



IMPROVING LIVELIHOODS THROUGH AGROFORESTRY PLANTATIONS IN INDIA



DOCUMENT PREPARED BY CARBON CHECK (INDIA) PRIVATE LIMITED

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Client	Infinite Environmental Solutions Limited
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Summary:

Description of the project

Infinite Environmental Solutions Limited has appointed Carbon Check (India) Private Limited to carry out validation and verification of VCS project activity **“Improving livelihoods through Agroforestry Plantations in India”** (hereafter referred to as “The project”) with regards to the relevant requirements of **VCS Standard version 4.7 (dated 16/04/2024)**^{/B01/}.

The VCS project **“Improving livelihoods through Agroforestry Plantations in India”** is a grouped Afforestation Reforestation & Revegetation (ARR) agroforestry project. The first Project Activity Instance (PAI) spans 894.06 hectares across districts in Andhra Pradesh, Madhya Pradesh, and Tamil Nadu, with the grouped project boundary covering these three states of India. The species selected for the first PAI include both native and non-native (but adapted to local conditions) species such as Mango, Guava, and Red Sanders. Mango and Red Sanders have been planted in Andhra Pradesh and Tamil Nadu, while Guava has been planted exclusively in Madhya Pradesh. These plantations have been established by farmers on their privately owned agricultural lands, which were previously classified as degraded or undergoing degradation.

In the first PAI, plantations were carried out between 2018 and 2023, covering a total area of 894.06 hectares. This includes Mango plantations on 687.27 hectares across Andhra Pradesh and Tamil Nadu, Red Sanders plantations on 80.96 hectares in Andhra Pradesh, and Guava plantations on 125.83 hectares in Madhya Pradesh. The aim of this project is to enhance carbon sequestration, provide economic benefits to local farmers, promote sustainable agricultural practices, and support the livelihoods of small-scale farmers. Additionally, the project improves soil health and increases biodiversity in the region.

The 1st PAI started on 1st March 2018 with an estimated GHG removal for entire 30 years crediting period is 179,711 tCO₂e with annual average of 5,990 tCO₂e/year (before deducting buffer) and the net GHG removals achieved during the current monitoring period are 65,813 tCO₂e.

The project is being designed with application CDM methodology AR ACM0003: Afforestation and reforestation of lands except wetlands v2.0 and the proposed project selected five carbon pools for carbon accounting are:

- ✓ Above ground biomass
- ✓ Below ground biomass

- ✓ Dead Wood,
- ✓ Leaf Litter
- ✓ Soil Organic Carbon.

Description of the validation and verification

Infinite Environmental Solutions Limited ("hereafter referred to as PP") has appointed Carbon Check (India) Private Limited ("hereafter referred to as VVB") to carry out the Joint Validation and 1st periodic verification of the grouped project and 1st PAI of "Grouped Plantation Activity in Various States of India" with regards to the relevant requirements of VCS Standard version 4.7.

Table I: Dates & Timelines of VCS project

Start date	01 March 2018
Listing of project on VERRA registry for public comments	18 th July 2022
Crediting period	1 st March 2018 – 29 th February 2048 (30 years)
First monitoring period	1 st March 2018 – 30 th September 2024
Date of monitoring	11 th November 2024 – 14 th November 2024

Purpose and Scope of validation and verification

The purpose of the validation and verification is the independent evaluation of the project's compliance with the VCS Standard v4.7^{/B01/}, in particular the grouped project eligibility, project's baseline, monitoring plan, project implementation, carbon captured by the project, methodology requirements and compliance with the relevant VCS^{/B01/} and host party criteria. These are validated and verified in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria and the project has been implemented in compliance with the monitoring plan stated in the VCS PDMR^{/01/}. VVB's objective is to perform a thorough, independent assessment of the validation and verification of the grouped project

Validation and verification scope is defined as an independent and objective review of the VCS PDMR^{/01/} against the relevant criteria and guidance documents provided by VCS including the following^{/B01/}:

- ✓ VCS Program Guide (v4.4, dated 29/08/2023)
- ✓ VCS Standard (v4.7, dated 16/04/2024)
- ✓ VCS Program Definitions (v4.5, dated 16/04/2023)
- ✓ VCS Registration & Issuance Process (v4.5, dated 16/04/2024)
- ✓ VCS AFOLU Non-Permanence Risk Tool (v4.2, dated 03/05/2024)
- ✓ VCS Validation and Verification Manual (v3.2, dated 19/10/2016)
- ✓ AFOLU Guidance: Example for Calculating the Long-Term Average Carbon Stock for ARR Projects with Harvesting

Based on the requirements above, the VVB has assessed if the project meets the applicability criteria of the selected baseline and monitoring/B02/ methodology, “AR-ACM0003: Afforestation and reforestation of lands except wetlands -version 02.0”. VVB has also assessed the claims and assumptions made in the VCS PDMR^{/01/} in accordance with the monitoring plan provided in the VCS PDMR^{/01/}.

