionality is unaltered. Since we includes harvesting (see item 14, 17) we added procedures for long-term average carbon stocks in trees and shrubs, supported by procedures in M-ARR. Also added are procedures related to sea level rise to make sure that claiming credits from removals is done conservatively in the face of sea level rise and potential drowning of wetlands and concomitant loss of carbon. Conclusion: procedures for trees and shrub remain unaltered; added are long-term average related to harvesting and loss due to drowning, and herbs.</p> |
| <p>ESI Findings - Round 2</p> | <p>While reviewers agree that referring directly to Tool 14 is not a conceptually a problem, as it is one of the tools used in ACM0003. The original version of the methodology (VM0007) also used other sub</p> |

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| | <p>tools that may have affected project accounting, each containing its own set of applicability conditions and accounting procedures, these include:(i) “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities;”iii) “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities;”(iii) “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities;”(iv) “Estimation of non-CO2 greenhouse gas (GHG) emissions resulting from burning of biomass attributable to an A/R CDM project activity;”(v) “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity;Please address the exclusion of each of these tools, discussing the individual applicability conditions and accounting procedures in each, and show that the exclusion will not adversely impacted the integrity of the overall methodology (focusing on M-ARR). One point to address closely will be the exclusion of (Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities) that was previously used in ACM0003. Now it appears that soil carbon is accounted for tool 14 alone, M-ARR now states: <u>“GHG emissions and removals under the ARR project scenario on mineral soils are estimated using the procedures provided in AR-Tool14 “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”.</u> It appears that the use of mineral soil tool (iii) has been removed and has been replaced with VMD0004 for the non-organic soils.</p> |
| <p>Round 2 NCR/CL/OFI</p> | <p>CL: Please address the exclusion of each of the tools used in ACM0003, discussing the individual applicability conditions and accounting procedures in each, and show that the exclusion will not adversely impact the integrity of the overall methodology. CL: One related point to address is the exclusion of (Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities) that was previously used in ACM0003, and M-ARR currently stating that <u>“GHG emissions and removals under the ARR project scenario on mineral soils are estimated using the procedures provided in AR-Tool14 “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”.</u> It appears that the use of mineral soil tool (iii) has been removed and has been replaced with VMD0004 for</p> |

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| | the non-organic soils, and this statement may be contradictory. |
| Round 2 Response from Project | IME: We reverted to using ACM0003 as in version 1.0 with added procedures for herbs, harvesting and submergence due to sea level rise. |
| Final ESI Findings | Finding Closed: The approach of reverted to using ACM0003 as in version 1.0 with added procedures for herbs, harvesting and submergence due to sea level rise addresses both findings including: the exclusion of both ACM0003, and Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities. |

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| Item 3 | |
| VCS Standard VCS Version 3 Requirements Document 08 October 2013, v3.4 | 3.16.1 Data and parameters used for the quantification of GHG emission reductions and/or removals shall be provided in accordance with the methodology. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VMD0016 X-STR_v1.2_public comment (section 6) Good Practice Guidance for Land Use, Land-Use Change and Forestry (section 4.3.5.4) VMD0016 X-STR v1.2 ESI RD2 20170613 (section 6) |
| ESI Findings - Round 1 | The "Source of data", for data and parameters (such as Depthsoil, i, t0 from X-STR) does not fully describe what is meant by "literature". |
| Round 1 NCR/CL/OFI | OFI: Please describe for each of the parameters what sources of literature are considered appropriate (i.e. peer reviewed), such that the sources comply with VCS requirements for data and parameters. |
| Round 1 Response from Project Proponent | We refer to datasets. Peer-reviewed would be a little over-demanding. We changed 'literature' into 'literature datasets' |
| ESI Findings - Round 2 | Finding Open: Data and parameter sources of data do not appear to meet the VCS requirements (AFOLU 4.5.1). AFOLU 4.5.1 specifies that <i>"Methodologies shall establish procedures to quantify the GHG emissions or removals for the project and baseline scenario. The IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry shall be used as guidance for quantifying increases or decreases in carbon stocks and GHG emissions."</i> These good practice guidelines specify both good practice procedures used for measurement of Mineral soil depth, and also procedures for what types of datasets are acceptable. |
| Round 2 NCR/CL/OFI | Note, this finding has been changed to a CL, based on requirements in AFOLU 4.5.1 CL: Please ensure that for each of the parameters, the Source of data (literature source considered appropriate for datasets), is described such that the sources comply |

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| | with the IPCC 2006 Guidelines for National GHG Inventories or the IPCC 2003 Good Practice Guidance for Land Use, Land-Use Change and Forestry. |
| Round 2 Response from Project | IME: In the absence of peer-reviewed data sources, IPCC 2006 allows for assessing each data source individually to make a determination of suitability. IPCC 2006 table 2.2 suggests for survey, measurement and monitoring data to use data from Universities (environmental, measurement and monitoring departments) with the comment that one needs to make sure the factors are representative and that standard methods are used. Based on this we added that the 'project proponent must justify that the data used are representative and that standard methods have been used'. |
| Final ESI Findings | The language taken from IPCC and added requiring that "factors are representative and that standard methods are used" is sufficient to address the finding. Finding addressed. |

