PLAN VIVO METHODOLOGY ASSESSMENT REPORT

PM001

Agriculture and ForestryCarbon Benefit Assessment Methodology

Version 3.0
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Earthood

Earthood Services Pvt Ltd

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Contents

1. Introduction

1.1. Objective

The assessment's goals are to validate the Methodology for Agriculture and Forestry Carbon Benefit Assessment and to evaluate the processes for calculating the greenhouse gas (GHG) reductions. For the assessment of the reduction in GHG emissions, the methodology employs a module- and tool-based approach, with each module and tool requiring validation in accordance with PV Methodology Standard Version 1.0.

1.2. Summary Description of the Methodology

The methodology follows International Guidelines for good practices of the IPCC 2019[1] (a refinement to IPCC GPG 2006) and adheres to the guidelines and tools used under CDM for testing significance of GHG emissions in the implementation of smallholder agriculture and community forestry projects that generate Plan Vivo Certificates. This methodology offers information on carbon accounting techniques that can be applied to community forestry and smallholder agriculture programmes that result in Plan Vivo Certificates (PVCs). It is a modular methodology, and after the Plan Vivo methodology approval process, project coordinators or other parties may propose modules or tools for inclusion in the approach. Plan Vivo will also take into account any additions or modifications to the approach put forth by the project coordinators or other parties.

2 VVB Assessment Procedure

Plan Vivo has contracted Earthood Services Private Limited to conduct the validation assessment on Plan Vivo's Methodology PM001: Agriculture and Carbon Benefit Assessment Methodology. The purpose and scope of the assessment was to conduct an independent assessment and validate the Methodology: PM001 Agriculture and Carbon Benefit Assessment Methodology. The methodology provides procedures of carbon accounting which could be used in smallholder agriculture and community forestry projects that generate Plan vivo Certificates (PVCs).

The methods and requirements include document reviews, literature reviews and evidence provided by the Methodology Developer. Inconsistencies, clarification and other doubts were raised as findings in the form of Clarification Request (CL), Corrective Action Request (CAR), and New Information Request (NIR).

As per the requirements in section 1.1 of Methodology Requirement Standard ver 1.0 – the proposed methodology caters to all the fundamental requirements for the baseline, additionality, and uncertainty analysis satisfactorily. The sources of Carbon Pool and Emission has been adequately mentioned under Section 2.0 of the methodology.

2.1 VVB Assessment Tools/Reference Document:

- Plan Vivo Standard Methodology Requirement version 1.0
- Plan Vivo Standard 5.0 Methodology/Module/Tools Template

[1] https://www.ipcc-nggip.iges.or.jp/public/2019rf/index.html

- Plan Vivo Standard Glossary 1.0
- For Nested Tools - Borrowed from CDM A/R Activities for the appropriateness of the application under PM001 Methodology

2.1.1 Assessment Methods

The method used for assessment was undertaken by a competent team of Earthhood and comprised of the following:

- The desk review of documents and evidence submitted by the client in context of the reference of Standard, Methodology, and other evidence.
- Reporting Assessment Findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate.
- Preparing a draft Assessment Opinion based on the raised findings and conclusions.
- Technical review of the draft Assessment Opinion along with other documents as appropriate by an independent competent technical review team.
- Finalization of the third-party Assessment Opinion (this report), which serves as the overall validation conclusion.

Findings were raised after the assessment and the detection of certain inconsistencies and findings were raised based in their severity. The findings are raised in the form of CL (Clarification Request), CAR (Corrective Request) and NIR (New Information Request) which are added in Appendix A attached at the end of the report. The methodology is module and tool dependent, and therefore refers to different modules and tools. Since the sections as available under the PV Methodology Template v5.0 has nested modules and tools, the assessment of individual modules and tools has been done collectively, as well as individual module/tool assessment for data sufficiency and completeness of parameters.
Documents Reviewed are:

Sl No.	Title of the document	Reference of the Document	Source
1	PT001- Smallholder Agriculture Monitoring and Baseline Assessment	Plan Vivo	https://www.planvivo.org/methodologies
2	PT002- Estimation of carbon benefits from REDD in community managed forest	Plan Vivo	https://www.planvivo.org/methodologies
3	PU001- Estimation of baseline and project GHG removals by carbon pools in Plan Vivo projects	Plan Vivo	https://www.planvivo.org/methodologies

Sl No.	Title of the document	Reference of the Document	Source
4	PU002- Estimation of baseline and project GHG removals by carbon pools in Plan Vivo projects	Plan Vivo	https://www.planvivo.org/methodologies
5	PU003- Estimation of baseline and project GHG emissions from emission sources in Plan Vivo projects	Plan Vivo	https://www.planvivo.org/methodologies
6	PU004- Estimation of GHG emissions from leakage in Plan Vivo projects	Plan Vivo	https://www.planvivo.org/methodologies
7	PU005- Estimation of uncertainty of carbon benefit estimates in Plan Vivo projects	Plan Vivo	https://www.planvivo.org/methodologies
8	AR-TOOL02- Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities.	UNFCCC website	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-02-v1.pdf
9	AR-TOOL04- "Tool for testing significance of GHG emissions in A/R CDM project activities	UNFCCC website	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-04-v1.pdf
10	Plan Vivo Methodology Requirement	Plan vivo standard	https://www.planvivo.org/standard-documents
11	Plan vivo Glossary	Plan Vivo standard Documents	https://www.planvivo.org/standard-documents
12	SHAMBA model description	Plan vivo standard documents	https://www.planvivo.org/standard-documents

Sl No.	Title of the document	Reference of the Document	Source
13	List of CDM DOE	UNFCCC website	https://cdm.unfccc.int/DOE/list/index.html
14	AR-ACM003	UNFCC website	https://cdm.unfccc.int/methodologies
15	AR-AM0014	UNFCC website	https://cdm.unfccc.int/methodologies
16	AR-TOOL12	UNFCC website	https://cdm.unfccc.int/methodologies
17	AR-TOOL14	UNFCC website	https://cdm.unfccc.int/methodologies
18	AR-TOOL16	UNFCC website	https://cdm.unfccc.int/methodologies
19	IPCC 2003	-	www.ipcc-nggip.iges.or.jp
20	FAO 1998	-	https://www.fao.org
21	AR-TOOL05	UNFCC website	https://cdm.unfccc.int/methodologies
22	AR-TOOL07	UNFCC website	https://cdm.unfccc.int/methodologies
23	AR-TOOL08	UNFCC website	https://cdm.unfccc.int/methodologies
24	AR-TOOL15	UNFCC website	https://cdm.unfccc.int/methodologies

2.1.2 Resolution of Findings

Based on the Plan Vivo Methodology Requirement Standard 1.0 the VVB has assessed the Methodology and all the relevant Methodology/Modules/Tools, and the nested methodological elements as per the Plan Vivo Methodology Standard 5.0 Template. All the relevant information has been consistently applied within the applicable sections in the Plan Vivo document. Overall, the instructions in the methodology template have been followed and the methodology developer has ensured that the methodology's various criteria and procedures are documented in the appropriate sections of the template. Inconsistencies under each section were duly communicated in the form of CAR or NIR through the assessment of Methodology and individual modules and tools, which can be found in Annexure I-VIII. The overall validation finding is summarised under 5 Assessment Conclusion.

2.2 Assessment Team

Earthood Services Private Limited is accredited by Executive Board (EB) of Clean Development Mechanism (CDM) as a Designated Operational Entity (DOE). The accreditation has been granted for 11 different sectoral scopes including AFOLU sector. The information about Earthood Services Private Limited's

accreditation and sectoral scope is available at the following UNFCCC interface https://cdm.unfccc.int/DOE/list/DOE.html?entityCode=E-0066 . The personnel who worked on the methodology had sufficient knowledge and experience of working on the projects in AFOLU sector.

The Team Leader, Shreya Garg is qualified by ESPL in Validation and Verification of Clean Development Mechanism Requirements (CDM projects) and other voluntary schemes as VCS, CCB and GS. She has experience of working in carbon projects, including but not limited to CDM, VCS, GS and GCC projects of more than 10 years for various sectors and methodologies. She attained her master's degree in Climate Science & Policy. She has been qualified as per the evaluation process of ESPL for competency for CDM/VCS/GS/GCC. Thus, she has relevant competence and work experience.

Dr Parul Srivastava is Technical Area Expert for the assessment process. She holds PhD in Forest Ecology and Environment from Forest Research Institute Deemed University, Dehradun. She has more than 20 years of experience in the field of Forestry and AFOLU Sector Projects.

Riya Sharma is a Validator in this project. She has been doing carbon projects under CDM/VCS/GS/GCC programs in ESPL. She attained her masters in Biodiversity and projects. She has a relevant competence and work experience and has been qualified as per the evaluation process of ESPL for competency for programs CDM/VCS/GS/GCC.

Rahi Sarkar is a trainee validator in this project. She has been doing carbon projects under VCS/GS/GCC programs in ESPL. She has attained her masters in Ecology and Environmental Studies. She has relevant competence and work experience.

Waris Hooda is a Trainee Validator and GIS Expert. He has been doing carbon projects under CDM/VCS/GS/GCC programs in ESPL. He has attained his masters in Geo-Information Science and Earth Observation. He is experienced in forest restoration and nature-based solutions projects.

Deepika is a Trainee (Validator) in this project. She has experience of working on carbon projects, including but not limited to CDM, VCS, GS and GCC projects for more than 1 years for various sectors and methodologies. She attained her master's in forestry and specialization in Sustainable Forest management. She worked for forest restoration project, agricultural projects, and nature-based solutions projects. She has relevant competence and work experience and has been qualified as per the evaluation process of ESPL for competency for programs CDM/VCS/GS/GCC.

Technical Review of the project is done by Kaviraj Singh. He is the Founder and Managing Director of the Earthood Services Private Limited. He has done his PhD in Environmental Engineering from IIT, Delhi. He has an experience of more than 16 years working in the field of Climate Change and carbon market. He been qualified as per the evaluation process of ESPL for competency for CDM/VCS/GS/GCC. Thus, he has the relevant competence and work experience.

3 Assessment Findings

3.1 Assessment of the Methodology

The methodology aims to calculate carbon emissions and track Plan Vivo Certificates (PVCs) for projects related to small scale farming and community-based forestry. The methodology is flexible and can be adapted to various project types and contexts. It allows for customization and the addition of specific modules or tools to suit the needs of different projects.

VVB Assessment

1. Per Section 1 of the Meth Standard 5.0 Template - Provide a short summary of the scope and applicability of the methodology, and the procedures and data used to estimate climate benefits. However, the summary section is not compliant with the procedures and data used to estimate climate benefit. CAR 01 has been raised for the completeness of the summary section as per the standard.
2. The template suggests including short summary of the scope and applicability. However, the conditions under which this methodology is applicable needs to be explained clearly under this section.

A	Means of validation	PV Standard Methodology/Module/Tools Template v5.0
B	Findings	The summary section is not compliant with the procedures and data used to estimate climate benefit.
C	Conclusion	CAR 01 has been raised for the completeness of the summary section as per the standard and has been closed based on the revision of the methodology document PM001 (Annexure I -VIII) **CAR 01 is closed.**

3.2 Assessment of Carbon Sources

The Carbon Pool and Emission sources have been listed as independent modules in the methodology.

VVB Assessment Conclusion

The criteria and methods for identifying these pools and sources, according to section 2.2.1 of the Plan Vivo Standard Methodology Requirement version 1.0, are not properly cited for the modules or tools that must be used during the assessment. For the completeness of the Meth Document CAR 02 has been raised.

A	Means of validation	Plan Vivo Standard Methodology Requirement version 1.0
B	Findings	Proper citation requested for the Carbon Pool and Sources of Emission
C	Conclusion	For the completeness of the Meth Document CAR 02 has been raised and closed based on the response in the revised Methodology document (Annexure I-VIII). **CAR 02 is closed**.

3.3 Assessment of Definitions

PM001 as such lists out several definitions that were not available under the Plan Vivo Standard Glossary 1.0 have been used across the Methodology/Modules/Tools.

VVB Assessment Conclusion

As per template additional definitions have been presented under the definitions section, however, a few definitions for certain term that have been frequently used in the document are not available. Some of the definitions are very generic in nature and do not qualify the scientific definition of it e.g. *Forest*. Though the Meth Standard template doesn't ask for any reference for the borrowed definitions, however, appropriately referenced definitions will be more acceptable.

A	Means of validation	Plan Vivo Standard Glossary 1.0
B	Findings	Globally accepted definition with proper citation is requested
C	Conclusion	Some of the definitions were inconsistent and CL#01 and CL#02 were raised for the clarification of such terms. Meth Developer has updated and clarified the terms and hence CL#01 and CL#02 are closed. NIR has been raised for globally accepted definitions used across methodology/modules and tools. Also, provide definition of the terms like 'Uncertainty' used frequently in the document and appropriately cite the definitions provided under the definition section. **Based on the revision, the NIR is closed (Annexure I-VIII)**

3.4 Applicability Conditions

3.4.1 Project Interventions

The methodology provides insight about the interventions that take place on forest land, cropland or grassland (Agroforestry and farm forestry; Changes to cultivation practices; Changes to livestock and manure management; Afforestation and reforestation; Forest restoration; Forest protection; and Improved Forest management) and applicability conditions through various modules (PU001, PU002,

PU003, PU004 and PU005). The methodology is applicable to all types of forest including forested wetlands such as swamp forest and mangroves, and all types of croplands and grassland. However, there are certain areas where project activities cannot be performed and those include flood irrigation, drainage, or other activities that affect the ground water table.

VVB Assessment Conclusion

The methodology can be used to produce future, reported, and verified Plan Vivo Certificates from such project interventions which generate net GHG removals.

For project interventions that produce GHG reductions such as forest protection and improved project management it can only produce rPVC or vPVCs.

The following summarizes applicability conditions as written, changes made during the revision of the methodology, and the final evaluation of those changes during the assessment (Plan Vivo Standard Methodology Requirement 1.0).

S.No.	Applicability Criteria	Assessment
1.	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied	The methodology is applicable for all the project interventions that takes place on forest land, grassland, or cropland. Or that result in the conversion of: Agroforestry and farm forestry, Changes to cultivation practices, Changes to livestock and manure management, Afforestation and reforestation, Forest restoration, Forest protection and Improved Forest Management. The methodology applies to all types of forest including swamp and wetlands and all types of croplands and grassland.
2.	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	The methodology can be used to produce future, reported, and verified Plan Vivo Certificates from such project interventions which generate net GHG removals. For project interventions that produce GHG reductions such as forest protection and improved project management it can only produce rPVC or vPVCs.

A	**Findings**	**CAR#02 was raised to understand the scope of interventions the methodology is applicable to.** **The modules do provide appropriate applicability conditions, however, as outlined in the Plan Vivo Standard Methodology Requirements version 1.0, they are missing the geographical locations for each intervention.**
B	Means of validation	PP has responded by clarifying where this methodology is applicable to and what scope the interventions cover in section 4.1 of PM001
C	Conclusion	Based on the clarification the CAR#02 stands closed, however, the Meth Developer is requested to include the geographic locations for each intervention. Based on the second response that there is no geographic restriction on any interventions, the request is addressed, and no further clarification needed.