Method and criteria used for validation and verification

To conduct the validation and verification and verification audit, Carbon Check (India) Private Limited (CC IPL hereafter) conducted an assessment including a desk review of the VCS PDMR^{/01/} and supporting documents^{/1-24} in compliance with the requirements stated in the VCS Validation and verification and Verification Manual v3.2. Thereafter, verified the details and information from VCS PDMR^{/01/} by conducting an on-site inspection from 11/11/2024 – 14/11/2024.

Number of findings raised during validation and verification. APPENDIX 4: FINDINGS LOG

During the joint validation and verification, a total of 24 findings have been raised, which includes eight (08) Corrective Action Requests (CARs), Fifteen (15) Clarification Requests (CLs) which have been satisfactorily closed, and 01 Forward Action request (FAR) has been raised.

Uncertainties associated with validation and verification

No uncertainty associated with the project implementation and calculations of GHG removals have been observed by the VV team.

Validation and verification conclusions

Validation Conclusion: In accordance with the requirements of VCS Standard v 4.7^{/B01/} and the methodology applied AR-ACM0003 v2.0^{/B02/}, the validation and verification team confirm that all

the values and assumption included in the VCS PDMR^{/01/} including objectives, scope and criteria, level of assurance, baseline and monitoring plan are valid and applicable.

Verification conclusion: VVB, based on the on-site inspection and the review of documents^{/1-24/} including VCS PDMR^{/01/}, confirms that the project implementation and the calculation carbon captured by the project are in accordance with:

- ✓ Monitoring plan and other assumptions stated in the VCS PDMR^{/01/}
- ✓ Applied CDM methodology AR-ACM0003 v 2.0^{/B02/}
- ✓ Host country regulations^{/24/}

Table II: Ex-ante carbon^{/02/} estimated and ex-post carbon^{/02/} (before deducting buffer) sequestered by the project:

Year	Estimated (ex-ante) carbon sequestration	Achieved (ex-post) carbon sequestration
01 st March 2018 to 30 th September 2024	53,566	65,813

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1 INTRODUCTION

1.1 Objective

The purpose of this validation and verification audit is to conduct an independent assessment of the project to determine whether the project complies with the validation and verification criteria as set out in section 1.2 of this report including their material accuracy. This report is to document the compliance of the VCS project **“Improving livelihoods through agroforestry plantations in India.”** (hereafter referred to as “project”) with the requirements of the Verified Carbon Standard (VCS) and the applied CDM methodology. In line with VCS PDMR^{/01/}, the project is owned by Infinite Environmental Solutions Limited (hereafter referred to as “PP”).

In line with Joint PDMR, VVB has ascertained the following on the VCS project:

VCS category	Afforestation, Reforestation and Revegetation (ARR)
Applied methodology	CDM Methodology “AR-ACM0003: Afforestation and reforestation of lands except wetlands -Version 02.0”/B02/
Sectoral scope	14: Agriculture, Forest and other Land Use (AFOLU)

The validation and verification objective of the project includes:

- ✓ Assessment of compliance with the VCS Program Guide version 4.4^{/B01/}, VCS Standard version 4.7^{/B01/} and other relevant VCS requirements^{/B01/}.
- ✓ Assessment of compliance with the applied CDM methodology AR-ACM0003 version 2.0^{/B02/}.
- ✓ Assessment of project compliance with the relevant rules including host country legislation.
- ✓ Evaluation of monitoring plan^{/B01/} and develop conclusions regarding the monitoring methodology and the collection archiving of data relevant to GHG emissions estimation and baseline emissions.
- ✓ Evaluation of the calculation of GHG emissions^{/02/}, including appropriateness of source, sink, and reservoirs, the correctness and transparency of formula and factor used, assumptions related to estimating GHG emission removals, and uncertainties.
- ✓ The extent to which methods and procedures, including monitoring procedures,

have been implemented in accordance with the validated project description. This includes ensuring conformance with the monitoring plan.