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| Item 4 | |
| VCS AFOLU Requirements Version 3.4 (ARR) (08 October 2013) | 4.2.1 Eligible ARR activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing or restoring vegetative cover (forest or non forest) through the planting, sowing or human-assisted natural regeneration of woody vegetation. Eligible ARR projects may include timber harvesting in their management plan. The project area shall not be cleared of native ecosystems within the 10 year period prior to the project start date, as set out in Section 3.1.6. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VMD0041 BL-ARR_v1.1_public comment.docx (section 4) |
| ESI Findings - Round 1 | <p>The updated module VMD0041 BL-ARR_v1.1_public comment.docx (section 4) has removed 2 applicability conditions of the previous version of the module:</p> <ul style="list-style-type: none"> • The applicability conditions set out in AR-ACM0003 Afforestation and reforestation of lands except wetlands must be met. • Applicability conditions included in AR-ACM0003 Afforestation and reforestation of lands except wetlands and corresponding tools that exclude project activities on wetlands can be disregarded for the purpose of their use in this module, as accounting procedures for the peat soil are provided in module BL-PEAT. <p>It is not clear that this tool revision has maintained the integrity of methodologies that use the tool, and that those methodologies have not been adversely impacted.</p> |
| Round 1 NCR/CL/OFI | CL: Please clarify how removing 2 applicability conditions has maintained the integrity of all methodologies that use this tool, and that those methodologies have not been adversely impacted. |
| Round 1 Response from Project Proponent | IME: Instead of referring to ACM0003 we refer to Tool 14, which is the module used by ACM0003 that contains the |

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| | <p>actual procedures for trees and shrubs. ACM0003 excludes wetlands because procedures covering specific wetlands conditions are lacking (CDM has its dedicated mangrove restoration methodology ARAM0014). Tool 14 contains procedures focussing only on tree and shrub biomass that apply to tree and shrub vegetations in wetlands equally (ACAM0014 also uses tool 14). Tool 14 has no internal applicability conditions. In Sources we added Tool 14 (we now deleted module BL-TW because it is not being used in BL-ARR).</p> <p>In Appl Cond, because we do not anymore refer to ACM0003 and instead use Tool 14 directly, we removed the reference to the appl cond in ACM0003 and the language referring to ACM0003 excluding wetlands; we added a condition that ARR may not occur on undegraded wetland.</p> <p>Procedures now include trees/shrubs (tool 14) as well as herbal vegetation (which is relevant for wetlands). Procedures for herbs are taken from VM0033. Various equations needed to be changed for this but the functionality is unaltered. Since we includes harvesting (see item 14, 17) we added procedures for long-term average carbon stocks in trees and shrubs, supported by procedures in M-ARR. Also added are procedures related to sea level rise to make sure that claiming credits from removals is done conservatively in the face of sea level rise and potential drowning of wetlands and concomitant loss of carbon.</p> <p>Conclusion: procedures for trees and shrub remain unaltered; added are long-term average related to harvesting and loss due to drowning, and herbs.</p> |
| <p>Final ESI Findings</p> | <p>Finding Closed: The approach of reverted to using ACM0003 as in version 1.0 with added procedures for herbs, harvesting and submergence due to sea level rise addresses both findings including:</p> <p>the exclusion of both ACM0003, and Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities.</p> |

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| <p>Item 5</p> | |
| <p>VCS AFOLU Requirements Version 3.4 (ARR) (08 October 2013)</p> | <p>4.3.7 Where the methodology is applicable to projects that may reduce the aboveground non-woody biomass, belowground biomass, litter, dead wood or soil pools above de minimis (as set out in Section 4.3.3), the relevant carbon pool shall be included in the project boundary.</p> |
| <p>Evidence Used to Assess (Location in PD/MR or Supporting Documents)</p> | <p>"VM0007 REDD+MF_v1.6_public comment.docx (Table 5)</p> <p>VM0007 REDD+MF_v1.6_ESI RD1_20170515 (table 5)</p> <p>BL-TW_v1.0_ESI RD1_20170515.docx</p> <p>M-TW_v1.0_ESI RD1_20170515.docx</p> |