3.4.2 Certificate Types

The certificate types and approaches for the issuance of the future, reported and verified Plan Vivo Certificates (fPVCs, rPVCs and vPVCs) from project interventions that generate net GHG removals (i.e. afforestation, reforestation and forest restoration) certificates have been discussed as per the Methodology Requirements.

VVB Assessment Conclusion

As per the Methodology Requirement sections 2.1.3 to 2.1.6 the guidance for producing the certificates – fPVC, rPVC and vPVC is missing and needs to be added.

A	**Means of validation**	**PV Standard Methodology Requirement Ver 1.0**
B	Findings	As per the Methodology Requirement sections 2.1.3 to 2.1.6 the guidance for producing the certificates – fPVC, rPVC and vPVC is missing and needs to be added
C	Conclusion	CAR 04 has been raised to include detailed guidance for the issuance of Plan Vivo Certificates. **CAR 04 has been closed upon the revision of the PM001 methodology document (Annexure I-VIII)**

3.5 Carbon Pools and Emissions Sources

This section provides the list of Carbon Pools and Emissions Sources along with the procedural tool for determining eligible carbon pools and emission sources as described under, "*Tool for testing significance of GHG emissions in A/R CDM project activities* (AR-TOOL04 v1.0)" (that provides applicability condition for the assessment of the decreases in carbon pools and increases in emissions that may be neglected shall be less than 5% of the total decreases in carbon pools and increases in emissions, or less than 5% of net anthropogenic removals by sinks, whichever is lower).

VVB Assessment Conclusion

The tool meets the Plan Vivo Standard Methodology Requirement (1.0) sub- section 2.2.4 Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project.

A	**Findings**	**CAR 03 was raised to understand about the mandatory sources of carbon pools which are to be measured in the project interventions.**
B	Means of validation	PP has provided clarification stating that not all carbon pools are mandatory only those which have a higher net emission compared to the baseline scenario are to be added.
C	Conclusion	**The clarification was substantial and the CAR#03 was closed (Annexure I-VIII).**

3.6 Baseline Scenario and Additionality

This section of the methodology provides a general description for the Baseline Scenario and Additionality assessment and has a nested tool AR-TOOL02 v1.0 for the most likely land use scenario in the absence of project interventions and the additionality of the project interventions should be determined using that tool. It also provides timeline as every 10 years for the baseline scenario and additionality reassessment.

VVB Assessment Conclusion

This section does not provide the appropriate approaches or guidance for the project developer as per the PV Standard Methodology Template ver.5. which clearly asks to – "describe the approaches for: i) describing the most likely land use and land management in the absence of project intervention(s) for each project area; ii) demonstrating that project interventions would not be feasible for project participants to implement in the absence of the project; and iii) updating the baseline scenario and re-assessing additionality at least every 10-years throughout the project period to incorporate the impacts

of any material changes that affect the most likely land use and land management scenario in the absence of Project Interventions e.g. policy or legal changes, or new developments that affect the Project Region".

Additionally, the PV Standard Methodology Requirement ver 1.0 section 2.3 provides guidance on the baseline and additionality approaches which methodology developer has revised and included appropriate approaches for the baseline and additionality.

A	**Means of validation**	**PV Standard Methodology Template ver.5 and PV Standard ver 1.0**
B	Findings	Cl-03 was raised to understand how AR-TOOL02 was used for other project interventions with respect to baseline scenario and additionality.
C	Conclusion	**PP has clarified how baseline and additional reassessment should be carried out by AR-TOOL02Based on the PP clarification the CL#03 stands closed (Annexure I-VIII)**

3.7 Carbon Baseline

This section provides detailed information about the procedures for estimating the carbon baseline for all relevant carbon pools and emission sources. The section has nested modules PU001 (equation 1, PU002 (equation 2) and PU003 (equation 3) that provide estimation criteria for baseline removals by carbon pools (for afforestation, reforestation, and forest restoration), baseline emissions from carbon pools (for forest protection and forest management) and baseline GHG emissions from emission sources, respectively. It also provides modules and tools to apply in one or more than one approaches:

i. Measurements in matched control areas e.g., biomass inventory plots.
ii. Modelling based on observations in matched control areas e.g., projection of historical trends.
iii. Modelling based on expected changes within the project areas e.g., tree or stand growth models, or process-based models of changes in SOC.
iv. Emission factors applied to activity data that represent conditions under the baseline scenario.

VVB Assessment Conclusion

This section provides equations that can subsequently be used through modules by adopting appropriate methods for the estimation of Baseline Carbon Pool. A detailed assessment and conclusions shall be provided by way of assessment of individual modules.

A	**Means of validation**	**Assessment of individual modules for their data and parameters**
B	Findings	Individual findings to be included in the modules itself. Two NIR (NIR#02 and NIR #03) under PM001 Methodology assessment sheet were raised for approaches for the most likely land use and land management in the absence of project interventions and inclusion of the details for the baseline approaches under this section of the

		methodology. Baseline was assessed in all the modules, however, a detailed description was given and elaborated under PM001.
C	Conclusion	**Based on the revision and acceptance of the approaches both the NIR were satisfactorily closed (Annexure I-VIII)**.

3.8 Project Emissions and Removals

The Change in carbon stocks and GHG emissions under the project scenario for each project area are calculated with Equation 4 (Calculation of project removals), Equation 5 (Calculation of project GHG emissions from carbon pools) and Equation 6 (Calculation of project GHG emissions from emission sources). The same equations are used for estimation of expected and actual project emissions and removals. Procedures for estimating parameters in Equation 4, Equation 5 and Equation 6 are provided in modules **PU001**, **PU002**, and **PU003** respectively.

3.8.1 Expected Project Emissions and Removals

VVB Assessment Conclusion

The Methodology describes that expected net GHG emissions/removals under the project scenario in each year of the project period can be estimated by applying the procedures in an approved module or tool. It also provides three approaches that can be used to assess the carbon benefits. However, it is not clear how the approaches are in conformance with the PV Standard Meth Requirement section 1.2.5 for fPVCs.

A	**Means of validation**	**PV Standard Methodology Template ver.5 and PV Standard ver 1.0.**
B	Findings	CAR 05 Methodology Developer is requested to elaborate the details on the issuance of the certificates under respective approaches and how these approaches meet the criteria of conservative estimation.
C	Conclusion	**Based on the revision of the section the CAR 05 stands closed** (Annexure I-VIII).

3.8.2 Actual Project Emissions and Removals

The methodology provides a generic statement on net GHG emissions/removals under the project scenario that must be estimated at least every five-years throughout the project period, by applying the procedures in an approved module or tool.

VVB Assessment Conclusion

However, as per the PV Standard Methodology Template ver 5.0 – "Identify carbon indicators and describe the procedures for estimating project emissions and removals for each relevant carbon pool and emission source in each year of the project period", specific indicators and modules for the assessment of the same is not referenced under this section.

A	Means of validation	PV Standard Methodology Template ver 5.0
B	Findings	**CI-04 was raised for clarifying the tenure of the net GHG emissions or removals, PP has given clarifications under section 8.2 of PM001.** CAR 06 Specify the indicators and provide reference to appropriate module for the same.
C	Conclusion	**The clarification was found to be satisfactory and hence CL#04 was closed.** **CAR 06 is now closed (Annexure I-VIII).**

3.9 Leakage

Provides nested tool AR-TOOL04 v1.0 for the procedures that can be used to demonstrate the significance of potential leakage emissions.

3.9.1 Potential leakage emissions

The methodology describes the procedures for estimating potential leakage and/or applying an appropriate leakage discount factor as per the PV Methodology Template Version 5.0. Also, it provides approaches references through modules that can be referred for:

i. Modelling based on expected activity displacement and/or market leakage (PU004)
ii. Leakage discount factor based on characteristics of the project area and project intervention (PU004)

VVB Assessment Conclusion

A detailed assessment has been provided under the assessment of Module PU004.

3.9.2 Potential leakage emissions

Provides nested module PU004 and modelling approaches for the leakage assessment that occurs during a project period. The approaches that can be referred for the leakage assessment:

i. Measurement of activity shifting and/or market leakage (**PU004**).
ii. Modelling based on expected activity shifting and/or market leakage with activity data from the project area.
iii. Leakage discount factor based on characteristics of the project area and project intervention (**PU004**).

VVB Assessment Conclusion

A detailed assessment has been provided under the assessment of Module PU004. It provides approaches for leakage under section 5.1 and 5.2. Refers AR-TOOL04 v1.0 to demonstrate the potential leakage and AR-TOOL15 v2.0 to estimate leakage from displacement of pre-project agricultural activities. In addition, for procedures in PT002 v2.0 to estimate leakage from displacement of deforestation and degradation

A	Means of validation	Nested module PU004
B	Findings	Assessed and findings were addressed under the PU004 assessment. CAR#01 was raised under PU004 assessment procedure for - Reduction in production (or use, income etc.) expressed as a proportion of production (or use, income etc.) expected under the baseline scenario to understand the proportion unit?
C	Conclusion	Upon satisfactory response – that a proportion of the production expected under the baseline scenario. i.e. if its 50% of the baseline value, the parameter entered should be 0.5 - the finding stand closed based on the revision and response.

3.10 Calculation of Carbon Benefits

The net-increase in carbon stocks and/or reduction in greenhouse gas emissions relative to the carbon baseline as a result of project Interventions (or 'carbon benefit') is calculated with Equation 7 for the carbon benefit from removals, Equation 8 for the carbon benefit from reduced emissions from carbon pools, and Equation 9 for the carbon benefit from reduced GHG emissions from emission sources. Total carbon benefit is calculated with Equation 9. Calculation of the parameters used in these equations has been provided under the in Sections 7 (Carbon Baseline), 8 (Project Emissions and Removals) and 9 (Leakage).

VVB Assessment Conclusion

The methodology has been explained through modules for emissions and removals both under the baseline scenario and under the project scenario. Equation 9 provided in the meth for the assessment of the total carbon benefit includes – all the carbon benefit of the project arising from emission sources up to year *y* and Carbon benefit of the project from carbon pools up to year *y*. This covers all the valid sources of GHG emissions, removals both under baseline scenario and under project scenario. The methodology duly incorporates leakages under the project scenario. The criteria and procedures under this section are written in a manner that can be understood and applied readily and consistently by project proponents while assessing and providing overall carbon benefit.

A	Means of validation	Nested module PU001
B	Findings	Assessed and a finding was raised under the PU001 (CAR#03) assessment for the details on certification process.
C	Conclusion	Based on the revised version of PM001 Section 4.2 has been revised and the certification process has been elaborated. For further details and procedures for conversion between certificate types, Plan Vivo Procedures Manual has been referred. Based on the clarification

		under PU001 and modification under PM001, all the findings stand closed.

3.11 Uncertainty Adjustment

The calculation on Uncertainty adjustment for measured carbon benefit in each measurement period is calculated is with Equation.

$$UD_y = 0.25 \cdot \frac{\sum_{i=1}^{v} CB_{v,y} \cdot U_{v,y}}{CB_y} - 0.5$$

Where:

UD_y Uncertainty adjustment for the climate benefits achieved up to year *y*

$CB_{v,y}$ Carbon benefit of project intervention *v* up to year *y* (t CO_2e; see Equation 10)

$U_{v,y}$ Cumulative uncertainty of measured carbon benefit from project intervention *v* up to year *y* (%; PU005)

CB_y Carbon benefit of the project up to year *y*

For cumulative uncertainty calculation nested Module PU005 has been referenced in the procedures.

VVB Assessment Conclusion

The methodology sufficiently addresses uncertainty for each carbon pool/emissions sources through error propagation calculation or through Monte Carlo simulation for uncertainty for each carbon pool/emission source as described under IPCC GPG. A detailed assessment will be provided under the assessment of Module PU005.

3.12 Plan Vivo Certificates

VVB Assessment and Conclusion

As per the PV Standard Methodology Requirement v1.0 sub-section 2.1.2 of the applicability conditions – Methodologies specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs). For each methodology there is a nested equation for the assessment of carbon benefit and subsequently issuance of eligible Plan Vivo Certificates. Further, assessment details are available under individual modules for the PVC criteria and subsequently issuance of the certificate. The approach for addressing uncertainty is appropriate, adequate, and in conformance with PV Standard Methodology requirement v1.0. Module PU005 provides estimation procedures to increase conservativeness and provide an incentive for greater precision as per the Plan Vivo Methodology Requirements.

A	**Means of validation**	**PV Standard Methodology Requirement v 1.0**

B	Findings	Data and parameters appropriately used in the equations for the issuance of respective certificates
C	Conclusion	NA

3.13 Parameters

3.13.1 Data and parameters available at validation

All the parameters mentioned are available in section 11 of PM001 "Parameters" where sources and description of the parameters are given. All the parameters are valid and complies with the Assessment Requirements.

The parameters which were available at the time of methodology assessment are as follows:

Data and parameters available at validation

Data/Parameter	Description	VVB Assessment (source/tool)
$BR_{WB,a,y}$	Net GHG removals in aboveground woody biomass under the baseline scenario for project area *a* up to year *y*	There is a nested tool - AR-TOOL 14 V.4.2 that appropriately provides assessment and criteria for the removals from the woody biomass under the baseline scenarios.
$BR_{NB,a,y}$	Net GHG removals in aboveground non-woody biomass under the baseline scenario for project area *a* up to year *y*	PU001 Equation 3 and Equation 4 provides methods for the GHG removal assessment both is the baseline and project scenarios from the non-woody biomass through ΔC – which is Removals in herbaceous vegetation in project area. However, for non woody biomass the calculation tool/equation for herb biomass is either missing or not appropriately referenced in the module.
$BR_{BG,a,y}$	Net GHG removals in belowground biomass under the baseline scenario for project area *a* up to year *y*	PU001 Equation 5 – Provides Root:shoot ratios can be obtained from the following sources: i) Data collected within the project area; ii) Published studies specific to the project region and vegetation type; or iii) Global default values for specific vegetation types or ecoregions e.g. from **IPCC 2003**.
$BR_{LI,a,y}$	Net GHG removals in litter under the baseline scenario for project area *a* up to year *y*	PU001 Equation 7 and appropriately reference through a nested tool CDM AR-TOOL12 v3.1 for GHG removals from litter.