- ✓ The extent to which GHG emission reductions and removals reported in the monitoring report are materially accurate.
- ✓ To develop conclusion based on validation criteria, submission of corrective action requests, clarification requests and forward action requests, as applicable

1.2 Scope and Criteria

Scope of Validation: The scope of validation is to assess the conformance of the VCS PDMR^{/01/} and other relevant supporting documents^{/1-24/} against the VCS requirements and applied methodology^{/B02/} and tools^{/B03/}, including the assessment of:

- ✓ Project Area^{/01//03/}
- ✓ Physical infrastructure, activities, technologies, and processes of the VCS project^{/01/}
- ✓ Project's physical boundaries^{/01//03/},
- ✓ GHG sources, sinks and/or reservoirs^{/02/}.
- ✓ Growth and yield models^{/02/},
- ✓ Stakeholder involvement^{/07/}
- ✓ Environmental impacts,
- ✓ Baseline and additionality justification^{/15/16/}
- ✓ Sustainable development contributions
- ✓ Monitoring plan^{/06/}
- ✓ Estimated GHG removals and long-term average calculation^{/02/}
- ✓ Grouped project eligibility for the inclusion of PAI
- ✓ Eligibility of 1st PAI in line with grouped project inclusion criteria

Scope of Verification: The scope of the verification includes:

- ✓ VCS Project implementation^{/01/}.
- ✓ Application of methodology^{/B02/} and tools^{/B03/}
- ✓ Time period covered/ duration of monitoring period.^{/02/}
- ✓ Achieved GHG removals and long-term average calculations^{/02/}
- ✓ Adherence to the monitoring plan and SOPs^{/06/}

The **validation and verification** criteria follow the guidance documents provided by VCS including the following^{/B01/}: VCS Standard version 4.7, VCS Program Guide version 4.4, AFOLU Non- Permanence Risk Tool version 4.2, AFOLU Guidance: Example for Calculating the Long-Term Average Carbon Stock for ARR Projects with Harvesting and

the applied CDM methodology AR-ACM0003 – “Afforestation and reforestation of lands except wetlands” (version 2.0)^{B02/}.

1.3 Reasonableness of Assumptions and Level of Assurance

The assessment was conducted to provide a reasonable level of assurance regarding conformance with the defined audit criteria and materiality thresholds within the audit scope. During the desk review, VVB thoroughly reviewed available literature to assess the reasonableness of assumptions for validation and the level of assurance for verification.

Validation – Reasonableness of Assumptions

For estimating biomass and carbon stocks, species-specific allometric equations have been used for Mango (*Mangifera indica*) and Guava (*Psidium guajava*), while a volumetric equation has been applied for Red Sander (*Pterocarpus santalinus*). VVB has reviewed the relevant literature supporting these equations:

Mango: $Y = 0.20 \times \text{Collar Diameter}^{1.85}$ (sourced from *Biomass, carbon stocks estimation and predictive modeling in mango-based land uses on degraded lands in the Indian Sub-Himalayas*).

Guava: $Y = (3.264X^{1.012}) + 3.446$ (sourced from *Biomass production and carbon stock in Psidium guajava orchards under hot and sub-humid climate* by Sushanta Kumar Naik et al.).

Red Sander: $v^{1/2} = -0.144504 + 2.943115 \times D$ (sourced from Andhra Pradesh Forest Inventory Report, 2010*).

VVB conducted a comprehensive review of these scientific sources and confirmed their validity within the applied methodology. The assumptions made during validation rely on literature-based values of collar diameter (D or X), ensuring consistency with established research. However, variations in site-specific conditions, such as soil quality and climate, may introduce uncertainties in projected carbon stock estimates.

Verification – Level of Assurance

For ex-post calculations, collar diameter values were obtained from field measurements rather than literature sources. During the audit, VVB reviewed raw data sheets and assessed the methodology for collar diameter collection. The approach was found to be appropriate and conservative, ensuring reliability in the reported biomass and carbon stock estimates.

The materiality threshold for errors, omissions, and misrepresentations in reported GHG emission reductions/removals was set at 5%, as established for small projects under the

VCS Standard. All revisions of the validation and verification report underwent independent internal technical review before submission to the client to confirm compliance with CCIPL requirements.