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| <p>ESI Findings - Round 1</p> | <p>VMD0013 E-BPB v1.1 ESI-RD2 20170612.docx"</p> <p>Table 5: Carbon Pools in Baseline and Project Scenario of ARR Project Activities includes relevant carbon pools in the project boundary. This table has changed slightly in the revision of the REDD-MF document and most of the changes in the revision were minor. However, some information was deleted that should be left in the table for clarity.</p> <p>For the Deadwood carbon pool, in Wetlands, the following text was deleted in the revision "Given the applicability conditions that the project area for ARR is non-forest land or land with degraded forest and that the project scenario does not involve the harvesting of trees, the dead wood carbon pool will increase due to project implementation. It is therefore conservative not to include dead wood. <u>If included, dead wood must be accounted for using procedures in modules CP-D, BL-ARR and M-ARR.</u>".</p> <p>The review team agrees, if harvesting is allowed in the project scenario most of deleted text is reasonable, however the final sentence should be left in for clarity, "If included, dead wood must be accounted for using procedures in modules CP-D, BL-ARR and M-ARR."</p> |
| <p>Round 1 NCR/CL/OFI</p> | <p>CL: Please include the following sentence in Table 5 for the Deadwood carbon pool in Wetlands, "If included, dead wood must be accounted for using procedures in modules CP-D, BL-ARR and M-ARR."</p> |
| <p>Round 1 Response from Project Proponent</p> | <p>IME: We re-inserted the underlined sentence (bar CP-D, because this module relates to REDD procedures not ARR).</p> <p>This made us realise that we omitted to include parameters for biomass burning in the TW modules. prescribed burning is an accepted project activity, as in VM0033. We added an applicability condition to this end, and the term for biomass burning in Table 9 of REDD+MF and Eq 1 of M-TW, as per VM0033. We corrected equations 2, 3 and 4 in M-TW by replacing bls with wps.</p> |
| <p>ESI Findings – Round 2</p> | <p>Finding Open: It is not immediately clear to the verifiers why the use of module CD-P was deleted from table 4, as this module was included in REDD-MF v1.5. The response indicates that this is related to REDD procedures not ARR, however this language was present in REDD+ Methodology Framework (REDD-MF) v1.5 (table 4). CP-D was included in version 1.5 for ARR project activities on Mineral Soil and on Peatland.</p> <p>New findings related to inclusion of Biomass Burning:</p> <p>Equation additions in TW modules to address biomass burning are appropriate to this methodology revision. Biomass burning will be relevant only to revised modules for Tidal Wetlands (RWE, and AUWD). Biomass burning is not applicable to ARR projects (see table 4 of the</p> |

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| | <p>REDD-MF document).</p> <p>The module E-BPB will need to be modified to address newly added WRC project activities (Tidal Wetlands). Currently the module only considers peatlands.</p> |
| <p>Round 2 NCR/CL/OFI</p> | <p>CL: Please clarify why CP-D is not relevant for ARR project scenarios in this version of the methodology, when it was in V1.5.</p> <p>CL: Please modify the E-BPB to address newly added WRC project activities (Tidal Wetlands). Currently the module only considers peatlands.</p> |
| <p>Round 2 Response from Project Proponent</p> | <p>IME CL 1: See also response to item 2. Referring to ACM0003 means that the A/R CDM deadwood tool is now also involved. ACM0003 and its associated tools covers the functionality of the CP modules. Mentioning CP-D in the previous version was an error.</p> <p>IME CL2 : E-PBP revised. Thanks for spotting this.</p> |
| <p>Final ESI Findings</p> | <p>CL1: Item addressed, the methodology now refers to ACM0003, meaning that the A/R CDM deadwood tool is now also used.</p> <p>CL2: Item addressed, E-PBP revised to address newly added WRC project activities (Tidal Wetlands).</p> |

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| <p>Item 6</p> | |
| <p>VCS AFOLU Requirements Version 3.4 (ARR) (08 October 2013)</p> | <p>4.4.2 (No specific requirements)</p> |
| <p>Evidence Used to Assess (Location in PD/MR or Supporting Documents)</p> | <p>VMD0045 M-ARR_v1.1_public comment (Page 7)</p> |
| <p>ESI Findings - Round 1</p> | <p>The Module M-ARR has also been revised with some significant changes that appear to affect baseline and project crediting.</p> <ul style="list-style-type: none"> • One of which deals with “ARR on wetlands influenced by sea level rise” <p>The revision of M-ARR gives carbon credits for planting trees in ARR situations (afforestation or reforestation). The revision text sounds like it’s possible to get more credits for cutting these planted trees down in the future (quantifying carbon in wood products that were not inundated by sea level rise).</p> <p>M-ARR states,</p> <p><i>“Biomass may be lost due to subsidence following sea level rise. For strata where conversion to open water is expected before $t = 100$, the maximum stock in tree and shrub biomass ($CTREE,i,t$ and $CSHRUB,t$, respectively) used in AR-Tool14 is limited to $CAVG-TREE,i$, as calculated in equation 5.</i></p> <p><i>Restoration projects which include afforestation or</i></p> |