Data/Parameter	Description	VVB Assessment (source/tool)
$BR_{DW,a,y}$	Net GHG removals in dead wood under the baseline scenario for project area *a* up to year *y*	PU001 Equation 6 and appropriately reference through a nested tool CDM AR-TOOL12 v3.1 for GHG removals from deadwood under the baseline scenario.
$BR_{SO,a,y}$	Net GHG removals in soil organic carbon under the baseline scenario for project area *a* up to year *y*	PU001 Equation 10 provides nested tool PT001 ver 2.0.
$BR_{WP,a,y}$	Net GHG removals in wood products under the baseline scenario for project area *a* up to year *y*	The methodology provides reference for the calculation of net GHG removals in wood products through Winjum, J.K., Brown, S. and Schlamadinger, B., 1998. Forest harvests and wood products: sources and sinks of atmospheric carbon dioxide. Forest Science, 44(2), pp.272-284. https://doi.org/10.1093/forestscience/44.2.272 However, applicability conditions need to be added to cover all the pools duly addressed. Based on the clarification in the methodology document, the query stands closed.
$BR_{WB\_LTA,a,y}$	Long-term average net GHG removals in aboveground woody biomass under the baseline scenario for project area *a* up to year *y*	PU001 Equation 14 and Equation 15 sufficiently considers baseline or project scenario that includes harvesting with even-aged management long-term average removals in woody biomass.
$BE_{WB,a,y}$	Net GHG emissions from aboveground woody biomass under the baseline scenario for project area *a* up to year *y*	PU002 Equations 1 and 2 sufficiently explains data unit, source of data, description of measurement methods and procedures to be applied. It also has nested modelling tool PT001 v2.0 that needs to be assessed separately.
$BE_{NB,a,y}$	Net GHG emissions from aboveground non-woody biomass under the baseline scenario for project area *a* up to year *y*	PU002 Equations 1 and 2 sufficiently explains data unit, source of data, description of measurement methods and procedures to be applied. It also has nested modelling tool PT001 v2.0 that needs to be assessed separately for its sufficiency.
$BE_{BG,a,y}$	Net GHG emissions from belowground biomass under the	PU002 – same as above

Data/Parameter	Description	VVB Assessment (source/tool)
	baseline scenario for project area *a* up to year *y*	
$BE_{LI,a,y}$	Net GHG emissions from litter under the baseline scenario for project area *a* up to year *y*	PU002 same as above
$BE_{DW,a,y}$	Net GHG emissions from dead wood under the baseline scenario for project area *a* up to year *y*	PU002 same as above
$BE_{SO,a,y}$	Net GHG emissions from soil organic carbon under the baseline scenario for project area *a* up to year *y*	PU002 same as above
$BE_{WP,a,y}$	Net GHG emissions from wood products under the baseline scenario for project area *a* up to year *y*	PU002 same as above
$BE_{NF,a,y}$	Net GHG emissions from nitrogen fertiliser application under the baseline scenario for project area *a* up to year *y*	PU003 sufficiently describes applicability conditions and interventions and for each intervention there is sufficient data source, description of measurement methods and procedures to be applied. Also, provides a nested tool AR-TOOL07 v1.0, and calculated with Equation 1. Which sufficiently estimates the baseline and project emissions from nitrogen fertilisers.
$BE_{NS,a,y}$	Net GHG emissions from nitrogen fixing species under the baseline scenario for project area *a* up to year *y*	PU003 same as above. Also, provides Baseline and project emissions from nitrogen fixing species as estimated with the procedures described in IPCC 2006.
$BE_{BB,a,y}$	Net GHG emissions from biomass burning under the baseline scenario for project area *a* up to year *y*	PU003 sufficiently describes applicability conditions and interventions and for each intervention there is sufficient data source, description of measurement methods and procedures to be applied. Further, supported by AR-TOOL08 v4.0.for the estimation of biomass burning in baseline and project scenario.

Data/Parameter	Description	VVB Assessment (source/tool)
$BE_{FF,a,y}$	Net GHG emissions from fossil fuel use under the baseline scenario for project area *a* up to year *y*	PU003 sufficiently describes applicability conditions and interventions and for each intervention there is sufficient data source, description of measurement methods and procedures to be applied. Estimation of CO2 emissions from fossil fuel combustion from AR-TOOL05 v1.0, which is a nested tool from CDM Methodology.
$BE_{EF,a,y}$	Net GHG emissions from enteric fermentation under the baseline scenario for project area *a* up to year *y*	PU003 sufficiently describes applicability conditions and interventions and for each intervention there is sufficient data source, description of measurement methods and procedures to be applied. Baseline and project emission from enteric fermentation are estimated following the Tier 1 Approach in IPCC 2006.
$BE_{MD,a,y}$	Net GHG emissions from manure decomposition under the baseline scenario for project area *a* up to year *y*	PU003 sufficiently describes applicability conditions and interventions and for each intervention there is sufficient data source, description of measurement methods and procedures to be applied. Baseline and project emission from manure decomposition are estimated following Tier 1 Approach in IPCC 2006 and are appropriately referenced for each parameter within the equations used for the estimation of manure decomposition.
$BE_{SM,a,y}$	Net GHG emissions from soil methanogenesis under the baseline scenario for project area *a* up to year *y*	PU003 sufficiently describes applicability conditions and interventions and for each intervention there is sufficient data source, description of measurement methods and procedures to be applied. Tier 1 Approach in IPCC 2006 is referenced for the estimation of methane emissions from soils under conditions of flooding or saturation.
$LE_{CP,a,y}$	Net GHG emissions due to carbon pool leakage from project area *a* up to year *y*	PU004 sufficiently describes applicability conditions and interventions and for leakage assessment and applicability conditions for all Plan Vivo project interventions that have a risk

Data/Parameter	Description	VVB Assessment (source/tool)
		of activity shifting or market leakage. Sufficiently provides estimation tools for Leakage emissions from expected and observed activity displacement. Nest approaches for those estimation - AR-TOOL15 v2.0 to estimate leakage from displacement of pre-project agricultural activities; PT002 v2.0 to estimate leakage from displacement of deforestation and degradation and PU003 v1.0 to estimate any increase in GHG emissions from emission sources outside the project area that results from project activities. However, PT002 v2.0 to be assessed separately for its consistency with data and parameters.
$LE_{ES,a,y}$	Net GHG emissions due to emission source leakage from project area *a* up to year *y*	PU004 the estimation of Carbon pool leakage from displacement of pre-project agricultural activities uses procedures in AR-TOOL15 v2.0. that sufficiently describes applicability procedures.
$LD_{CP,a}$	Leakage discount factor for carbon pool leakage in project area *a*	Through PU004 – sufficiently explained estimation of Leakage from displacement of deforestation and forest degradation in community forest REDD projects and the same nested procedures under PT002 v2.0. PT002 v2.0 shall be assessed separately under tools' assessment category.
$LD_{ES,a}$	Leakage discount factor for the emission source leakage in project area *a*	PU004 – provides sufficient data and parameters for Leakage discount factors that account for potential activity shifting and market leakage emissions from carbon pools.
ND	Proportion of expected carbon benefits withheld to mitigate the risk of underperformance	No reference in the revised methodology refers to the PV Methodology Requirement Ver 5.0 for this parameter. Proportion of expected carbon benefits withheld to mitigate the risk of underperformance for the Calculation of fPVCs, therefore the CAR stands closed.

Data/Parameter	Description	VVB Assessment (source/tool)
RB	Proportion of Plan Vivo Certificates contributed to the pooled risk buffer	Plan vivo methodology requirement version 5.

3.13.2 Data and parameters monitored:

Data/Parameter	Description	VVB Assessment Tool
$PRWB,a,y$	Net GHG removals in aboveground woody biomass under the project scenario for project area *a* up to year *y*	Under PU001 the parameter is sufficient for the monitoring of Net GHG removals in aboveground and belowground woody biomass under the project scenario that takes into account change in carbon stock in both tree and shrub biomass under the project scenario.
$PRNB,a,y$	Net GHG removals in aboveground non-woody biomass under the project scenario for project area *a* up to year *y*	Under PU001 the parameter sufficiently provides equation for the monitoring of net GHG removals in non-woody biomass under the baseline or project scenario.
$PRBG,a,y$	Net GHG removals in belowground biomass under the project scenario for project area *a* up to year *y*	Under PU001 the parameter sufficiently provides equation for the monitoring of net GHG removals in below ground biomass under the baseline or project scenario.
$PRLI,a,t$	Net GHG removals in litter under the project scenario for project area *a* up to year *y*	Under module PU001 the parameter is sufficient for the monitoring of Net GHG removals from litter under project scenario.
$PRDW,a,y$	Net GHG removals in dead wood under the project scenario for project area *a* up to year *y*	PU001 same as above for the dead wood under project scenario.
$PRSO,a,t$	Net GHG removals in soil organic carbon under the project scenario for project area *a* up to year *y*	PU001 same as above for the GHG removals in SOC under project scenario for monitoring.

$PRWP,a,y$	Net GHG removals in wood products under the project scenario for project area *a* up to year *y*	PU001 the assessment equations are under development process; sufficiency of this parameter can't be explained here. However, the reference provided for the PP to use and calculate the removals under the project scenario is appropriate. *Winjum, J.K., Brown, S. and Schlamadinger, B., 1998. Forest harvests and wood products sources and sinks of atmospheric carbon dioxide. Forest Science, 44(2), pp.272-284. https://doi.org/10.1093/forestscience/44.2.272.*
$PRTR\_LTA,a,y$	Long-term average net GHG removals in aboveground and belowground tree biomass under the project scenario for project area *a* up to year *y*	PU001 the parameter sufficiently estimates the Net GHG removals from LTA under project scenario that can be monitored.
$PEWB,a,y$	Net GHG emissions from aboveground woody biomass under the project scenario for project area *a* up to year *y*	Under module PU002 the parameter is sufficient to monitor the emissions from AGB under project scenario.
$PENB,a,y$	Net GHG emissions from aboveground non-woody biomass under the project scenario for project area *a* up to year *y*	Under module PU002 the parameter is sufficient to monitor the emissions from AG non- woody biomass under project scenario.
$PEBG,a,y$	Net GHG emissions from belowground biomass under the project scenario for project area *a* up to year *y*	Under module PU002 the parameter is sufficient to monitor the emissions from BGB under project scenario.
$PELI,a,y$	Net GHG emissions from litter under the project scenario for project area *a* up to year *y*	Under module PU002 the parameter is sufficient to monitor the emissions from litter under project scenario.

$PEDW,a,y$	Net GHG emissions from dead wood under the project scenario for project area *a* up to year *y*	Under module PU002 the parameter is sufficient to monitor the emissions from dead wood under project scenario.
$PESO,a,y$	Net GHG emissions from soil organic carbon under the project scenario for project area *a* up to year *y*	The eligible carbon pool that can be monitored and same has been explained under the module PU002 that follows PV Standard Meth Template 5.0.
$PEWP,a,y$	Net GHG emissions from wood products under the project scenario for project area *a* up to year *y*	PU002 same as above. The eligible carbon pool under the project scenario to be monitored.
$PENF,a,y$	Net GHG emissions from nitrogen fertilizer application under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.
$PENS,a,y$	Net GHG emissions from nitrogen fixing species under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.
$PEBB,a,y$	Net GHG emissions from biomass burning under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.
$PEFF,a,y$	Net GHG emissions from fossil fuel use under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.
$PEEF,a,y$	Net GHG emissions from enteric fermentation under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.

$PEMD,a,y$	Net GHG emissions from manure decomposition under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.
$PESM,a,y$	Net GHG emissions from soil methanogenesis under the project scenario for project area *a* up to year *y*	PU003 same as above. The eligible carbon pool under the project scenario to be monitored.
Uv,y	Cumulative uncertainty of measured carbon benefit from project intervention *v* up to year *y*	PU005 – sufficiently addresses the uncertainty under the carbon benefit assessment.

VVB Assessment

The Data/Parameters and their Units (if it is a quantifiable value) along with the equations and description, source and value is appropriately mentioned. This section also provides justification of the choice of data or description of measurement methods and procedures applied that have been applied for the measurement of the carbon benefit. Definitions for Parameters used in PM001 follow the latest version of the Plan Vivo Glossary, **PM001**. New terms introduced in this methodology have been defined under the definition section. NIR has been raised for a few definitions that require globally accepted definitions with appropriate citations. The revised methodology document includes those definitions and the NIR is closed.

The Data, Parameters and procedures for monitoring are appropriate for the project activities that are covered by the methodology and explained through modules and tools referenced appropriately under each section of baseline, additionality, and leakage assessment. However, there are certain parameters which are still under the development stage -e.g., Baseline and Project Emissions from Wood Products. Also, the module provides reference for the GHG removals, however, missing the guidance for the criteria e.g., in what conditions does the PP apply - the referenced equations for the Harvested wood products (HWP) in use and HWP in solid waste disposal sites (SWDS). Based on the assessment the methodology has been revised and NIR raised is addressed under respective section as mentioned in the table below.

A	Means of validation	Individual Modules for respective parameter used in the equations for both baseline and project scenarios
B	Findings	The assessment and findings have been provided in the module and tools assessment. NIR#01 was raised for the clarification on emissions from wood products which at the time of assessment were still under the development phase and a research paper has been provided as a reference.
C	Conclusion	Based on the response indicated through PM001 Sections 7 and 8, it was evident that wood products are dealt with in PU001. In addition, the methodology developer provided a reference to the approach that can be used for wood products as described in PU001 Section 12. Findings were appropriately addressed and the same has been added in the annexure.

4 References

As per Plan Vivo Standard Methodology Template v 5.0, full references for all literature or data sources used in the methodology are missing in the document.

A	Means of validation	Plan Vivo Standard Methodology Template v 5.0
B	Findings	CAR 07 raised to complete this section.
C	Conclusion	This section has been added in the modified version. **CAR 07 is closed (Annexure I-VIII).**

5 Validation Finding

Earthood Services Private Limited has performed the validation of the proposed methodology PM001 along with all the supporting documents provided. The validation was performed based on ESPL's internal procedures and fundamental requirements set for any standard carbon registry. Principles such as baseline, additionality, non-permanence, and monitoring parameters were assessed and reviewed for the methodology PM001.

The methodology, and it's associated modules and tools, meet the PV Methodology Requirements V1.0 and complies with the PV Standard 5.0 for Methodology/Module/Tools Template.

The Agriculture and Forestry Carbon Benefit Assessment Methodology PM001 may be revised further as needed, provided that there will be no departure from the requirements of fundamental principles and materiality set forth in the current version.