Based on audit findings, VVB provides reasonable assurance that the project's GHG assertion is materially correct and a fair representation of the GHG data and information. The sectoral expertise, review of removal rates, and assessment of carbon calculations indicate that the project's reported values are plausible and acceptable.

1.4 Summary Description of the Project

The VCS ARR project titled “*Improving livelihoods through Agroforestry Plantations in India*” aims at promoting sustainable agroforestry for small-scale farmers with plantation of forestry trees on their self-owned agricultural lands to provide them with financial benefits besides promoting sustainable activities to ensure GHG mitigation in the state of Andhra Pradesh, Tamil Nadu and Madhya Pradesh, India. The project has demonstrated compliance with the approved CDM methodology AR-ACM0003 (version 2.0). The proposed project is a grouped project with geographical boundary of three Indian States namely Andhra Pradesh, Tamil Nadu and Madhya Pradesh with scaling up to 4000 ha.

In line with the VCS PDMR, the first Project Activity Instance (PAI) covers an area of 894.06 hectares, for which all relevant calculations and assessments have been completed. While the Joint VCS PDMR outlines a planned total of 4,000 hectares for the entire grouped project, this figure is indicative only and has no material impact on the validation or the first periodic verification of the grouped project and the first PAI at the time of initial registration and issuance. The farms included in the first PAI consist of privately owned agricultural lands that were previously classified as degraded, barren, or low yielding. Based on the review of remote sensing GIS data and KML shapefiles^{/03/}, the Forest/Non-Forest Analysis Report^{/03/}, supporting documents^{/09/12/}, and findings from on-site inspections and stakeholder interviews^{/101–124/}, the VVB has verified that the project involves the plantation of forestry species on these previously degraded lands. The VVB further confirms that the project area does not involve any conversion of natural ecosystems, does not fall under the wetland classification^{/03/}, contains no organic soils^{/16/}, and that only non-organic fertilizers^{/06/15/} are used within the project scenario.

As confirmed through on-site inspection/interviews, the rights to carbon credits have been waived by the farmers in Favor of MFI, Green mile Agroforestry Pvt. Ltd., and Outreach

Agreement through Farmer Agreements^{/05/}. These rights have subsequently been transferred to Infinite Environmental Solutions by the ground implementation partners through Service Agreements^{/12/}. As stipulated in the agreements^{/05/}, farmers have committed to maintaining carbon stocks for the entire duration of the project 40 years.

VVB has also assessed the SOP for Plantation Management Plan^{/06/}, which includes all the comprehensive procedures for monitoring and management plans of the project activity for the entire project period. VVB confirms that PP has used a stratified random sampling procedure with a Square (25m*25m for Mango and Red Sanders and 15*15m for Guava) sample plot design. PP has also determined the sample plot size using *“Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism A Field Manual”*.

The 1st PAI started on 1st March 2018 with estimated GHG removal for entire 30 years crediting period is 179,711tCO₂e with annual average of 5,990 tCO₂e/year (before deducting buffer) and the net GHG removals achieved during the current monitoring period is 65,813 tCO₂e. The proposed project selected five carbon pools for carbon accounting are:

- ✓ Above ground biomass
- ✓ Below ground biomass
- ✓ Dead Wood,
- ✓ Leaf Litter,
- ✓ Soil Organic Carbon.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The validation & verification assessment has been performed through a combination of document review and interviews with the relevant personnel as discussed in section 2.3 and 2.4 of this report. At all times, the project has been assessed for conformance against the criteria described in section 1.2 of this report. As discussed in section 2.7, findings APPENDIX:2 FINDING LOG have been issued to ensure that the project's conformance to all requirements

The joint validation and verification of the project includes the following assessment activities:

- ✓ Contract review & signing
- ✓ Appointment of team members based on competencies.
- ✓ Assessment Planning including preparation of validation & Verification plan (sampling plan) and strategic risk analysis and evidence gathering plan (activities)
- ✓ Desk review on VCS PDMR^{/01/}, carbon sequestration calculations (ex-ante & ex- post)^{/02/} and other documents^{/1-24/}
- ✓ A review of data and information presented by the PP to verify their completeness.
- ✓ A review of the monitoring plan and monitoring methodology paying particular attention to the frequency of measurements, the competency of personnel performing the monitoring and the QA/QC procedures
- ✓ An evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of GHG removals by sink
- ✓ Interviews with the stakeholders and local stakeholder meeting(s)^{/07/} during the on-site inspection
- ✓ Reporting and recording of assessment.
- ✓ Findings and their closure^{APPENDIX:3 FINDINGS LOG}
- ✓ Additional validation/verification activities
- ✓ Submission of final report

A project specific validation and verification plan is developed to guide the auditing process to ensure efficiency and effectiveness. The purpose of the validation and verification plan is to present a risk assessment for determining the nature and extent of validation and verification procedures necessary, thus reducing the risk of auditing error to a reasonable level.