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| | <p><i>reforestation components may account for long-term carbon storage in wood products in case trees are harvested before dieback. In this case, the parameter $CTREE,t$ in equation 4 must be read as $CTREE,i,t + CWP,i,t$. $CAVG-SHRUB,i$ is calculated as follows:"</i></p> <p>Some issues related to this revision include:</p> <ul style="list-style-type: none"> • The project activity (planting trees in a future tidal flood zone), should not be credited in the first place. In this case, the baseline may not have been originally calculated correctly. • Giving more credit for cutting these same trees down (or the portion that is fixed in long lived wood products), provides a perverse incentive for planting trees in future flood zones with the intent on harvesting. |
| <p>Round 1 NCR/CL/OFI</p> | <p>NCR: Please address the review findings, or revise the methodology and module.</p> |
| <p>Round 1 Response from Project Proponent</p> | <p>IME: An ARR project can claim GHG removals using modules BL-ARR and M-ARR as long as the crediting period lasts. After the crediting period, the risk buffer ensures that if risks of reversal materialises, issued credits are safe. However, sea level rise is not seen as a risk factor, it is a given than needs to be accounted for. One effect of SLR is that project trees drown and die, causing GHG emissions. These emissions need to be accounted for. If submergence occurs within 100 years (the permanence limit under the VCS standard) all carbon stored previous should be counted as lost. However, if trees were harvested before submergence, that loss can be partially mitigated (given the parameters in the equations only some 20%. This is therefore NOT double counting, this is rather a very prudent and conservative approach.</p> |
| <p>ESI Findings – Round 2</p> | <p>Finding Open: Sea level rise not accounted for in ARR baseline (i.e. credits are given for planting), while sea level rise is included for baseline consideration in TW.</p> <p>The current approach is double counting , and is only conservative in the sense that whole trees are not counted twice (only portions of trees). If sea level rise is eminent in a project area, the original carbon in planted trees should not be a positive credit (but negative at the project start date) for ARR projects.</p> |
| <p>Round 2 NCR/CL/OFI</p> | <p>NCR: Please address the review findings, or revise the methodology and module.</p> |
| <p>Round 2 Response from Project Proponent</p> | <p>IME: An ARR project can claim GHG removals using modules BL-ARR and M-ARR as long as the crediting period lasts. After the crediting period, the risk buffer ensures that if risks of reversal materialises, issued credits are safe. However, sea level rise is not seen as a risk factor, it is a given than needs to be accounted for. One effect of SLR is that project trees drown and die, causing</p> |

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| | GHG emissions. These emissions need to be accounted for. If submergence occurs within 100 years (the permanence limit under the VCS standard) all carbon stored previous should be counted as lost. However, if trees were harvested before submergence, that loss can be partially mitigated (given the parameters in the equations only some 20%. This is therefore NOT double counting, this is rather a very prudent and conservative approach. |
| Final ESI Findings | Finding Closed: Per discussions with VCS, and internally with the ESI team, the volume of biomass in trees grown, will be approximately equal to the carbon lost during inundation. In this case there is no negative additionality of planting project trees. Carbon stored in wood products will be additional and accounted for using CP-W. |

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| Item 7 | |
| VCS AFOLU Requirements Version 3.4 (ARR) (08 October 2013) | SEE EQUATION ON PAGE 45 |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VMD0045 M-ARR_v1.1_public comment.docx (page 6) VMD0045 M-ARR_v1.1_ESI RD1_20170515 (equation 5) VMD0045 M-ARR_v1.1_ESI RD2_20170609 (equations 2 and 3) VMD0045 M-ARR_v1.1_ESI RD2_20170613 (equation 2) |
| ESI Findings - Round 1 | The revised tool does not explicitly state the equation to estimate LA = The long-term average GHG benefit. |
| Round 1 NCR/CL/OFI | CL: Please state the equation to estimate LA = The long-term average GHG benefit in the revised tool (M-ARR) |
| Round 1 Response from Project Proponent | IME: Equation 5 is used and this is not to calculate the "long-term average GHG benefit" but a "Long-term average carbon stock." |
| ESI Findings – Round 2 | Finding Open: Equation 5 of M-ARR estimates Long-term average carbon stock in baseline or project tree biomass within the project area (CAVG-TREE,i, see related finding below). Please insert equation following Page 45 of AFOLU requirements to estimate LA (The long-term average GHG benefit in the revised tool (M-ARR)) |
| Round 2 NCR/CL/OFI | NCR: Please insert equation following Page 45 of AFOLU requirements to estimate LA (The long-term average GHG benefit in the revised tool (M-ARR)) |
| Round 2 Response from Project Proponent | IME: Equation for LA has been added. Instead of a summation of emissions and removals in baseline and project scenario we use the annualized term NGR-ARR in 8.4.3 in REDD+ MF. Calculations of LTA for harvesting and submergence cases within the crediting period are now similar. For biomass loss due to submergence after the crediting period the equation for LA is not suited and the LTA is limited to tree carbon stocks. In REDD+ MF in section 8.4.3 we added: "Where ARR projects include harvesting, the loss of carbon due to harvesting must be included in the quantification of project |