Dr. Kaviraj Singh
Managing Director
Earthood Services Private Limited

Date: 08/11/2023
Place: Gurgaon, Haryana

Annexure I – Assessment of PM001

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [3 Aug 2023]	Reviewer feedback 1	Methodology developer response 2 [15 Sep 2023]
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable reviewers to assess whether they meet the Methodology Requirements.	The scope of the methodology is clearly defined for the small holder farming system and forestry and adopts the Plan Vivo Methodology Standard Template version 5.0. Sources for the GHG emission are mentioned as defined under Methodology Standard.						
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence level; and specify appropriate uncertainty adjustments if the 90% confidence	Methodology describes the stratification for woody biomass under PU001	However, for non-woody biomass a clarity is needed on the sampling for the carbon benefit assessment	CAR Raised - Requested to provide a sampling approach for carbon benefit assessment	Closed	This corrective action and its relationship to the Methodology Requirements is not	Based on the clarification provided by the Meth Developer the CAR is closed	

		interval is greater than 50% of the measured value.					clear. Proceudres for calculating uncertainty for parameters determined with sampling appraoches are described in PU005 Section 5.1.1.		
	1.2.2	If models are used to estimate Carbon Benefits, Methodologies must describe approaches for estimating model uncertainty as a percentage of the measured value; and specify appropriate uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.	Sufficiently addresses uncertainty for each carbon pool\emissions sources through error propagation calculation or through Monte Carlo simulation for uncertainty for each carbon pool/emission source as described under IPCC GPG. A detailed assessment will be provided under the assessment of Module PU005.	Uses nested methodological tool - Monte Carlo Simulation as described under IPCC GPG					
	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon	Sufficiently addresses uncertainty adjustment						

		Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.							
	1.2.4	Sources of uncertainty in estimated Carbon Benefits that cannot be readily quantified must be controlled through the use of best practice approaches (e.g. to reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.	Adds equation for error propagation calculation through its Module PU005.						
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.	Module PU005 provides estimation procedures to increase conservativeness and provide an incentive for greater precision as per the Plan Vivo Methodology Requirements.						
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international good practices in greenhouse gas accounting.	Uses IPCC GPG and CDM AR Tool for quantifications.						

	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.	PU001 accomodates all the carbon pools and PU002 emission sources separately	However, there are ceratin pools e.g., emissions from wood products are still under the development phase and a research paper has been provided as a reference	NIR - Provide the update on the assessment approach for wood products	Closed	There is no update on appraoches for wood products, these would need to be developed before baseline emissions or carbon benefits from wood products can be quantified using this methodology. In the meantime, the metodology can be used by projects that are not required to account for changes in wood products.	The same approach can be explicitly mentioned in the Meth and provide reference of the module in the meth document	It is indicated in PM001 Sections 7 and 8 that wood products are dealt with in PU001. The reference to the approach that can be used for wood products is described in PU001 Section. A full reference to PU001 has been added in Section 12.

	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.	All the emissions calculations are in the CO2e using 100year GWP following the IPCC 2006 GPG.	However, the compliance/reference with most recent which is IPCC 2022 AR6 is missing in the report.	CAR- Provide the latest IPCC aassessment approach in the CO2e for GWP	Closed	PM001 doesn't include any global warming potential figures so perhaps this CAR applies to one or more of the modules?	Based on the standard it is requested to provide the reference of the modules to close this observation	References to all modules have been added in Section 7.
	1.3.4	Methodologies must identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits	Adequetely identifies and includes the parameters to measure carbon benefits through modular methodology and tools nested from CDM or IPCC GPG (PU001, PU002, PU003, PU004, PU005, PT001 and PT002)	All the tools are appropriately cited under the Methodology and Modules					
1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertainty estimation must be specified and comply with international best practice; and adjustments	PT001 includes the methodologies for direct measurement. Assessment of the same shall be provided under the PT001 assessment.						

		to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).							
1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly available; ii) have been reviewed and tested for use across the full scope described in the Methodology's applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).	Uses publicly available models - e.g., RothC modeland IPCC GPG approaches						
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.	Applies IPCC GPG, CDM AR Tools	However, needs recommended the most current (up-to-date) versions.	CAR Raised - Requested to provide udated reference of IPCC GWP	Closed	PM001 does not refer to any thrid party default factors and does not refer to IPCC GWP, so perhaps this CAR applies to one or more of the modules?	Agreed and closed the finding	

	1.5.3	If Methodologies include novel default factors, full details of the methods and data used to establish the default factors must be provided.	To be provided under separate module assessment sheet						
	1.5.4	If Methodologies allow the use of Project-specific default factors, full details of the approaches for establishing the default factors must be provided and comply with international best practice.	Uses IPCC best practices guidelines for establishing default factors						
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.	To be provided under separate module assessment sheet						
2.1 Applicability conditions	2.1.1	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied.	The methodology is applicable for all the project interventions that takes place on Forest land, grassland, or cropland. Or that results in the conversion of: Agroforestry and farm forestry, Changes to cultivation practices, Changes to livestock and manure management, Afforestation and reforestation, Forest		CAR 02 is closed, however, requests Meth Developer to include the geographic locations for each interventio n.	Closed	There is no geographic restriction on any interventio ns.		

			restoration, Forest protection and Improved Forest Management. The methodology applies to all types of forest including swamp and wetlands and all types of croplands and grassland.						
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	As per the Methodology Requirement sections 2.1.3 to 2.1.6 the guidance for producing the certificates – fPVC, rPVC and vPVC is missing and needs to be added		CAR 04 has been raised to include detailed guidance for the issuance of Plan Vivo Certificates.	Closed	The types of PVC the methodology can be used to claim are specified in PM001 Section 4.2	Section 4.2 does not clearly specify the conditions for the issuance of the certificates and only mentions the types of certificates. Therfore, it is requested to provide guidance for the issuance of the	Additional explanation and link to the Plan Vivo Pocedures manual has been added to Section 4.2

								certificates.	
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for determining these.	Methodology is module based and PU001 and PU002 provides detailed approaches for Removals and Emssion Assessment						
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or emission sources: Carbon Pools – Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources – Nitrogen	The tool meets the Plan Vivo Standard Methodology Requirement (1.0) sub-section 2.2.4 Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources		CAR 03 was raised to understand about the mandatory sources of carbon pools which are to be measured in the project interventions and is closed with the	Closed			

		fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)	does not exceed 5% of the total expected Carbon Benefits of the Project.		clarifications provided.				
	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool or emission source are greater than in the Baseline Scenario.	This section does not provide the appropriate approaches or guidance for the project developer as per the PV Standard Methodology Template ver.5. which clearly asks to – "describe the approaches for: i) describing the most likely land use and land management in the absence of project intervention(s) for each project area; ii) demonstrating that project interventions would not be feasible for project participants to implement in the absence of the project; and iii) updating the baseline scenario and						

			re-assessing additionality at least every 10-years throughout the project period to incorporate the impacts of any material changes that affect the most likely land use and land management scenario in the absence of Project Interventions e.g. policy or legal changes, or new developments that affect the Project Region".						
	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project	The tool meets the Plan Vivo Standard Methodology Requirement (1.0) sub-section 2.2.4 Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected						

			Carbon Benefits of the Project.						
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the Carbon Baseline, Project emissions and removals, and Leakage	This section provides equations that can subsequently be used through modules by adopting appropriate methods for the estimation of Baseline Carbon Pool. A detailed assessment and conclusions shall be provided by way of assessment of individual modules.						
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.		This section needs to be added somewhere in the methodology sections in complaince with the PV standard meth requirement v 1.0	NIR 02 - Requested to provide approaches for the most likely land use and land management in the absence of project interventions.	Closed	Approaches for describing the most likely land land and land amangement in the absence of project intervetions are described in PM001 Section 6.	The approach revised and accepted	

	2.3.2	Methodologies must describe approaches for demonstrating the Additionality of Carbon Benefits by showing that Project Interventions would not be feasible for Project Participants to implement in the absence of the Project.	This section of the methodology provides a general description for the Baseline Scenario and Additionality assessment and has a nested tool AR-TOOL02 v1.0 for the most likely land use scenario in the absence of project interventions and the additionality of the project interventions should be determined using that tool. It also provides timeline as every 10 years for the baseline scenario and additionality reassessment	More assessment shall be provided under the Module assessment	NIR 03 has been raised to include and elaborate the baseline and additionality approaches under this section of the methodology.	Closed	These approahces are fully elaborated in AR-TOOL02 that is referred to in PM001 Section 6.	The approach revised and accepted	
	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.							
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).							

	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)							
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.							
	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years, throughout the Crediting Period.							
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources for each year of the Crediting Period (for rPVCs and vPVCs) or Forward	As per the PV Standard Methodology Requirement v1.0 sub-section 2.1.2 of the applicability conditions – Methodologies specify the type(s) of Plan Vivo Certificate they can be used to	Module Assessment shall provide the details of certificate issuance based on the assessment of the Module based calculations for Carbon benefits					

		Crediting Period (for fPVCs).	claim (i.e. fPVCs, rPVCs, or vPVCs). For each methodology there is a nested equation for the assessment of carbon benefit and subsequently issuance of eligible Plan Vivo Certificates. Further, assessment details are available under individual modules for the PVC criteria and subsequently issuance of the certificate. The approach for addressing uncertainty is appropriate, adequate, and in conformance with PV Standard Methodology requirement v1.0. Module PU005 provides estimation procedures to increase conservativeness and provide an incentive for greater precision as per the Plan Vivo Methodology Requirements.						
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.							
	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and removals achieved in each Verification Period.							
2.6 Harvesting	2.6.1	Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of	Module PU001 provides conditions and equations for harvesting under						

		tree harvesting within 50-years of the Start Date	project scenario and carbon benefits thereof. Detailed assessment has been provided under PU001						
	2.6.2	If quantifying carbon stocks for a Project Scenario that includes harvesting with even-aged management, the number of Plan Vivo Certificates claimed must not exceed the average Carbon Benefit over at least one full rotation that includes the final harvest.							
	2.6.3	If quantifying carbon stocks for a Project Scenario includes thinning or partial felling, the number of Plan Vivo Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.							
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting Period (for fPVCs).	Provides nested module PU004 and modelling approaches for the leakage assessment that occurs during a project period. The approaches that can be referred for the leakage assessment:						
	2.7.2	Methodologies for claiming vPVCs must describe approaches for	i. Measurement of activity shifting and/or market leakage						

		estimating Leakage that occurs, or for applying an appropriate Leakage Discount during each Verification period.	(PU004). ii. Modelling based on expected activity shifting and/or market leakage with activity data from the project area. iii. Leakage discount factor based on characteristics of the project area and project intervention (PU004). Detailed assessment shall be provided under Module PU004						
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.	As per the PV Standard Methodology Requirement v1.0 sub-section 2.1.2 of the applicability conditions – Methodologies specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs). For each methodology there is a nested equation for the assessment of carbon benefit and subsequently issuance of eligible Plan Vivo Certificates. Further, assessment details are						
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits achieved during each Verification period by							

		subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from the Carbon Baseline emissions.	available under individual modules for the PVC criteria and subsequently issuance of the certificate. The approach for addressing uncertainty is appropriate, adequate, and in conformance with PV Standard Methodology requirement v1.0. Module PU005 provides estimation procedures to increase conservativeness and provide an incentive for greater precision as per the Plan Vivo Methodology Requirements.						

Annexure II – Assessment of PU001

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [3 Aug 2023]	Reviewer feedback 1	Methodology developer response 2 [15 Sep 2023]
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable reviewers to assess whether they meet the Methodology Requirements.	Module PU001 uses the latest Plan Vivo template and meets methodology requirements. CAR 1 is raised for some open issues related to methodology structure.		CAR 1- 1. Details of Developed by and approved by should be on the cover page 2. In section 1, summary, only parameters of baseline and project are mentioned, however,short summary on Scope,	Closed	1. This information is provided on page i 2. Detauils on scope, applicability and procedures have been added to Section 1. 3. References are provided as footnotes in the text.	Section 7 References are still missing from the PU001 module. Apart from this all other points are successfully addressed.	References have been added to Section 7

					applicability and procedure applied are not mentioned 3. In the Content table Section 7 References are not mentioned				
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence level; and specify appropriate uncertainty adjustments if the 90% confidence interval is greater than 50% of the measured value.		The module refers to the CDM tool AR TOOL14 v. 4.2 but uncertainity component is not included in the module.	The module refer the tool- AR TOOL 14 v. 4.2 where uncertainity is defined but Uncertainity is not described in the plan vivo module rather it has mentioned that 'excluding uncertainty adjustment'. Please justify without	Closed	The uncertainty procedures for appliction of this module are described in PM001 Section 10.1. Since this module is applied within PM001 this does not need to be repeated.	This process is extensively discussed in detail in PU005.	

	1.2.2	If models are used to estimate Carbon Benefits, Methodologies must describe approaches for estimating model uncertainty as a percentage of the measured value; and specify appropriate uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.			using uncertainity how the module has adopted a conservativ e approach. Requested to provide sampling approach or provide reference to the nested module				
	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.							
	1.2.4	Sources of uncertainty in estimated Carbon Benefits that cannot be readily quantified must be controlled through the use of best practice approaches (e.g. to							

		reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.							
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.							
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international good practices in greenhouse gas accounting.	YES, the Approach used for quantifying greenhouse gas emissions and changes in carbon stocks are consistent with international good practices in greenhouse gas accounting (IPCC GPG).						
	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.	YES, the module specifies different quantification approaches for GHG emissions and for SOC calculation.						

	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.	Yes, IPCC methodology report 2003 is used the latest and most recent version for root and shoot ratio calculation. https://www.ipcc.ch/publication/good-practice-guidance-for-land-use-land-use-change-and-forestry/	However, reference to the latest version is missing	CAR-Requested to provide reference to the latest version.	Closed			Reference to this report has been added to Section 7
	1.3.4	Methodologies must identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits	YES, the module has identified, described and justified all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits						
1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertainty estimation must be specified and comply with international best practice; and adjustments to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).	YES, the module used AR-TOOL12 v4.2 for measurement of GHG s and carbon stocks, the methods to be used for data collection, analysis and uncertainty estimation and has been complied with international best practices and adjustments to avoid over-estimation of Carbon Benefits is applied.						

1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly available; ii) have been reviewed and tested for use across the full scope described in the Methodology's applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).	YES, the module has used modeling from the following sources: 1. baseline and Actual project removals calculation in woody biomass with the help of AR-TOOL14 v4.2 section 8.2. 2. In calculation of Baseline removals in soil organic carbon with the help of PT001 v2.0 3. In calculation of Baseline and project removals in wood products from the reviewed literature Winjum, J.K., Brown, S. and Schlamadinger, B., 1998. Forest harvests and wood products: sources and sinks of atmospheric carbon dioxide. Forest Science, 44(2), pp.272-284. https://doi.org/10.1093/forestscience/44.2.272						
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.	YES, The module has used third-party default factor from the following source: 1. Root: shoot ratios can be obtained from the global default values for specific vegetation types or ecoregions e.g. IPCC 2003. 2. Section 5.4.1 of the module, Baseline removals in deadwood and litter, and sec on 5.4.2 Project removals in deadwood and litter calculations used the default factor from AR-TOOL12 v3.1 from Sections 6.2 and 7.2. 3. Section 5.5.2 of the module, Project removals in soil organic carbon	The module has used third-party default factor from the following source: 1. Root: shoot ratios can be obtained from the global default values for					

			calculations used the default factor for afforestation and reforestation activities from the AR-TOOL16 v1.1 or AR-AM0014 v3.0. The module has used the default factor from publicly available data from a credible source and has used the updated version of the documents.	specific vegetation types or ecoregions e.g. IPCC 2003. 2. Section 5.4.1 of the module, Baseline removals in deadwood and litter, and sec on 5.4.2 Project removals in deadwood and litter calculations used the default factor from AR-TOOL12 v3.1 from Sections 6.2 and 7.2. 3. Section 5.5.2 of the module, Project removals in soil organic carbon calculations used the default					

				factor for afforestation and reforestation activities from the AR-TOOL16 v1.1 or AR-AM0014 v3.0.					
	1.5.3	If Methodologies include novel default factors, full details of the methods and data used to establish the default factors must be provided.	No, noval default factor is used.						