The evidence gathering plan was followed by VVB to lower the risk to an acceptable level. The techniques used by VVB for validation are as follows:

- ✓ Inquiry
- ✓ Analytical testing
- ✓ Confirmation
- ✓ Recalculation
- ✓ Examination

- ✓ Retracing
- ✓ Sampling
- ✓ Cross-checking
- ✓ Reconciliation

The validation and verification of the VCS PDMR^{/01/} were conducted in compliance against the requirement documents as stated in APPENDIX 2: List of Documents^{/1-24/B01/-/B03/}.

VCS Validation and Verification Time Frame:

The time frame envisaged for this assignment is as follows:

Milestone description	Time
Date of contract signing with the VVB	18 th October 2024
Kickoff meeting	25 th October 2024
On-site Audit	11 th November 2024 – 14 th November 2024

Sampling Plan

Verification Approach: Acceptance Sampling (ASP)

According to section 3.3.1.2 of VCS VVB Manual v3.2,

“VVBs should apply their professional judgment in determining the most appropriate method for Data Testing and Determining Representative Samples and are encouraged to use the guidance from “Sampling and Surveys for CDM Project Activities and Programmes of Activities v09.0,

Therefore, VVB has implemented acceptance sampling method for data testing and choice of representative samples plots”.

ASP- Acceptance Sampling

According to paragraph 28 of CDM tool “Sampling and Surveys for CDM Project Activities and Programmes of Activities v09.0^{/B01-h/},

When the project participants or the coordinating/managing entity have applied a sampling approach, the DOE may apply acceptance sampling as described in the steps indicated in paragraphs 29–38 below as part of validation and verification activities”

Moreover, according to paragraph 29, For applying acceptance sampling, the DOE should follow the steps below:

- a. Take a random sample of the project participants' or the coordinating/managing entity's sample records;
- b. Check, using its own professional judgement, the acceptability (or otherwise) of the data for each record in the project participants' or the coordinating/managing entity's sample records; and then
- c. Based on the number of records where there is agreement, determine whether the project participants' or the coordinating/managing entity's sample records meet the requirements.

VVB has adopted a standard method of calculating sample size by Morris Hamburg (Hamburg, 1985) using precision level, confidence level and response distribution for determining the sample size. VVB team has opted for 15% margin of error and 90% confidence level in determining the VVB's sample size. The total permanent sample selected by PP i.e., 46 sample plots. Accordingly, VVB team plan to take 09 samples from the designated project region included under the project activity for the reported monitoring period with pro-rata sample size calculated based on sample size taken by the PP (i.e., weightage of sample size for a project area taken by PP) multiplied by the VVB sample size.

Raosoft®		Sample size calculator
What margin of error can you accept? 5% is a common choice	15 %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer <i>yes</i> , while 10% answer <i>no</i> , you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? Typical choices are 90%, 95%, or 99%	90 %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer <i>yes</i> would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? If you don't know, use 20000	46	How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.
What is the response distribution? Leave this as 50%	90 %	For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under More information if this is confusing.
Your recommended sample size is	9	This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Furthermore, this sampling method is considered appropriately representative of the total population based on the following criteria as required by "CDM Sampling and Surveys for CDM Project Activities and Programmes of Activities v09.0."

- VVB has adopted a standardized method for calculating sample size, incorporating precision and confidence levels to establish the appropriate sample size.
- The sample size is determined based on the plantation involved and the area (hectares).

- The baseline of project activity is similar i.e., degrading agricultural lands with low productivity across all three states.
- The project involves the plantation of three species across three states: Mango is planted in both Andhra Pradesh and Tamil Nadu, Red Sandalwood is planted in Andhra Pradesh, and Guava is restricted to Madhya Pradesh.