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| | emissions. The maximum number of GHG credits available to projects does not exceed the long-term average GHG benefit, which is calculated using the procedure in Module M-ARR." |
| ESI Findings – Round 3 | <p>Finding Open: The equations used to calculate the long-term average (equation 2) GHG benefit does not follow Section 4.5.5 (i.e. an extra term for leakage is include).</p> <p>Section 3.1.9 states, "ARR or IFM projects with harvesting activities shall not be issued GHG credits above the long-term average GHG benefit maintained by the project. The long-term average GHG benefit shall be calculated as set out in Section 4.5.5".</p> |
| Round 3 NCR/CL/OFI | NCR: Please insert equation calculating long-term average GHG benefit as is set out in Section 4.5.5. |
| Round 3 Response from Project Proponent | Updatead files sent on 07/12/2017 |
| Final ESI Findings | <p>Finding addressed: The most recent version of M-ARR includes an equation (equation 3) for LA = The long-term average change in carbon stock as is set out in Section 4.5.5.</p> <p>The team agrees that leakage is actually included in section 4.5.5, where it states "Project scenario emission reductions and removals shall also consider project emissions of CO₂, N₂O, CH₄ and leakage".</p> |

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| Item 8 | |
| VCS AFOLU Requirements Version 3.4 (ARR) (08 October 2013) | SEE EQUATION ON PAGE 45 |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | <p>VMD0045 M-ARR_v1.1_public comment.docx (page 6)</p> <p>VMD0045 M-ARR_v1.1_ESI RD2_20170613 (equation 3)</p> |
| ESI Findings - Round 1 | The revised tool does not explicitly state the equation to estimate LC = The long-term average change in carbon stock. |
| Round 1 NCR/CL/OFI | CL: Please state the equation to estimate LC = The long-term average change in carbon stock in the revised tool (M-ARR) |
| Round 1 Response from Project Proponent | IME: Equation 5 is the same as the equation on p45 of the AFOLU requirements, it just has a notation adjusted to the application in M-ARR. |
| ESI Findings – Round 2 | <p>Finding Open: Equation 5 of M-ARR does not appear to be same as the equation on p45 of the AFOLU requirements for LC (The long-term average change in carbon stock). This equation should be used to determine the number of buffer credits to withhold is based on the change in carbon stocks only (not the net GHG benefit), as such the buffer credits are based on the long-term average change in carbon stock.</p> <p>The LC equation contains 2 terms:</p> <p>PC = The carbon stock in the project scenario (tCO₂e)</p> |

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| | BC = The carbon stock projected for the baseline scenario (tCO ₂ e) |
| Round 2 NCR/CL/OFI | CL: Please state the equation to estimate LC = The long-term average change in carbon stock (equation on p45 of the AFOLU requirements) in the revised tool (M-ARR). |
| Round 2 Response from Project Proponent | IME: Equation 5 is the same as the equation on p45 of the AFOLU requirements, it just has a notation adjusted to the application in M-ARR. |
| ESI Findings – Round 3 | <p>Finding Open: The equation used to calculate the LC = The long-term average change in carbon stock (equation 3) does not follow Section 4.5.5 (i.e. an extra term for leakage is included). There also appears to be a typo (i.e. LA is used for the dependent variable)</p> <p>Section 3.1.9 states, "ARR or IFM projects with harvesting activities shall not be issued GHG credits above the long-term average GHG benefit maintained by the project. The long-term average GHG benefit shall be calculated as set out in Section 4.5.5".</p> |
| Round 3 NCR/CL/OFI | NCR: Please insert equation calculating LC = The long-term average change in carbon stock as is set out in Section 4.5.5, and correct typo in equation 3 (LA) |
| Round 3 Response from Project Proponent | Updated files sent on 07/12/2017 |
| Final ESI Findings | Finding addressed: The most recent version of M-ARR includes an equation (equation 3) for LC = The long-term average change in carbon stock as is set out in Section 4.5.5. |

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| Item 9 | |
| VCS AFOLU Requirements Version 3.4 (ARR) (08 October 2013) | 4.6.9 Where deforestation increases outside the project area due to leakage from project activities, the effects of this deforestation on all carbon pools shall be assessed and quantified, unless determined to be de minimis (as set out in Section 4.3.3) or conservatively excluded (as set out in Section 4.3.4). |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VM0007 REDD+MF_v1.6_public comment.docx (Section 4.5.5) |
| ESI Findings - Round 1 | Section 4.5.5 of the methodology does not appear to properly account for deforestation that may increase outside of the project area. Section 4.5.5 of the methodology states, " <i>For tidal wetlands restoration project activities, prior to the project start date, the project area must meet the following conditions: b) Is under a land use that could be displaced outside the project area (e.g., timber harvesting), although in such case, emissions from this land use shall not be accounted for.</i> " It is not clear why land uses that could be displaced outside the project area shall not be accounted for. This is a classic example of leakage that shall be included in GHG emissions and/or removals estimated per section |