	1.5.4	If Methodologies allow the use of Project-specific default factors, full details of the approaches for establishing the default factors must be provided and comply with international best practice.	YES, The module has used project-specific default factor for the calculation of 1. Root: shoot ratios for below-ground biomass calculation which will be obtained from the global default values for specific vegetation types or ecoregions e.g. IPCC 2003 and credible published studies specific to the project region and vegetation type 2. Above-ground biomass of herbaceous vegetation in year t or year from the credible published studies specific to the project region and vegetation type In module values of default factor has not mentioned but it it is mentioned that the value of default factor used for the project area will be used either from the credible published studies of that area or from the IPCC 2003.						
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.	No, proxies are used.						
2.1 Applicability conditions	2.1.1	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which	No, it is not mentioned in the module.						

		they can or cannot be applied.							
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	No, its not specified in the module.		Please specify for which type of Plan Vivo certificates (i.e. fPVCs, rPVCs, or vPVCs). the module is used.	Closed	This is specified in PM001 Section 4.2. Since this module is applied within PM001 this does not need to be repeated.	This process is extensively discussed in detail in PM001.	
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for determining these.	Module PU001 has described in detail the carbon pool (Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products). Quantification of carbon pool for Carbon Baseline, Project emissions and removals, and Leakages is calculated correctly and each step described properly in the module. However emission sources are covered in module PU002.	Module PU002 is refered for emission sources.					
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or emission							

		sources: Carbon Pools – Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources – Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)							
	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool or emission source are greater than in the Baseline Scenario.							

	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project							
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the Carbon Baseline, Project emissions and removals, and Leakage							
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.	YES, it has been mentioned but need detailed explaination on the same.		Land use and land management are given in table 1 matching criteria but it does not fullfil the criteria	Closed	This is specified in PM001 Section 6. Since this module is applied within PM001 this does	This process is extensively discussed in detail in PM001.	

					2.3.1, describe in detail about the approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.		not need to be repeated.		
	2.3.2	Methodologies must describe approaches for demonstrating the Additionality of Carbon Benefits by showing that Project Interventions would not be feasible for Project Participants to implement in the absence of the Project.	NO, baseline and additionality are not mentioned in the module and no reference is mentioned in the same.		CAR- Please provide reference for the baseline and additionality	Closed	This is specified in PM001 Section 6. Since this module is applied within PM001 this does not need to be repeated.	This process is extensively discussed in detail in PM001.	

	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.				Closed	This is specified in PM001 Section 6. Since this module is applied within PM001 this does not need to be repeated.	This process is extensively discussed in detail in PM001.	
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).	YES, the module has described different approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources.						
	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the	YES, measured and modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)						

		establishment of the Project Intervention(s)							
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.	No historic data is used						
	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years, throughout the Crediting Period.	No, it is not decribed in the module		Please add this criteria in the module. It is not mentioned in the module.	Closed	This is specified in PM001 Section 6. Since this module is applied within PM001 this does not need to be repeated.	This process is extensively discussed in detail in PM001.	
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources for each year of the	As per the PV Standard Methodology Requirement v1.0 sub-section 2.1.2 of the applicability conditions – Methodologies specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs). For each methodology there is a nested equation for the assessment of	Module Assessment shall provide the details of certificate issuance based on the					

		Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).	carbon benefit and subsequently issuance of eligible Plan Vivo Certificates. Further, assessment details are available under individual modules for the PVC criteria and subsequently issuance of the certificate. The approach for addressing uncertainty is appropriate, adequate, and in conformance with PV Standard Methodology requirement v1.0. Module PU005 provides estimation procedures to increase conservativeness and provide an incentive for greater precision as per the Plan Vivo Methodology Requirements.	assessment of the Module based calculations for Carbon benefits					
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.							
	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and removals achieved in each Verification Period.							
2.6 Harvesting	2.6.1	Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of tree harvesting within 50-years of the Start Date	The module PU001 describes Harvesting in section 5.7 where even-aged management or partial felling system is explained in detail. Equations number 14-17 are dealing with even-aged management or partial felling system which are appropriately described in the module. However, it is nowhere mentioned in the module that "Plan Vivo		CAR- please add the "Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of	Closed	It should not be necessary to specifiy this as the equations prevent the potential for reverslas	The section 5.7 of module is updated.	

			Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of tree harvesting within 50 years of the Start Date" and other details related to plan Vivo certificate.		tree harvesting within 50-years of the Start Date" criteria in the module for clear understanding.		within 50-years. Clarification has been added at the start of Section 5.7.		
	2.6.2	If quantifying carbon stocks for a Project Scenario that includes harvesting with even-aged management, the number of Plan Vivo Certificates claimed must not exceed the average Carbon Benefit over at least one full rotation that includes the final harvest.			CAR- the module does not mention anywhere that the number of Plan Vivo Certificates claimed must not exceed the average Carbon Benefit over at least one full rotation that includes the final harvest.	Closed	This should be apparent from equations 14 and 15 and does not need to be stated.	Equation 14 and 15 will be refered for this.	

	2.6.3	If quantifying carbon stocks for a Project Scenario includes thinning or partial felling, the number of Plan Vivo Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.			CAR- the module does not mention anywhere that for partial felling system the number of Plan Vivo Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.	Closed	This should be appraent from equations 16 and 17 and does not need to be stated.	Equation 16 and 17 will be refered for this.	
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting Period (for fPVCs).	NA The module is not dealing with leakage	PU004- Estimation of GHG emissions from leakage in Plan Vivo projects is used for leakage emission calculation.					
	2.7.2	Methodologies for claiming vPVCs must describe approaches for estimating							

		Leakage that occurs, or for applying an appropriate Leakage Discount during each Verification period.							
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.	NA The module is not dealing with the Calculation of carbon benefits.						
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits achieved during each Verification period by subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from							

		the Carbon Baseline emissions.							

Annexure III – Assessment of PU002

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [10 Aug 2023]	Reviewer feedback 1	Methodology developer response 2
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable reviewers to assess whether they meet the Methodology Requirements.	Module PU002 uses the latest Plan Vivo template and meets methodology requirements. CAR 1 is raised for some open issues related to methodology structure.		CAR-1. 1. As per methodology template, Details of Developed by and approved by should be on the cover page 2. In section 5.2 Winjum et al 1998 is mentioned for reference. However, requested to provide citation appropriatel	Closed	1. This has been moved to the title page 2. This refernce has been added to Section 7 3. These references have been added to Section 7 4. A summary of scope, aplicability and procedures has been added to Section 1	All the points are successfully addressed in the module PU002.	

					y under **Section 7- Reference** 3. In section 7 references PT002 v2.0, PM001 and Plan Vivo Glossary are not mentioned. 4. In section 1, summary, only parameters of baseline and project are mentioned, however,short summary on Scope, applicability and procedure applied are not mentioned. Please add short summary on Scope, applicability and procedure applied in		5. These two parameters have been added in Section 5.2. There is currently no tool for estimating these parameters, but the carbon pool is included for completeness, and in expectation of future development of an approved tool.		

					the module. 5. 〖BE〗_(WP,a,y) Net GHG emissions from wood products under the baseline scenario for project area a up to year y and 〖PE〗_(WP,a,y) Net GHG emissions from wood products under the project scenario for project area a up to year y, Both the parameters are mentioned in section 1. Summary but they are not used in any equation mentioned in section 5. Procedures.				

					Please clarify.				
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence level; and specify appropriate uncertainty adjustments if the 90% confidence interval is greater than 50% of the measured value.	This process is extensively discussed in detail in PU005.	For calculation of Baseline and project emissions from carbon pools three approaches are used, the third approach is 'Sample-based approaches using stratified estimation, using an approved tool that applies the procedures described by Olofsson et al. 1993 '. The module will refer "Olofsson, P., Foody, G.M.,					
	1.2.2	If models are used to estimate Carbon Benefits, Methodologies must describe approaches for estimating model uncertainty as a percentage of the measured value; and specify appropriate uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.							
	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.							

	1.2.4	Sources of uncertainty in estimated Carbon Benefits that cannot be readily quantified must be controlled through the use of best practice approaches (e.g. to reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.		Stehman, S.V. and Woodcock, C.E., 2013. Making better use of accuracy data in land change studies: Estimating accuracy and area and quantifying uncertainty using stratified estimation. Remote Sensing of Environment, 129, pp.122-131." this for sampling and uncertainity calculation if third approach is applied					
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.							
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international good practices in greenhouse gas accounting.		Uses Tool PT002 v2.0 for quantifications.	CAR-2. 1. No equation is mentioned for quantification of wood products in	Closed	1. There is currently no tool for estimating these parameters, but the carbon pool	Both the parameters are added. Section 5.2 is revised successfully.	

					section 5.2 of module. 2. In section 1 summary parameter 〖BE〗_(WP,a,y) Net GHG emissions from wood products under the baseline scenario for project area a up to year y (t CO2e; see Section 5.2) and 〖PE〗_(WP,a,y) Net GHG emissions from wood products under the project scenario for project area a up to year y (t CO2e; see Section 5.2) are mentioned in section 5.2 but		is included for completeness, and in expectation of future development of an approved tool, or an update to this module. The module can currently be used for projects that are not required to account for emissions from wood products. 2. These two parameters have been added in Section 5.2		

					parameter and equation are missing in the section 5.2. Please review and clarify on the same.				
	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.	YES, the module specifies different quantification approaches for GHG emissions from biomass and soil.						
	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.	All the emissions calculations are in the CO2e using 100year GWP following the IPCC 2006 GPG.	This module is part of methodology PM001. Hence, PM001 and PT002 v2.0 will be reffered for this section.					
	1.3.4	Methodologies must identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits	Adequetely identifies and includes the parameters to measure carbon benefits nested from PT002 v2.0.	All the tools are appropriately cited under PU002 except the ones raised in CAR 2.	CAR-2 is raised for the same issue.	Closed	See response to CAR-2		

1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertaintyestimation must be specified and comply with international best practice; and adjustments to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).	Measuring and sampling are not part of PU002.						
1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly available; ii) have been reviewed and tested for use across the full scope described in the Methodology's applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).		Model- PT002 Estimation of climate benefits from REDD in community managed forest, Version 2.0 is used by the module. For more detail refere tool PT002 v2.0. For wood products Winjum et al 1998 will be refered	CAR-3. In section 5.2 wood products Winjum et al 1998 will be used for modelling. The module does not provide any reference or link for details of the tool	Closed	Reference to Winjum et al 1998 has been added to Section 7. A tool based on this source has not been developed yet, so the module can currently be used for projects that are not required to account for emissions from wood products. Once a tool is approved, the module	Section 7 is updated.	

							will be updated with the appropriate reference.		
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.	No, third party default factors are used in the module.						
	1.5.3	If Methodologies include novel default factors, full details of the methods and data used to establish the default factors must be provided.	No, noval default factors are used in the module.						
	1.5.4	If Methodologies allow the use of Project-specific default factors, full details of the approaches for establishing the default factors must be provided and comply with international best practice.	No, any project specific default factors are used in the module.						
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.	No, proxies are used.						
2.1 Applicability conditions	2.1.1	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied.	Section 4 Applicability conditions describes about interventions and conditions						

			applied in the module						
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	This module is applied within PM001. In PM001 the process is extensively discussed.						
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for determining these.	Module PU002 has described in detail the carbon pool for biomass and soil. The module is used to calculate the carbon pool for baseline and project scenerio, however for leakages PU004 will be reffered.	Module PU003 is refered for emission sources.					
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or emission sources: Carbon Pools – Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources – Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)							

	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool or emission source are greater than in the Baseline Scenario.							
	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project							
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the Carbon Baseline, Project emissions and removals, and Leakage							
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.	NO, baseline and additionality are not mentioned in the module and methodology PM001 is refered for baseline and additionality.						
	2.3.2	Methodologies must describe approaches for demonstrating the Additionality of Carbon Benefits by showing that Project Interventions							

		would not be feasible for Project Participants to implement in the absence of the Project.							
	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.							
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).		This module is part of methodology PM001. Hence, PM001 will be reffered for this section.					
	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)	A detailed description on carbon baseline is described in section 5.1.1 Baseline emissions from carbon pools.	PT002 v2.0 is also reffered for detail on baseline.					
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.	No historic data is used						

	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years, throughout the Crediting Period.	No, it is not decribed in the module. The methodology PM001 is reffered for this.						
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).	As per the PV Standard Methodology Requirement v1.0 sub-section 2.1.2 of the applicability conditions – Methodologies specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs). For each methodology there is a nested equation for the assessment of carbon benefit and subsequently issuance of eligible Plan Vivo	The section has been referenced through PM001.					
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.							
	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and removals achieved in each Verification Period.							

			Certificates. Further, assessment details are available under individual modules for the PVC criteria and subsequently issuance of the certificate.						
2.6 Harvesting	2.6.1	Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of tree harvesting within 50-years of the Start Date	This module is applied within PM001 and for more details PM001 will be reffered.						
	2.6.2	If quantifying carbon stocks for a Project Scenario that includes harvesting with even-aged management, the number of Plan Vivo Certificates claimed must not exceed the average Carbon Benefit over at least one full rotation that includes the final harvest.							
	2.6.3	If quantifying carbon stocks for a Project Scenario includes thinning or partial felling, the number of Plan Vivo Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.							
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate		PU004-Estimation of GHG emissions					

		Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting Period (for fPVCs).		from leakage in Plan Vivo projects is used for leakage emission calculation.					
	2.7.2	Methodologies for claiming vPVCs must describe approaches for estimating Leakage that occurs, or for applying an appropriate Leakage Discount during each Verification period.							
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.	NA The module is not dealing with the Calculation of carbon benefits. This module is applied within PM001 and for more details PM001 will be reffered.						
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits achieved during each Verification period by subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from the Carbon Baseline emissions.							