The selection of sample plots is based on the area occupied by each species in the respective states. Guava is the sole species in Madhya Pradesh. As mentioned above, VVB has been conducted site visits for a total of 9 plots, with two plots designated for Guava in Madhya Pradesh. The remaining seven plots are allocated between Red Sandalwood and Mango. Given the larger area and higher number of PSPs for Mango, VVB has chosen to visit five Mango plots and two Red Sandalwood plots in Andhra Pradesh whereas two plots of Guava in Madhya Pradesh.

Sample approach for On-site inspection:

01-March- 2018 to 30-September-2024 (First monitoring period)	Species	States	Plantation Year	Number of plots
PP's sample size	Mango	AP, TN	2018-2023	33
	Red Sandalwood	AP	2019-2022	05
	Guava	MP	2018-2022	09
Total				47
VVB's sample size	Mango	AP	2018,2020,2021,2022,2023	05
	Red Sandalwood	AP	2019,2022	02
	Guava	MP	2018,2021	02
Total				09

Validation & Verification Team

Sr.No	Role	Type of Resource	Last Name	First Name	Affiliation (e.g., name of central or other office of VCS Validator or Outsourced entity)	Involvement in			
						Desk/document	On-site inspection	Interviews	Validation findings
1.	Team Leader	IR	Vempally	Prashanth	CC IPL	x	x	x	x
2.	Assessor	IR	Thapliyal	Jyoti	CC IPL	x	x	x	x

Technical reviewer and approver of the Joint Validation & verification report

Sr. No.	Role	Type of Resource	Last Name	First Name	Affiliation (e.g., name of central or other office of VCS Validator and Verifier or Outsourced entity)
1.	Technical Reviewer	IR	Kapoor	Isha	CC IPL
2.	Approver	IR	Anand	Amit	CC IPL

2.2 Document Review

A detailed review of all project documentation^{/01//02/}, has been conducted to ensure consistency with and identify any deviation from VCS program requirements^{/B01//B03/} and the methodology^{/B02/}. During the document review, CC IPL has applied standard auditing techniques to assess the quality of information provided. The joint validation and verification were performed primarily based on the review of the VCS PDMR^{/01/} and the supporting documentation^{/01-24/}.

For Validation, this process includes

- ✓ A review of data and information presented to verify completeness and consistency in accordance with VCS Standard (version 4.7)^{/B01/} requirements.
- ✓ A review of the project description^{/01/} and monitoring methodology^{/B02/}, paying particular attention to the applicability conditions of the methodology^{/B02/}, baseline and additionality related requirements.
- ✓ A review of the monitoring plan^{/01/} and the project's compliance with relevant VCS criteria^{/B01/}.

For Verification, this process includes

- ✓ A review of data and information presented by the PP to verify their completeness.
- ✓ A review of the MP and monitoring methodology, paying particular attention to the frequency of measurements, the competency of personnel performing the monitoring, and the QA/QC procedures, and
- ✓ An evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of GHG removals^{/02/} by sink.

The initial review focused on the VCS PDMR (version 1.0, Dated: 25/10/2024) and included an examination of the project details, implementation design, stakeholder engagement, baseline scenario, additionality, project boundary, data and parameters, and estimation of GHG emission reductions and removals. VVB requested the project proponent to present the supporting information and documents. Documents reviewed include ex-ante data spreadsheets, contractual agreements^{/11/21/}, stakeholders involved in project implementation^{/05/06/}, Non-Permanence Risk Report^{/04/}, peer-reviewed literature^{/B05/}, monitoring SOPs and other supporting documents APPENDIX 2: List of Documents. Through the assessment process, the VCS PDMR^{/01/} and the supporting documents were evaluated, and CARs and CLs were raised by the assessment team to confirm the actions taken by the PP.

Refer to table in APPENDIX 2: List of Documents outlining the documentation reviewed during the joint validation and verification process

2.3 Interviews

The interviews have been performed as part of the validation and verification process to confirm and verify the information provided in the documents (see Appendix 1). The validation and verification team met with individuals with various roles in the project. This included a series of interviews with the project management team and on-site and in-country staff that support the mission of the project.

Table IV below describes the on-site interview process and further identifies personnel, including their roles, who were interviewed and/or provided information additional to that provided in the VCS PDMR^{/01/} and any supporting documents^{/1-21/}.