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| | 3.1.5 of the VCS standard and, is required to be accounted for per section 4.6.9 of the AFOLU requirements. |
| Round 1 NCR/CL/OFI | NCR: Please provide a mechanism to assess and quantify the effects of deforestation that increases outside the project area due to leakage from project activities on all carbon pools, that is not determined to be de minimis (as set out in Section 4.3.3) or conservatively excluded (as set out in Section 4.3.4). |
| Round 1 Response from Project Proponent | <p>IME: Indeed this may look as if a classical leakage emission would not be accounted for. These applicability conditions were copied from VM0033, where, like here, leakage related to WRC restoration projects is excluded by setting certain applicability conditions (see footnote 19). If activity shifting could occur, not accounted for are the baseline emissions from the activity within the project area. We now added 'baseline' to 'emissions' to help clarify this. Any potential leakage emission would be compensated by not accounting baseline emissions. In this approach, a 'stop-loss' component would become null and void.</p> <p>If activity shifting in reality does happen, the project does not benefit since the project was not allowed to account for the emissions associated with the activity. If activity shifting in reality does not happen, the approach is conservative because the project was not allowed to account for the emissions that were in fact a benefit of the project.</p> <p>Note that this applicability condition was included for projects restoring tidal wetlands that may gain significant GHG removals far exceeding any potential leakage loss. Projects just focussing on stop-loss and facing activity shifting would not result in any emission reduction. In discussions with validators of VM0033 and the VCS (Sam Hoffer) this was considered a valid approach.</p> |
| Final ESI Findings | See item 1. No finding was issued, and the item was closed. See discussions with VCS, Silvestrum, and ESI on row 173 from the standard tab that resolved issue. |

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| Item 10 | |
| VCS AFOLU Requirements Version 3.4 (WRC) (08 October 2013) | 4.2.16 Eligible WRC activities are those that increase net GHG removals by restoring wetland ecosystems or that reduce GHG emissions by rewetting or avoiding the degradation of wetlands. The project area shall meet an internationally accepted definition of wetland, such as from the IPCC, Ramsar Convention on Wetlands, those established by law or national policy, or those with broad agreement in the peer-reviewed scientific literature for specific countries or types of wetlands. Common wetland |

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| | types include peatland, salt marsh, tidal freshwater marsh, mangroves, wet floodplain forests, prairie potholes and seagrass meadows. WRC activities may be combined with other AFOLU project categories, as further explained in Section 4.2.20. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VM0007 REDD+MF v1.6, sec 4.5 and section 3. |
| ESI Findings - Round 1 | WRC activities include rewetting and avoided degradation. No definition of wetland given, but definitions section says that definitions in the VCS Programs Definitions document are used. Definition for wetland in program definitions document does not refer to internationally or nationally accepted definitions. RLS 03 April 2017 |
| Round 1 NCR/CL/OFI | CL: Definition for wetland in Program Definitions v3.6 does not refer to internationally, nationally or other accepted definitions. Please identify the acceptable source of the definition for tidal wetlands. |
| Round 1 Response from Project Proponent | IME: There is a conflict between the AFOLU requirements and the Program Definitions. Formally, a methodology uses the definitions provided in the Program Definitions and the methodology only includes new definitions. To meet the AFOLU methodology requirements requires WRC methodologies to use the definition of wetlands that it provides despite the one in the Program Definitions. We like the definition in the WRC requirement (4.2.16) better than the one in the Program Definitions. The program definition is vague with respect to length and depth of saturation period, and the types of organisms, and most importantly, it only mentions water and plants, it doesn't mention wetland/hydric soil characteristics. A definition for wetland following 4.2.16 has been inserted in REDD+MF. |
| Final ESI Findings | Section 3 of the version of VM0007, file name VM0007 REDD+MF_v1.6_RD1_20170515.docx, includes the wording from AFOLU Requirement 4.2.16 for the definition of a wetland. Item closed. |

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| Item 11 | |
| VCS AFOLU Requirements Version 3.4 (WRC) (08 October 2013) | <p>4.2.17 Avoiding the degradation or conversion of a wetland can reduce GHG emissions by preventing the release of carbon stored in wetland soils and vegetation. Many wetlands rely on a natural supply of sediments to support soil formation. Sediment supply may be interrupted by a physical alteration to the landscape, such as a river diversion, canal construction or isolation of wetlands behind man-made structures (eg, road or rail embankments, levees or dams).</p> <p>Restoring wetland ecosystems reduces and/or removes GHG emissions by creating the necessary physical, biological or chemical conditions that enhance carbon sequestration. Activities that affect the hydrology of the project area are only eligible where changes in hydrology result in the accumulation or maintenance of soil carbon stock.</p> |