Annexure IV – Assessment of PU003

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [24 Aug 2023]	Reviewer feedback 1	Methodology developer response 2 [15 Sep 2023]
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable reviewers to assess whether they meet the Methodology Requirements.	Module PU003 uses the latest Plan Vivo template and meets methodology requirements. CAR 1 is raised for some open issues related to methodology structure.		CAR-1. 1. As per methodology template, Details of Developed by and approved by should be on the cover page 2. Please add section 7 references in the module. 3. In section 7 references AR-TOOL05, AR-TOOL07, AR-TOOL08, PM001, IPCC 2006, IPCC 2021	Closed	1. Details have been moved to the cover page 2 and 3. References have been added in Section 7. 4. Summary of scope, applicability and procedures has been added. 5. This typo has been corrected.	Section 7 is added in the PU003 but it is not added in the contents table. All other points are successfully addressed and module PU003 is updated accordingly.	Table of contents has been updated.

					assessment report and Plan Vivo Glossary etc. are not mentioned. 4. In section 1, summary, only parameters of baseline and project are mentioned, however,short summary on Scope, applicability and procedure applied are not mentioned. Please add short summary on Scope, applicability and procedure applied in the module. 5. In section 1, parameter 〖PE〗_(MD,a,y) Net GHG				

					emissions from soil methanogenesis under the project scenario for project area a up to year y (t CO2e; see Section 5.7) is repeated twice while 〖PE〗_(SM,a,y) is missing from section 1.				
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence level; and specify appropriate uncertainty adjustments if the 90% confidence interval is greater than 50% of the measured value.	Module PU003 does not provide any sampling approach, However PU005 of the methodology extensively describe the sampling and uncertainity approach.						
	1.2.2	If models are used to estimate Carbon Benefits, Methodologies must describe approaches for estimating model uncertainty as a percentage of the measured value; and specify appropriate uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.							

	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.							
	1.2.4	Sources of uncertainty in estimated Carbon Benefits that cannot be readily quantified must be controlled through the use of best practice approaches (e.g. to reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.							
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.							
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international good practices in greenhouse gas accounting.	The module approaches for quantifing GHG emissions are consistent with the international good practices in GHG accounting.		CAR-2 The equations 1 to 7 mentioned in section 5 used only one equation for both baseline and project emissions calculation. Please mentioned equations seperatly for	Closed	This doesn't seem necessary since the same equation is used for both baseline and project emissions.	Both the equations for baseline calculation and project emission calculation are same.	

					baseline and project emissions.				
	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.	YES, the module specifies different quantification approaches for GHG emissions from biomass and soil.						
	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.		The module refer 2021 IPCC assessment report which is the latest version.					
	1.3.4	Methodologies must identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits	The module appropriatly identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits.						
1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertaintyestimation must be	The module does not include any direct measurement of GHG and carbon stock.						

		specified and comply with international best practice; and adjustments to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).							
1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly available; ii) have been reviewed and tested for use across the full scope described in the Methodology's applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).	No, model is used in PU003.						
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.	Module PU003 has used several default factors from the IPCC 2006 and 2021 IPCC Assessment Report 6 or use moste recent IPCC report.						
	1.5.3	If Methodologies include novel default factors, full details of the methods and data used to establish the default factors must be provided.	No, noval default factor is used.						
	1.5.4	If Methodologies allow the use of Project-specific default factors, full details of the approaches for establishing the default factors	No, any project specific default factors are used in the module.						

		must be provided and comply with international best practice.							
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.	No, proxies are used.						
2.1 Applicability conditions	2.1.1	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied.	Section 4 Applicability conditions describes about interventions and conditions applied in the module						
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	This module is applied within PM001. In PM001 the process is extensively discussed.						
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for determining these.	The module identify carbon emission sources while carbon pools are described in Module PU002	Module PU002 is refered for carbon pool sources.					
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or emission sources: Carbon Pools –	The module considers and justifies emission sources- Nitrogen fertilisers (N2O), Nitrogen fixing		Refer CAR-2 as mentioned above.	Closed	This doesn't seem necessary since the same equation is used for	Both the equations for baseline calculation and project	

		Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources – Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)	species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)				both baseline and project emissions.	emission calculation are same.	
	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool or emission source are greater than in the Baseline Scenario.	The module deals with emission source only. Section 5 of module deals with the project scenario emission calculation						
	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project	Module PU002 has described in detail the carbon pool for biomass and soil. The module is used to calculate the carbon pool for baseline and project scenerio, however for leakages PU004 will be reffered.						
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the Carbon Baseline, Project							

		emissions and removals, and Leakage							
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.	NO, baseline and additionality are not mentioned in the module	Methodology PM001 is refered for baseline and additionality.					
	2.3.2	Methodologies must describe approaches for demonstrating the Additionality of Carbon Benefits by showing that Project Interventions would not be feasible for Project Participants to implement in the absence of the Project.							
	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.							
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).		This module is part of methodology PM001. Hence, PM001 will be reffered for this section.					

	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)	The baseline from emission sources are calculated in the module for Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)	This module is part of methodology PM001. Hence, PM001 will be reffered for this section.					
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.	No historic data is used						
	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years, throughout the Crediting Period.	No, it is not decribed in the module. The methodology PM001 is reffered for this.						
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and	As per the PV Standard Methodology Requirement	The methodology PM001 is					

		emission sources for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).	v1.0 sub-section 2.1.2 of the applicability conditions – Methodologies specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs). For each methodology there is a nested equation for the assessment of carbon benefit and subsequently issuance of eligible Plan Vivo Certificates. Further, assessment details are available under individual modules for the PVC criteria and subsequently issuance of the certificate.	reffered for this.					
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.							
	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and removals achieved in each Verification Period.							
2.6 Harvesting	2.6.1	Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of tree	This module is applied within PM001 and for						

		harvesting within 50-years of the Start Date	more details PM001 will be reffered.						
	2.6.2	If quantifying carbon stocks for a Project Scenario that includes harvesting with even-aged management, the number of Plan Vivo Certificates claimed must not exceed the average Carbon Benefit over at least one full rotation that includes the final harvest.							
	2.6.3	If quantifying carbon stocks for a Project Scenario includes thinning or partial felling, the number of Plan Vivo Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.							
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting Period (for fPVCs).		PU004- Estimation of GHG emissions from leakage in Plan Vivo projects is used for leakage emission calculation.					
	2.7.2	Methodologies for claiming vPVCs must describe approaches for estimating Leakage that occurs, or for applying an appropriate Leakage Discount during each Verification period.							
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward	NA The module is not dealing with the Calculation of carbon						

		Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.	benefits. This module is applied within PM001 and for more details PM001 will be reffered.						
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits achieved during each Verification period by subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from the Carbon Baseline emissions.							

Annexure V – Assessment of PU004

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [24 Aug 2023]	Reviewer feedback 1	Methodology developer response 2 [15 Sep 2023]
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting	Provides approaches for the leakages under section 5.1 and 5.2	Refers AR-TOOL04 v1.0 to demonstrate the potential leakage and AR-TOOL15 v2.0 to estimate leakage from displacement of pre-project agricultural activities. In addition, for procedures	CAR#1 Please refer to eq 5 where 〖Prp〗 - Reduction in production (or use, income etc.) expressed as a proportion of production (or use, income etc.) expected under the baseline scenario. Will this proportion be in percentage?	Closed	It should be a proportion of the production expected under the baseline scenario. i.e. if its 50% of the baseline value, the paramter entered should be 0.5.	Based on the clarification the CAR is closed	

		Period (for fPVCs).		in PT002 v2.0 to estimate leakage from displacement of deforestation and degradation					
	2.7.2	Methodologies for claiming vPVCs must describe approaches for estimating Leakage that occurs, or for applying an appropriate Leakage Discount during each Verification period.	Provides approaches and equations for estimating appropriate leakage discount during the verification	The parameters are duly explained under the main document PM001 as methodology					
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate	Clarity on the Crediting period cerficate process is missing like how the discount leads to the PV certificates		CAR#2 Please provide calrity based on the PV Standard ver1.0	Closed	Approaches for calcluting carbon benefits	However, requested to include this reference in the PU004 module	The convention adopted in this modular methodology is that references are forward looking from

		expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.			Methodology Requirement and the sections referred here 2.8.1 and 2.8.2 respectively		that incorporate the inputs from this module are described in PM001 Section 10.	document for clarity.	the Methodology>Modules >Tools. This structure is followed throughout. There is no backwards referencing from this module (or any other modules) to PM001 as the modules may also be referenced in future methodologies.
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits	Provides equation for the potential leakage assessment, however, the parameters used in the calculation need appropriate references		CAR#3 Requested to provide appropriate reference to meet the PV meth standard requirement as well as PV Meth/module/	Closed	Approaches for calcluting carbon benefits that incorporate the inputs from this	Same as above	The convention adopted in this modular methodology is that references are forward looking from the Methodology>Modules >Tools. This structure is followed throughout. There is no backwards

		achieved during each Verification period by subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from the Carbon Baseline emissions.			Tools standard template requirement.		module are described in PM001 Section 10.		referencing from this module (or any other modules) to PM001 as the modules may also be referenced in future methodologies.

Annexure VI – Assessment of PU005

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [8 Sep 2023]	Reviewer feedback 1	Methodology developer response 2
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable reviewers to assess whether	Basic structure is provided as per the Plan Vivo Methodology Standard Ver 5.0, however, definition of uncertainity and module specific applicability condition needs to be added	PM001 has been referred, however, the definition is missing in the PV Glossary	No new CAR/NIR has been raised as the same has been mentioned during the assessment of PM001	Closed	Full reference to PM001 has been added in Section 7		

		they meet the Methodology Requirements.							
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence level; and specify appropriate uncertainty adjustments if the 90% confidence interval is greater than 50% of the measured value.	Suggests to use sampling approaches to calculate separately for each value (*x*) of carbon density/GHG emissions estimated per hectare. Also, suggest to stratified sampling approach for the assessment of carbon density or GHG emissions per hectare for each strata.						
	1.2.2	If models are used to estimate Carbon Benefits, Methodologies must describe approaches for estimating model uncertainty as a percentage of the measured value; and specify appropriate	Mentions modelled values can be used, however, reference to those modules or tools that can be referred to are missing from the section 5.1.2		CAR#1, Provide the appropriate reference to the module /tool for the ease of usage for the	Closed	CAR#1 This requirement applies to carbon stocks and GHG emissions estimated with modellin		

		uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.			project developer		g approaches, so it applies to all modules and tools applied by the project.		
	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.	Equation 4 provides approach per Plan Vivo Methodology Requirements for uncertainity adjustment and sufficiently includes proportion to be deducted if the Carbon Benefit is equal to or greater than 0.25 × U - 0.5	Some of the parameters referred in the equation are derived from the Meth PM001 that facilitates estimation of carbon benefits in the projects					

	1.2.4	Sources of uncertainty in estimated Carbon Benefits that cannot be readily quantified must be controlled through the use of best practice approaches (e.g. to reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.	Provides nested approach for good practices and uses IPCC GPG default values and also values from parameters for carbon pool as described under methodology PM001	Tier 1 for Error Propogation and Tier 2 Monte Carlo simulation following procedures described in **IPCC GPG** Derives parameter values described under PM001 Methodology	CAR#2 Requested to provide conditions in detail when and where to use Tier 1 and Tier 2 approaches for the Uncertainity Assessment CAR #3 specify the geography for the default values or reference paper as mentioned in the IPCC	Closed	CAR#2 Projects can use either the Error Propagation or Monte Carlo simulation approach; as both are consistent with the Methodology Requirements. They are provided as options here to allow projects to choose the approach best suited to their context. CAR#3 There are		

					GPG for the usage of the default values		no default values applied in this module.		
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.	Equation 4 provides approach for the conservativenes measurement	Some of the parameters referred in the equation are derived from the Meth PM001 that facilitates estimation of carbon benefits in the projects					
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international good							

		practices in greenhouse gas accounting.							
	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.							
	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.							
	1.3.4	Methodologies must identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits							

1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertaintyestimation must be specified and comply with international best practice; and adjustments to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).							
1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly available; ii) have been reviewed and tested for use across the full scope described in the Methodology's							

		applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).							
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.							
	1.5.3	If Methodologies include novel default factors, full details of the methods and data used to establish the default factors must be provided.							
	1.5.4	If Methodologies allow the use of Project-specific default factors,							

		full details of the approaches for establishing the default factors must be provided and comply with international best practice.							
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.							
2.1 Applicability conditions	2.1.1	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied.							
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to							

		claim (i.e. fPVCs, rPVCs, or vPVCs).							
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for determining these.							
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or emission sources: Carbon Pools – Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources							

		– Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)							
	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool or emission source are greater than in the Baseline Scenario.							
	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the							

		Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project							
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the Carbon Baseline, Project emissions and removals, and Leakage							
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.							
	2.3.2	Methodologies must describe approaches for demonstrating							

		the Additionality of Carbon Benefits by showing that Project Interventions would not be feasible for Project Participants to implement in the absence of the Project.							
	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.							
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of the Crediting							

		Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).							
	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)							
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.							

	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years, throughout the Crediting Period.							
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).							
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.							

	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and removals achieved in each Verification Period.							
2.6 Harvesting	2.6.1	Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a result of tree harvesting within 50-years of the Start Date							
	2.6.2	If quantifying carbon stocks for a Project Scenario that includes harvesting with even-aged management, the number of Plan Vivo Certificates claimed must not exceed the							

		average Carbon Benefit over at least one full rotation that includes the final harvest.							
	2.6.3	If quantifying carbon stocks for a Project Scenario includes thinning or partial felling, the number of Plan Vivo Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.							
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting Period (for fPVCs).							
	2.7.2	Methodologies for claiming vPVCs must describe							

		approaches for estimating Leakage that occurs, or for applying an appropriate Leakage Discount during each Verification period.							
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.	Assessed under relevant section of PV Meth Modules/Tools and appropriate sections dealing with Carbon Benfits and relevant Plan Vivo Certifications during the crediting period.						
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits achieved during each							

		Verification period by subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from the Carbon Baseline emissions.							