During the on-site inspection^{/i-01 -i-22/}, some farmers/landowners were interviewed on the VCS project and status of their plantation. The opening meeting was conducted at MFI office, Andhra Pradesh on 11/11/2024 with PP, Implementation partner and Project Management team and closing meeting conducted on 14/11/2024 with PP, and Project Management team at Madhya Pradesh at PP office.

Table IV: Project representatives and stakeholders interviewed

S. No.	Interview			Date	Subject
	Last name	First name	Affiliation		
/i-01/	Sahib	Meerasa Silai	MFI	11/11/2024	- PP's roles and responsibilities. - Baseline scenario. - Project implementation. - Future project plans. - Organization structure, roles, and responsibilities. - Non-Permanence risk Assessment - Ownership of land titles - Ownership of carbon credits
/i-02/	P.	Bhupatti	MFI	11/11/2024	- PP's roles and responsibilities. - Baseline scenario. - Project implementation. - Future project plans
/i-03/	P.	Harish	Coordinator, MFI	11/11/2024	- PP's roles and responsibilities. - Baseline scenario. - Project implementation.
/i-04/	Tomar	Pankaj Kumar	IES	11/11/2024-	Future project plans.

				12/11/2024	- Organization structure, roles, and responsibilities. - Changes in organization structure - Ownership of land titles - Ownership of carbon credits
/i-05/		Munailashwa	Technical advisor,MFI	11/11/2024	
/i-06/	Pathan	Sahil Javed	NBS Team,IES	11/11/2024-14/11/2024	
/i-07/	Prajapati	Dhaval	NBS Team, IES	11/11/2024-12/11/2024	
/i-08/		Dhralaslagai	MFI	11/11/2024	
/i-09/	Rao	Nageshwar	Farmer	11/11/2024	
/i-10/	K.	Vinodh	Farmer	11/11/2024	
/i-11/	Naidu	Ananada	Farmer	11/11/2024	
/i-12/	K.	Manohar	Farmer	11/11/2024	
/i-13/	Naidu	Siddama	Farmer	11/11/2024	
/i-14/		Shankaraiyah	Farmer	11/11/2024	
/i-15/		Chitibahu	Farmer	14/11/2024	
/i-16/	A.	Praveen good	NBS, IES	14/11/2024	

/i-17/	E.	Yadagiri	Farmer	14/11/2024	
/i-18/	Patidar	Ishwarlal	Farmer	14/11/2024	
/i-19/	Chauhan	Rajaram	Ground volunteer	14/11/2024	
/i-20/	S.	Pradeep	IES	14/11/2024	- Stakeholder consultation process - Grievance mechanism - Baseline scenario - Ownership of carbon credits - Project implementation
/i-21/	M	Murali	NBS Team, IES	14/11/2024	
/i-22/	Pant	Deepak	GIS expert, IES	14/11/2024	- PP's roles and responsibilities. - Baseline scenario. - Project implementation. - Future project plans. - Organization structure, roles, and responsibilities. - Non-Permanence risk Assessment - Ownership of land titles - Ownership of carbon credits

2.4 Site Visits

VVB has been conducted a review and on-site visit to validate the project's compliance with the objectives outlined in section 2.1.1 & 2.1.2 of VCS VVB Manual v3.2^{/B01/}. This includes assessing the complete dataset for both qualitative information (such as procedures or applicability of VCS rules and methodology) and quantitative data (for example, ex-ante & ex-post carbon calculation procedures), as required by section 3.3.1.1 of VCS VVB Manual v3.2^{/B01/}.

Given that PP is seeking joint validation and verification for the proposed 1st PAI and VVB has employed the sampling approach (refer section 2.1) at validation and verification and 47 PSPs selected at this stage by PP.

Plantation of the three species for varying year of plantations has been observed by the VVB. VVB has interviewed the relevant stakeholders^{/i-01 -i-22/}. VVB has observed the change in baseline scenario and the plantation techniques carried out for specific area under specific baseline scenario. Also, the mitigation measures carried out to minimize the risk for project area has also been observed.

Table: Details of the PSPs visited during the audit and details of farmer's interviews.