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| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VM0007 REDD+MF v1.6, sec 4.5 |
| ESI Findings - Round 1 | Applicability conditions exclude lowering water table unless open water is converted to wetlands, which increases and/or maintains SOC stock. Other changes in hydrology include rewetting, restoring tidal flow and otherwise managing hydrological conditions. 03 April 2017. |
| Round 1 NCR/CL/OFI | CL - Project activities that include changing hydrological conditions appear to be likely to increase or maintain SOC stock, however, all potential changes to hydrology may not be fully imagined by the validators. Please state that changes in hydrology must result in accumulation or maintenance of SOC stock. |
| Round 1 Response from Project Proponent | IME/BN/KD: Requirement 4.2.17 has a limited scope - i.e. RWE projects geared towards C sequestration - but there is another category of projects focussing on hydrology interventions increasing the salinity and therewith reduce CH4 emissions. A decrease in SOC stocks cannot a priori not be excluded but it is a by-effect that needs to be accounted for, not part of the principle of the intervention. We added a bullet point to this end. The VCS noted that "the ordering in section 4.5 makes it somewhat difficult to follow. It should be clear from the structure of the applicability conditions that APWD and AUWD above are subsets of CIW. This does not need to be updated before public comment, but is something we'll keep an eye out for in the future." We have reordered this section. |
| Final ESI Findings | In the second bullet point of section 4.5.1, in the version of VM0007, file name VM0007 REDD+MF_v1.6_RD1_20170515.docx, the methodology authors included a statement that changes in hydrology must result in accumulation or maintenance of SOC stock, but specifying that projects meant to reduce CH4 emissions by increasing salinity are not bound by this requirement. Item closed. |

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| Item 12 | |
| VCS AFOLU Requirements Version 3.4 (WRC) (08 October 2013) | 3) Non-human induced elevation of non-vegetated wetlands to build vegetated wetlands. Deltaic systems with high sediment load from rivers often do this naturally, and this should be counted as part of the baseline. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | BL-TW v1.0, sec |
| ESI Findings - Round 1 | Non-human induced elevation of non-vegetated wetlands is not discussed in BL-TW or the proposed update of VM0007. |
| Round 1 NCR/CL/OFI | NCR: Please address non-human induced elevation of non-vegetated wetlands in BL-TW or another appropriate place in the REDD+MF methodology or associated modules. |
| Round 1 Response from Project Proponent | BN/KD/MO- Added text to section 5.1.1 of BL-TW to address this issue. Also added language for seagrasses in X-STR. |

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| ESI Findings – Round 2 | In section 5.1.1 of the version of BL-TW, file name BL-TW_v1.0_ESI RD1_20170515.docx, states, under the subtitle of climate variables: ". Project proponents must account for the possibility of non-human induced elevation of non-vegetated wetlands to build vegetated wetlands. Deltaic systems with high sediment load from rivers often do this naturally, and this must be counted as part of the baseline." No reference to this was found in X-STR, as mentioned in PP response. |
| Round 2 NCR/CL/OFI | CL: Please direct the validators to the change in the updated version of X-STR. |
| Round 2 Response from Project Proponent | IME: New text for seagrasses added to section 5.9 in X-STR |
| Final ESI Findings | The version of X-STR with the file name "VMD0016 x-STR_v1.2_ESI RD2_20170613.docx" includes instruction to the project developer to determine whether erosion or accretion is occurring in the baseline scenario. Areas of sea grass meadow may be stratified based on whether bathymetric changes in the baseline, and no credit can be taken for seagrass meadow that would expand in the baseline case. Item closed. |
| Item 13 | |
| VCS AFOLU Requirements Version 3.4 (WRC) (08 October 2013) | 4.4.17 Where relevant, methodologies shall establish criteria and procedures for identifying wetland erosion and/or migration resulting from sea level rise in the baseline scenario on the basis of wetland maps, historical trend data, future projection of sea level rise and how changes in management would impact carbon stocks. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | BL-TW, v1.0, sec. 5.2; VMD0016 X-STR v1.2 |
| ESI Findings - Round 1 | Section 5.2 of BL-TW establishes procedures for accounting for submergence and erosion. Stratification module offers general guidelines in what must be considered for future projections, and general guidelines for what must be considered for migration. No procedures are explained. |
| Round 1 NCR/CL/OFI | OFI: See findings. While it is not feasible to offer explicit procedures, applicable in all situations, to identify and project erosion and migration, examples of techniques that are used or might apply to wetland migration would be useful for further guidance. |
| Round 1 Response from Project Proponent | SC/IME: We are not very comfortable providing generalities for a topic that is known for its diversity, but section 5.8 of X-STR already had such guidance to direct the work of the project proponent concerning stratification and SLR. In 5.2 point 2 we mistakenly referred to section 5.3.1 where it should have been 5.8 of X-STR. The validator already noticed that the guidance in 5.8 in X-STR is relevant for 5.2 in BL-TW. In addition, in BL-TW we now provide guidance by referring to a model that can be used for the assessment. |
| Final ESI Findings | Section 5.8 of VMD0016 does include some guidance regarding wetland migration, and the version of BL-TW, dated 15 May 2017 (file BL-TW_v1.0_ESI |