Annexure VII – Assessment of PT001

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1	Reviewer feedback 1	Methodology developer response 2 [19 Sep 2023]
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable	The methodology's scope is explicitly outlined, concentrating on small holder farming systems and forestry. It incorporates the certificate types from the Plan Vivo Standard V5.0 Methodology template. However, some references within the document are not provided.		CAR 01 - Please provide reference number on Page 1 of Plan Vivo Tool Version 2.0	Closed	This CAR is unclear. Please specifiy which reference number is missing.	A visual reference has been provided in the attached screenshot. Notably, this reference was absent on the first page of the tool document (Versoin 1). However, in version 2 of the	

		reviewers to assess whether they meet the Methodology Requirements.						document the reference number is added. The finding is closed.	
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence level; and specify appropriate uncertainty adjustments if the 90% confidence interval is greater than 50% of the measured value.	Sampling approach is described in Section 6 of Plan Vivo Tool Version 2.0. Apart from the mentioned confidence intervel the SHAMBA Model is executed three times, employing: i) the average input values, ii) the upper or lower confidence limit values that yield the highest estimate of emissions from soil organic carbon, and iii) the upper or lower confidence limit values that produce the lowest estimate of emissions from soil organic carbon.						
	1.2.2	If models are used to estimate Carbon Benefits, Methodologies must describe approaches for estimating		This process is extensively discussed in detail in PU005.					

		model uncertainty as a percentage of the measured value; and specify appropriate uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.							
	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.		This process is extensively discussed in detail in PU005.					
	1.2.4	Sources of uncertainty in estimated Carbon Benefits that cannot be readily quantified must		This process is extensively discussed in detail in PU005.					

		be controlled through the use of best practice approaches (e.g. to reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.							
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.	In the context of modelling expected baseline and project emissions, conservative input parameters are used, assuming zero uncertainty for both. Consequently, the value Ux in PU005 is set to zero.						
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international	The quantification process utilizes IPCC GPG and CDM AR Tool. Additionally, it can considers certain components, such as emissions reduction resulting from soil inorganic carbon, which						

		good practices in greenhouse gas accounting.	can also be included in the calculations.						
	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.	The Annex 2 SHAMBA Model v1.1 Description within Plan Vivo Tool Version 2.0 provides a detailed quantification of greenhouse gas emissions and changes in carbon stocks for Carbon Pools and emission sources, treating them separately.	However, the documentation lacks comprehensive discussion on emissions resulting from manure.		Closed	PT001 is used for estimating baseline and project changes in SOC. Equations for estimating emissions from manure are described in PU003.	Kindly incorporate the provided reference into the appropriate section of the document.	References to PU003 are included in PM001. Since this tool is not used for estimating emission from manure a reference to PU003 is not needed here.
	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.	All the emissions calculations are in the CO2e using 100year GWP following the IPCC 2006 GPG.	However, the compliance with most recent which is IPCC 2022 AR6 is missing in the report.	CAR 02- Provide the latest IPCC aasessment approach in the CO2e for GWP	Closed	PT001 is used for estimating baseline and project changes in SOC so does not include any GWPs. Perhaps this CAR applies to another module or tool?	This is in reference to Table 6 page 22 (Section 7.2) of Annex 2 SHAMBA Model v1.1 Description within Plan Vivo Tool Version 2.0.	This part of the SHAMBA Model is not applied in this tool which is only used for estimating baseline and project changes in SOC. Biomass buringin is treated with module PU003.
	1.3.4	Methodologies must identify, describe and justify all data, parameters,	Adequetely identifies and includes the parameters to measure carbon benefits nested from CDM or IPCC GPG	All the tools are appropriately cited	No				

		assumptions, and calculations used to estimate and measure Carbon Benefits		under PT001					
1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertaintyestimation must be specified and comply with international best practice; and adjustments to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).	In Annex 2 SHAMBA Model v1.1 of Plan Vivo Tool Version 2.0, direct measurements of greenhouse gas emissions and carbon stocks are incorporated. To ensure accuracy, the methods for data collection, analysis, and uncertainty estimation are explicitly specified and in compliance with international best practices such as IPCC GPG, CDM AR tools. Additionally, adjustments are implemented to prevent any overestimation of Carbon Benefits, as outlined in Section 1.2.						
1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly	In Plan Vivo Tool Version 2.0, models that are publicly available, have undergone thorough review and testing across the scope of PM001, and incorporate conservative						

		available; ii) have been reviewed and tested for use across the full scope described in the Methodology's applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).	assumptions, parameters, and adjustments to prevent overestimations, are utilized. An example of such a model is RothC.						
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.	Applies IPCC GPG, CDM AR Tools	However, needs recommended the most current (up-to-date) versions.	CAR 03 - Requested to provide udated reference of IPCC GWP	Noted and closed	PT001 is used for estimating baseline and project changes in SOC so does not include any GWPs. Perhaps this CAR applies to another module or tool?	This is in reference to Table 6 page 22 (Section 7.2) of Annex 2 SHAMBA Model v1.1 Description within Plan Vivo Tool Version 2.0.	This part of the SHAMBA Model is not applied in this tool which is only used for estimating baseline and project changes in SOC. Biomass burning is treated with module PU003.
	1.5.3	If Methodologies include novel	Noval default factor is used.						

		default factors, full details of the methods and data used to establish the default factors must be provided.							
	1.5.4	If Methodologies allow the use of Project-specific default factors, full details of the approaches for establishing the default factors must be provided and comply with international best practice.	Uses IPCC best practices guidelines for establishing default factors	However, needs recommended the most current (up-to-date) versions.	CAR 04 - Requested to provide udated reference of IPCC GWP	Noted and closed	PT001 is used for estimating baseline and project changes in SOC so does not include any GWPs. Perhaps this CAR applies to another module or tool?	This is in reference to Table 6 page 22 (Section 7.2) of Annex 2 SHAMBA Model v1.1 Description within Plan Vivo Tool Version 2.0.	This part of the SHAMBA Model is not applied in this tool which is only used for estimating baseline and project changes in SOC. Biomass burining is treated with module PU003.
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.	The tool does not uses the correlated values.						

2.1 Applicability conditions	2.1.1	Methodologies must specify the Project Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied.	The project intervention(s) are explained in saperate document however the geographical location(s) applicability as per Annex 2 SHAMBA Model v1.1 Description of Plan Vivo Tool Version 2.0 is designed to work with smallholder systems in sub-Saharan Africa.	However, tool must provide guidelines on model caliberations for region outside Sub-Shaharan over different LULC type.	CAR 05 - Tool must provide guilines for other regions.	Closed	Section 4.1 states: "If applying the tool to project areas outside Sub-Saharan Africa, evidence of RothC Model validation must be provided in the form of peer-reviewed publications or primary research." The validity of this validation would then need to be assessed as part of the project review. Guidance on model callibration is beyond the scope of the tool.	Noted. Closed	
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	The tool is suitable for projects seeking to claim fPVCs or vPVCs but is not applicable for claiming rPVCs. The reference supporting this information can be found in section 4.3 of Plan Vivo Tool Version 2.0.						
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for	In various sections of Annex 2 SHAMBA Model v1.1 Description, the tool thoroughly addresses the carbon pool, including Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass,						

		determining these.	Litter, Deadwood, Soil organic carbon, and Wood products, as well as emission sources.						
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or emission sources: Carbon Pools – Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources – Nitrogen fertilisers (N2O), Nitrogen fixing	The Annex 2 SHAMBA Model v1.1 Description of Plan Vivo Tool Version 2.0 mandates the inclusion of certain Carbon Pools and emission sources for quantification: Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products, Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), and Fossil fuel use (CO2).	However, emissions from Enteric fermentation (CH4), Manure deposition (CH4, N2O), and Soil methanogenesis (CH4) are not accounted for. Any exclusions must be justified in the Methodology.	CAR 06 - The tool must provide guidelines on emission quatification for Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4) in detail.	Closed	PT001 is used for estimating baseline and project changes in SOC. Equations for estimating emissions from enteric fermentation, manure deposition and soil methanogenesis are described in PU003.	Noted. Closed	

		species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)							
	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool or emission source are greater than in the Baseline Scenario.		This section needs to be added somewhere in the Plan Vivo Tool Version 2.0 sections or provide reference to other documents if discussed in another document.	CAR 07 - Please incorporate this criterion into the tool description as it is currently described from the tool or Annex-2.	Closed	This is specified in PM001 Section 5. Since this module is applied within PM001 this does not need to be repeated.	Noted. Closed	

	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project		This section needs to be added somewhere in the Plan Vivo Tool Version 2.0 sections or provide reference to other documents if discussed in another document.	CAR 10 - Please incorporate this criterion into the tool description as it is currently described from the tool or Annex-2.	Closed	This is specified in PM001 Section 5. Since this module is applied within PM001 this does not need to be repeated.	Noted. Closed	
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the Carbon Baseline, Project emissions and removals, and Leakage		This section needs to be added somewhere in the Plan Vivo Tool Version 2.0 sections	CAR 11 - Please incorporate this criterion into the tool description as it is currently described	Closed	This is specified in PM001 Section 5. Since this module is applied within PM001 this does not need to be repeated.	Noted. Closed	

				or provide reference to other documents if discussed in another document.	from the tool or Annex-2.				
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.		This section needs to be added somewhere in the Plan Vivo Tool Version 2.0 sections or provide reference to other documents if discussed in another document.	CAR 12 - Please incorporate this criterion into the tool description as it is currently described from the tool or Annex-2.	Closed	This is specified in PM001 Section 6. Since this module is applied within PM001 this does not need to be repeated.	Noted. Closed	
	2.3.2	Methodologies must describe approaches for	To be provided under separate module assessment sheet						

		demonstrating the Additionality of Carbon Benefits by showing that Project Interventions would not be feasible for Project Participants to implement in the absence of the Project.							
	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.	To be provided under separate module assessment sheet						
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of	The tool is suitable for projects seeking to claim fPVCs or vPVCs but is not applicable for claiming rPVCs. The reference supporting this information can be found in section 4.3 of Plan Vivo Tool Version 2.0.	In Plan Vivo Tool Version 2.0, the documentation provides a detailed account of the	CAR 13 - Please add section that descibes the approach between two	Closed	Since both fPVCs and vPVCs are determined using a modelling approach, there is no difference in the procedures for these two credit types. Clarification of this has been added to PT001 Section 4.3	Noted. Closed	

		the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).		anticipated Carbon Benefits associated with all pertinent Carbon Pools and emission sources listed in Annex 2 SHAMBA Model v1.1. However, it is worth noting that the specific differences in approach between these two certificate types are not explicitly mentioned in the documentation.	certificate types that can be claimed as per tool guidelines.				

	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)		Carbon Baseline and its requirement to reflect the Baseline Scenario, as well as the use of historical, measured, or modelled activity data describing conditions in the Project Area(s) before the establishment of the Project Intervention(s), cannot be found in Plan Vivo Tool	CAR 14 - Please add section in tool description/ annexure or provide reference to section where this is previsouly mentioned.	Noted the clarification and closed the finding	Procedures for estimating baseline emissions are described in PT001 Section 5.4. This refers to the Baseline Scenario that is defined following the prodecures in PM001 Section 6.	Kindly incorporate the provided reference into the appropriate section of the document.	The convention adopted in this modular methodology is that references are forward looking from the Methodology>Modules>Tools. This structure is followed throughout. There is no backwards referencing from this tool (or any other tools or modules) to PM001 as the modules may also be referenced in future methodologies.

				Version 2.0.					
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.		Plan Vivo Tool Version 2.0 document does not provide information in this regard.	CAR 15 - Please add section in tool description/ annexure or provide reference to section where this is previsoul y mentioned.	Noted and closed	PT001 does not use historical data to establish a carbon baseline, it uses a modelling approach.	Kindly incorporate the provided reference into the appropriate section of the document.	There is no reference provided. As historical data is not used in this tool, this requirement does not apply.
	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years,		Plan Vivo Tool Version 2.0 does not provide information on	CAR 16 - Please add section in tool description/ annexure	Closed	Clarification has been added to PM001 Section 7, which now states "Baseline emissions estimates must be updated at least every 10-years throughout the	Noted. Closed	

		throughout the Crediting Period.		approaches for reviewing and updating the Carbon Baseline at least every 10 years during the Crediting Period.	or provide reference to section where this is previsouly mentioned.		Crediting Period using the same procedures used for the initial estimate of baseline emissions.". Since this module is applied within PM001 this does not need to be repeated.		
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).	The tool is suitable for projects seeking to claim fPVCs or vPVCs but is not applicable for claiming rPVCs. The reference supporting this information can be found in section 4.3 of Plan Vivo Tool Version 2.0.	Plan Vivo Tool Version 2.0 does not include descriptions of approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources	CAR 17 - Please add section that descibes the approach between two certificate types that can be claimed as per tool guidelines.	Closed	The procedures in PT001 Section 5 describes the approaches for estimating expected carbon benefits from SOC in each year of the verification period.	Noted. Closed	

				for each year of the Crediting Period (for and vPVCs) or the Forward Crediting Period (for fPVCs).					
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.	According to Plan Vivo Tool Version 2.0 Section 4.2, fPVCs can be claimed when the conservative method to estimate the Carbon Benefits align with Requirement 1.2.5.						
	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and	The tool is suitable for projects seeking to claim fPVCs or vPVCs but is not applicable for claiming rPVCs. The reference supporting this information can be found in section 4.3 of Plan Vivo Tool Version 2.0.	In Plan Vivo Tool Version 2.0, vPVCs can indeed be claimed. However, the tool does not provide informati on	CAR 18 - Please add section in tool descriptio n/ annexure or provide reference to section where	Closed	The procedures in PT001 Section 5 describes the approaches for estimating expected carbon benefits from SOC in each year of the verification period.	Noted. Closed	

		removals achieved in each Verification Period.		explicitly on Carbon Indicators for each relevant Carbon Pool and emission source, nor does it describe approaches for estimating Project emissions and removals achieved in each Verification Period.	this is previsouly mentioned.				

Annexure VIII – Assessment of PT002

Section	Requirement	Description	Is the methodological element compliant?	If not compliant, does it *appropriately* reference or nest into another methodological element that covers the requirement?	CARs/NIRs	Open/closed	Methodology developer response 1 [24 Aug 2023]	Reviewer feedback 1	Methodology developer response 2 [19 Sep 2023]
1.1. Methodology Structure	1.1.1	Methodologies, Modules and Tools must be prepared using the most recent Plan Vivo Methodology/Module/Tool Template and must include sufficient information to enable their consistent application by Projects, and to enable	The tools's scope is explicitly outlined, concentrating on small holder farming systems and forestry. It incorporates the certificat		CL-01 - What methods are considered permissible for conducting change detection, such as the use of satellite imagery or agent-based	Closed	CL-01 - As Stated in Section 5.4 "*A time series of land cover maps that describes all forest strata can be used, alternatively analysis of remote sensing imagery can be used to generate*	CL-01 - Noted. Closed. CL-02 - Remote Sensing based approach would require canopy cover for initial area demarcation and the for further assessment. For more details on canopy cover in definition please refer: https://unfccc.int/files/land_use_and_climate_change/lulucf/application/pdf/060830_killmann.pdf CL-03 - Noted. Closed. CL-04 - Noted. Closed.	CL-02 The forest definition has been updated for consistency with the recommended reference.

		reviewers to assess whether they meet the Methodology Requirements.	e types from the Plan Vivo Standard V5.0 Methodology template.		modeling ? If these methods are deemed acceptable, what specific spatial resolution of satellite imagery is considered suitable? CL-02 - In addition to this the definition of forest in Section 3 of the document doesnot discuss about the forest canopy as a criteria for forrest which is crucial in terms of remote sensing.		*land cover maps following established techniques*". The following requirement has also been added "*Land cover maps derived from remote sensing data must use imagery with a spatial resolution of 30m or higher and have an accuracy greater than 80%*" CL-02 - The forest definition refers to minimum crown cover thresholds CL-03 The description in Section		

					CL-03 - Following this there appears to be a discrepancy between the definitions outlined in Section 3, which states that the reference region should be twice the area of the forest type, and the content of Section 5.1.1, which indicates that the reference region should be three times the area of the forest		5.1.1 has been updated for consistency with the definition in Sction 3 CL-04 The following footnote has been added "*Datafiles must be in vector format, with distinct delineation of each stratum and correspondi ng feature attributes within designated columns. The projection system employed must also be specified.*"		

					type. Could you kindly clarify and reconcile this inconsistency to ensure accurate interpretation and implementation? CL-04 - It is a requirement that a reference region be established for each project area, and this must be accompanied by maps and data files detailing the boundaries of the reference				

					region, all of which should be incorporated into the Project Design Document (PDD). In the context of auditing, it would be beneficial to clarify that the data file should encompass a vector format, with distinct delineation of each stratum and corresponding feature attributes within designated				

					columns. Additionally, the documentation should explicitly specify the projection system employed within the KML file. This clarity ensures accurate assessment and alignment with the stipulated standards.				
1.2.Uncertainty	1.2.1	If sampling approaches are used to estimate Carbon Benefits, Methodologies must describe approaches for calculating sampling uncertainty at a 90% confidence	Sampling approach is described in Section 6 of Estimation of carbon benefits		CL-05 - Cross validation of linear extrapolation and if sensitvity analysis is required or not.	Closed	CL-05 The linear extrapolation is described in Equations 1 and 2, where baseline deforetation and	Noted. Closed	

		level; and specify appropriate uncertainty adjustments if the 90% confidence interval is greater than 50% of the measured value.	from REDD in community managed forest (PT002) Version 2. Uncertainities are estimated for carbon density per strata in conjuction using PU005 v1.0. The uncertainty linked to the modeled carbon baseline is considered to be negligible.		What metrics to be used for linear extrapolation.		degradation are calculated as the Average proportion of the forest area present at the start of the reference region was deforested/ degraded in each year of the reference period.		
	1.2.2	If models are used to estimate	This process						

		Carbon Benefits, Methodologies must describe approaches for estimating model uncertainty as a percentage of the measured value; and specify appropriate uncertainty adjustments if model uncertainty exceeds 50% at a 90% confidence level.	is extensively discussed in detail in PU005.						
	1.2.3	If required, uncertainty adjustments must be applied to deduct a proportion of Carbon Benefits that is equal to or greater than 0.25 × U - 0.5, where U is the uncertainty as a percentage of the measured Carbon Benefit.							
	1.2.4	Sources of uncertainty in							

		estimated Carbon Benefits that cannot be readily quantified must be controlled through the use of best practice approaches (e.g. to reduce measurement error), appropriate default values, proxies that are strongly correlated with the values they are used to predict, and robust assumptions.							
	1.2.5	Conservative approaches must be used for estimating expected Carbon Benefits.	In the context of modelling expected baseline and project emissions, conservative input		CL-06- As outlined in section 5.3, is it permissible to utilize a modeled approach using satellite data for incorporating	Closed	Section 5.3 describes the use of sampling approaches to estimate the carbon density of different carbon pools. Projects are required to include	Noted. Closed	

			parameters are used, assuming zero uncertainty for both. Consequently, the value Ux in PU005 is set to zero.		carbon density values, with the option to include additional carbon pools beyond above-ground woody biomass? If so, could you elaborate on how a conservative approach is applied in terms of model metrics, spatial and temporal resolution of satellite data, as well as the handling of error		details of the source of values used, and a justification for why the values adopted are expected to be conservative when applied to the project area. Validators will then be required to assess whether the carbon density estimates used are conservative.		

					propagation within the modeled approach ? Also, in terms of acceptable could cover for optical images.				
1.3. Quantifying emissions and removals	1.3.1	Approaches used for quantifying greenhouse gas emissions and changes in carbon stocks must be consistent with international good practices in greenhouse gas accounting.	Not applicable						
	1.3.2	Methodologies must quantify greenhouse gas emissions and changes in carbon stocks separately for Carbon Pools and emission sources.	Tool is used in conjuction with PU002 Version 1.0. Baseline and project emission						

			s are estimated from the module for Above Ground Woody Biomass, Above Ground Non-Woody Biomas, Soil Organic Carbon, Dead Wood, Litter, Wood products.						
	1.3.3	All greenhouse gas emissions must be converted to CO2 equivalent using 100-year global warming potentials from the most recent IPCC Assessment Report.	Not applicable						

	1.3.4	Methodologies must identify, describe and justify all data, parameters, assumptions, and calculations used to estimate and measure Carbon Benefits	Not applicable						
1.4 Measuring and sampling	1.4.1	If Methodologies include direct measurements of greenhouse gas emissions and carbon stocks, the methods to be used for data collection, analysis and uncertaintyestimation must be specified and comply with international best practice; and adjustments to avoid over-estimation of Carbon Benefits must be applied (see Section 1.2).	REDD in community managed forest (PT002) Version 2. defines forest inventory techniques following standard operating procedures that are aligned with national guideline		CL-07 - In relation to the content in Section 5.4, it is indicated that a sequence of land cover maps depicting various forest strata is permissible. Alternatively, the utilization of remote sensing data for producing land	Closed	The following requirements have been added in Section 5.4 "*Land cover maps derived from remote sensing data must use imagery with a spatial resolution of 30m or higher and have an accuracy greater than 80%*"	In the creation of annual composites, both seasonality and cloud cover percentage are significant factors. Are there specific guidelines or criteria for determining the acceptable number of images per month and the permissible cloud cover percentage in this process?	The following requirements have been added to Section 5.4 "If projects use annual composites to produce land cover maps, all images used should have cloud

			s or internati onal best practice for the forest types surveyed . Alternati vely, existing studies that provide robust estimate s of carbon stocks in the forest types present within the project area and leakage area can be applied.		cover maps using establishe d methods is also mentione d. In terms of auditing, could you please provide clarity on the acceptabl e spatial and temporal resolution criteria for these land cover maps? Additional ly, if these maps are generated internally, what would be the minimum threshold				cover of less than 30%, and land cover maps compar ed betwee n years must be derived from images that are either from the same season or reflect the same aspects of seasonal ity."

					for their acceptance of model metric? Moreover, what is the suitable number of images per month for creating composites, and what threshold for cloud cover in satellite imagery is considered acceptable as part of this process?				
1.5 Modles, default factors and proxies	1.5.1	If Methodologies use models to simulate greenhouse emissions, the models must: i) be publicly	REDD in community managed forest (PT002) Version 2						

		available; ii) have been reviewed and tested for use across the full scope described in the Methodology's applicability criteria; and iii) apply conservative assumptions, parameters, and adjustments to avoid over-estimation of Carbon Benefits (see Section 1.2).	fulfils the basic requirement as mentioned.						
	1.5.2	If Methodologies use third party default factors to quantify greenhouse gas emissions, they must be publicly available from a recognised and credible source and also the most current (up-to-date) versions.	Not applicable						

	1.5.3	If Methodologies include novel default factors, full details of the methods and data used to establish the default factors must be provided.	Not applicable						
	1.5.4	If Methodologies allow the use of Project-specific default factors, full details of the approaches for establishing the default factors must be provided and comply with international best practice.	Not applicable						
	1.5.5	If Methodologies use proxies, they must be strongly correlated with the value they are used to quantify.	Not applicable						
2.1 Applicability	2.1.1	Methodologies must specify the Project	REDD in communi						

conditions		Intervention(s) and geographical location(s) they are applicable to, and any other criteria for determining the situations in which they can or cannot be applied.	ty managed forest (PT002) Version 2 mentions that there is no geographical restriction on the use of this tool in section 1.						
	2.1.2	Methodologies must specify the type(s) of Plan Vivo Certificate they can be used to claim (i.e. fPVCs, rPVCs, or vPVCs).	Section 4.2 of REDD in community managed forest (PT002) Version 2 mentions that this tool can be used by projects claiming rPVCs or						

			vPVCs. It cannot be used to claim fPVCs.						
2.2 Carbon pools and emission sources	2.2.1	Methodologies must identify the Carbon Pools and emission sources that will be assessed, or the criteria and approaches for determining these.	PT002 clearly mentions Project Boundaries, Refrence Region, Reference time, Carbon Pools and criteria and approaches for determing them.						
	2.2.2	The following Carbon Pools and emission sources must be considered for inclusion in the Methodology, and justification must be provided for any excluded Carbon Pools or							

		emission sources: Carbon Pools – Aboveground woody biomass, Aboveground non-woody biomass, Belowground biomass, Litter, Deadwood, Soil organic carbon, Wood products; Emission sources – Nitrogen fertilisers (N2O), Nitrogen fixing species (N2O), Biomass burning (CH4), Fossil fuel use (CO2), Enteric fermentation (CH4), Manure deposition (CH4, N2O), Soil methanogenesis (CH4)							
	2.2.3	Carbon Pools and emission sources must be included if the Project Scenario emissions from that Carbon Pool	This is specified in PM001 Section 5 in- detail.						

		or emission source are greater than in the Baseline Scenario.							
	2.2.4	Carbon Pools and emission sources that generate more emissions in the Project Scenario than the Baseline Scenario can be excluded if the total difference in emissions between the Baseline Scenario and Project Scenario for all excluded Carbon Pools and emission sources does not exceed 5% of the total expected Carbon Benefits of the Project							
	2.2.5	The same Carbon Pools and emission sources must be assessed for quantifying the							

		Carbon Baseline, Project emissions and removals, and Leakage							
2.3 Baseline scenario and additionality	2.3.1	Methodologies must describe approaches for describing the most likely land use and land management in the absence of Project Intervention(s) for each Project Area.							
	2.3.2	Methodologies must describe approaches for demonstrating the Additionality of Carbon Benefits by showing that Project Interventions would not be feasible for Project Participants to implement in the absence of the Project.	To be provided under separate module assessment sheet						

	2.3.3	Methodologies must describe approaches for updating the Baseline Scenario and re-assessing Additionality at least every 10-years throughout the Project Period.							
2.4 Carbon baseline	2.4.1	Methodologies must describe approaches for estimating the Carbon Baseline for all relevant Carbon Pools and emission sources in each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs).	The tool is suitable for projects seeking to claim rPVCs or fPVCs but is not applicable for claiming fPVCs for all carbon pools.						
	2.4.2	The Carbon Baseline must reflect the Baseline Scenario, and can be informed	Carbon Baseline and its requirement to reflect						

		by historical, measured, or modelled activity data describing conditions in the Project Area(s) prior to the establishment of the Project Intervention(s)	the Baseline Scenario, as well as the use of historical, measured, or modelled activity data describing conditions in the Project Area(s) before the establishment of the Project Intervention(s), are sufficently discussed in REDD in community						

			managed forest (PT002) Version 2.						
	2.4.3	If the Carbon Baseline is developed using historical data to establish an average or trend, the historical reference period must start within 10-years and end within 2-years of the Start Date.	Section 5.1.3 of REDD in community managed forest (PT002) Version 2 document sufficently provide information in this regard.						
	2.4.4	Methodologies must describe approaches for reviewing and updating the Carbon Baseline at least every 10-years, throughout the Crediting Period.		REDD in community managed forest (PT002) Version 2 does not provide information on approaches for	CAR 08 - Please add section in tool description/ annexure or provide reference to section where this is	Closed	The latest revision to PM001 (3 Aug 2023) includes the following clarification in Section 7 "*Baseline emissions must be estimated for the same period as*	Noted. Closed	

				reviewing and updating the Carbon Baseline at least every 10 years during the Crediting Period.	previsouly mentioned.		*project emissions. Baseline emissions estimates must be updated at least every 10-years throughout the Crediting Period using the same procedures used for the initial estimate of baseline emissions*."		
2.5 Project emissions and removals	2.5.1	Methodologies must describe approaches for estimating the expected Carbon Benefits for all relevant Carbon Pools and emission sources for each year of the Crediting Period (for rPVCs and vPVCs) or Forward	The tool as per section 4.2 is suitable for projects seeking to claim rPVCs or vPVCs but is not applicable for claiming fPVCs for						

		Crediting Period (for fPVCs).	all relevent pools.						
	2.5.2	If Methodologies are used to claim fPVCs, approaches used to estimate the expected Carbon Benefits must conform with Requirement 1.2.5.	According Section 4.2 of REDD in community managed forest (PT002) Version 2, fPVCs cannot be claimed with this tool.						
	2.5.3	Methodologies for claiming vPVCs must identify Carbon Indicators for each relevant Carbon Pool and emission source and describe approaches for estimating Project emissions and removals achieved in each	The tool is suitable for projects seeking to claim fPVCs or vPVCs but is not applicable for claiming rPVCs. The referenc	In REDD in community managed forest (PT002) Version 2, vPVCs can indeed be claimed. However, the tool does not	CAR 09 - Please add section in tool description/ annexure or provide reference to section where this is previsouly	Closed	The parameters generated with this tool are used to calcaulte project emissions and removals following the approahces described in PU002. This	Noted. Closed	

		Verification Period.	e supporting this information can be found in section 4.2 of REDD in community managed forest (PT002) Version 2.	provide information explicitly on Carbon Indicators for each relevant Carbon Pool and emission source, nor does it describe approaches for estimating Project emissions and removals achieved in each Verification Period.	mentioned.		tool is referenced in the relevant sections of PU002.		
2.6 Harvesting	2.6.1	Plan Vivo Certificates cannot be claimed for Carbon Benefits that will be reversed as a		REDD in community managed forest (PT002)					

		result of tree harvesting within 50-years of the Start Date		Version 2, doesnot discuss about the harvest of tree.					
	2.6.2	If quantifying carbon stocks for a Project Scenario that includes harvesting with even-aged management, the number of Plan Vivo Certificates claimed must not exceed the average Carbon Benefit over at least one full rotation that includes the final harvest.		REDD in community managed forest (PT002) Version 2, doesnot discuss about the harvest with evenaged management.					
	2.6.3	If quantifying carbon stocks for a Project Scenario includes thinning or partial felling, the number of Plan Vivo	To be provided under separate module assessment sheet. (This process						

		Certificates claimed must not exceed the minimum post-harvest Carbon Benefit.	is extensively discussed in detail in PU001).						
2.7 Leakage	2.7.1	Methodologies must describe approaches to estimate potential Leakage and/or applying an appropriate Leakage Discount in each year of the Crediting Period (for rPVCS and vPVCs) or Forward Crediting Period (for fPVCs).		The REDD in community managed forest (PT002) Version 2 does not apply leakage discount during each verification period.					
	2.7.2	Methodologies for claiming vPVCs must describe approaches for estimating Leakage that occurs, or for applying an appropriate Leakage Discount during							

		each Verification period.							
2.8 Calculation of carbon benefits	2.8.1	Methodologies must describe approaches to calculate expected Carbon Benefits for each year of the Crediting Period (for rPVCs and vPVCs) or Forward Crediting Period (for fPVCs) by subtracting expected Project Scenario and Leakage emissions from the Carbon Baseline emissions.	The REDD in community managed forest (PT002) Version 2 is applicable for projects seeking to claim fPVCs or vPVCs only and not rPVCs. Refer Equation 7-13 of the document.						
	2.8.2	Methodologies for claiming vPVCs must describe approaches to calculate Carbon Benefits achieved during	The Estimation of carbon benefits from REDD in						

		each Verification period by subtracting measured Project Scenario emissions and measured or maximum-potential Leakage emissions from the Carbon Baseline emissions.	community managed forest (PT002) Version 2 is applicable for projects seeking to claim fPVCs or vPVCs only. Actual project scenario emissions are calculated in section 5.7.2 in detail.						