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| | RD1_20170515.docx) now refers to section 5.8 of VMD0016 for guidance. In addition, BL-TW refers to a model that may help describe vertical building of the marsh with SLR. Item closed. |
| Item 14 | |
| VCS AFOLU Requirements Version 3.4 (WRC) (08 October 2013) | 2) AUWD: The potential for leakage shall be identified and the project shall address the socio-economic factors that drive wetland degradation. Leakage shall be calculated by monitoring wetland areas surrounding the project and other wetland areas within the country susceptible to leakage from project activities. |
| Evidence Used to Assess (Location in PD/MR or Supporting Documents) | VMD0010 LK-ASU v1.1, sec. 5 |
| ESI Findings - Round 1 | Leakage is calculated by monitoring the lands in the leakage belt. There is also a way to calculate leakage beyond the leakage belt but within the nation. No requirement to address the socio-economic factors that drive degradation. |
| Round 1 NCR/CL/OFI | NCR: Please include a requirement to address the socio-economic factors that drive wetland degradation. |
| Round 1 Response from Project Proponent | IME: In LK-ASU, an important tool in assessing the role of deforestation/degradation agents is the participatory rural appraisal (PRA), which involves socio-economic factors. Note that LK-ASU is beyond the scope of the validation. The requirement referred to (4.6.21) is the same as for REDD AUDD (4.6.15). If LK-ASU is approved to work for REDD, it should be likewise for WRC. That was our approach with respect to leakage. |
| Final ESI Findings | The requirements for REDD AUDD are indeed identical to that of AUWD, and the participatory rural assessment, as described in VMD0010, was deemed sufficient in addressing the socio-economic factors driving degradation. Item closed. |

General Comments

| Item | Comments/Findings | Evidence Used to Assess (Location in Methodology or Supporting Documents) | Round 1 NCR/CL/OFI | Response from Methodology Developer | ESI Findings - Round 2 (what was assessed; what did we find?) |
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| 15 | Nothing appears to be noted in M-TW regarding additional conditions. | VM0007 REDD+MF v1.6, sec. 4.5.2 | Bullet states, "Additional conditions are outlined in Modules BL-TW and M-TW," but no additional conditions | BN/KD-References to BL-TW and M-TW deleted | The reference to BL-TW and M-TW, under the subject of AUWD projects, was removed in the version of VM0007, |

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| | | | were found in M-TW. Please correct. | | dated 15 May 2017. Item closed. RLS 25 May 2017 |
| 16 | Nothing appears to be noted in M-TW regarding additional conditions. | VM0007 REDD+MF v1.6, sec. 4.5.3 | Bullet states, "Additional conditions are outlined in Modules BL-TW and M-TW," but no additional conditions were found in M-TW. Please correct. | BN/KD-References to BL-TW and M-TW deleted | The references to BL-TW and M-TW, under the subject of APWD projects, was removed in the verion of MV0007, dated 15 May 2017. Item closed. RLS 25 May 2017 |
| 17 | BL-TW does not use the same modifiers for the variables in eq. 6, yet the text states it is from BL-TW. | VM0007 REDD+MF v1.6 sec. 8.4.4 | Please ensure modifiers for variables agree across modules. | BN/KD-Resolved, added -TW to appropriate modifiers for GHG-BSL and GHG-WPS in BL-TW and M-TW | Modifiers in BSL-TW and M-TW were changed to agree with the parent methodology in the versions of BL-TW and M-TW, dated 15 May 2017. Item closed. |
| 18 | M-TW does not appear to include changes in the drainage layout and climate variables in its monitoring procedures for periodically reassessing the project baseline. | VM0007 REDD+MF v1.6 sec. 9.3.2 | Under the WRC heading, text describes requirements for reassessing the baseline as specified in M-PEAT or M-TW. M-TW includes no information on this. Please address. | IME: Procedures in 9.3.2 were supposed to refer to BL-PEAT and BL-TW as these modules include baseline procedures. References amended accordingly. We moved this text to TASK 2 because it | The version of VM0007 v1.6, dated 15 May 2017 was changed to refer to BL-TW and BL-PEAT. BL-TW states, "Based on the reassessment criteria specified in REDD+ MF, the revised baseline scenario must be |

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| 19 | Nothing appears to be noted in M-TW regarding additional conditions. | VM0007 REDD+MF v1.6, sec. 4.5.2 | Bullet states, "Additional conditions are outlined in Modules BL-TW and M-TW," but no additional conditions were found in M-TW. Please correct. | BN/KD-References to BL-TW and M-TW deleted | The reference to BL-TW and M-TW, under the subject of AUWD projects, was removed in the version of VM0007, dated 15 May 2017. Item closed. |
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| | | | | GHG-WPS in BL-TW and M-TW | methodology in the versions of BL-TW and M-TW, dated 15 May 2017. Item closed. |
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