Sample State and coordinates	Plot Number, GPS	Landowner	Species and Plantation Year	Farmer interviews
Plot 1. Andhra Pradesh 		Vinodh Kumar	Mango, 2021	Based on the onsite interviews ^{/i-01 -i-22/} VVB confirms that the plantation of Mango and Red Sander have been carried out in these plots by the farmers with the help of the ground implementation partner MFI. Moreover farmers are the legal owners of the land which has been verified by the VVB by reviewing land records ^{/19/} and verifying it on online land record portals of the states—on site. Farmers are well aware of carbon credit program and
GPS Coordinates: 13.356882 N 79.352605 E				
Plot 2. Andhra Pradesh 		Nayeshwar Rao	Mango, 2020	
GPS Coordinates: 13.275241 N 79.353624 E				
Plot 3. Andhra Pradesh		Ananda Naidu	Mango, 2023	

 GPS Coordinates: 13.295054 N 79.354180 E			willingly participated in the project. The benefit sharing and grievance has been transparently demonstrated to the farmers. Local stakeholder consultations and training is being provide to the farmers under the project. For the grievances related to the plantation establishment channels such as WhatsApp group has been made. In addition to farmers have contact numbers of ground volunteers from the Implementation team. Furthermore, farmers are well aware of the clauses of the agreements and has pledged to maintains the plantations for the project longevity.
Plot 4. Andhra Pradesh  GPS Coordinates: 13.291086 N 79.352499 E	Siddama Naidu	4.5*4.5	
Plot 5. Andhra Pradesh 	Shankraiyah	6*6	

GPS Coordinates: 13.302887 N 79.308585 E			
Plot 6. Andhra Pradesh 	Bhurath Reddy	3*3	
GPS Coordinates: 15.206126 N 79.431578 E			
Plot 7. Andhra Pradesh 	Bhurath Reddy	3*3	
GPS Coordinates: 15.498711 N 79.453516 E			
Plot 8. Madhya Pradesh			

			Based on the onsite interviews/^{i-01 -i-22/} VVB confirms that the plantation of Guava has been carried out in these plots by the farmers with the help of the ground implementation partner Outreach Projects (Part of Infinite Environmental Solution Limited). Moreover, farmers are the legal owners of the land which has been verifies by the VVB by reviewing land records/^{19/} and verifying it on online land record portal of the states on site. Farmers are well aware of carbon credit program and willingly participated in the project. The benefit sharing and grievance has been transparently demonstrated to the farmers. Local stakeholder consultations and training is being provide to the farmers under the project. For the grievances related to the plantation establishment channels such as WhatsApp group has been made. In addition to farmers have contact numbers of ground volunteers from the Implementation team. Furthermore, farmers are well aware of the clauses of the agreements and has pledged to maintains the plantations for the project longevity.
GPS Coordinates: 23. 10266 N 75.11244 E			
Plot 9. Madhya Pradesh 			
GPS Coordinates: 23.10206 N 75.11267 E			

During the on-site inspection, VVB used the following evidence-gathering activities and techniques in the validation and verification:

- ✓ observation;
- ✓ inquiry;
- ✓ analytical testing;
- ✓ confirmation;

- ✓ recalculation;
- ✓ examination;
- ✓ retracing;
- ✓ tracing;
- ✓ control testing;
- ✓ sampling;
- ✓ estimate testing;
- ✓ cross-checking
- ✓ reconciliation

The following aspect of the project have been assessed during the on-site inspection:

- ✓ Applicability of the methodology applied to demonstrate
- ✓ Project Proponent's roles and responsibilities.
- ✓ Project Implementation framework
- ✓ SDG Impacts associated with the project.
- ✓ SOPs and QA/QC Procedures
- ✓ No Net Harm
- ✓ Baseline scenario.
- ✓ Additionality.
- ✓ Forest and Non-Forest analysis.
- ✓ Project implementation.
- ✓ Future project plans.
- ✓ Organization structure, roles and responsibilities.
- ✓ Non-Permanence risk Assessment
- ✓ Ownership of land titles

Sampling/Verification Plan:

In order to ensure a complete, transparent and timely execution of the joint validation and verification task, the team leader had planned the complete sequence of events necessary to arrive at a substantiated final validation and verification opinion. Various tools had been established in order to ensure an effective assessment planning.

Step 1- Identification of Materiality threshold

According to the section 4.1.10. of VCS Standard (version 4.7)^{B01/},

“The threshold for materiality with respect to the aggregate of errors, omissions and misrepresentations relative to the total reported GHG emission reductions and/or removals shall be five percent for projects and one percent for large projects”.

The validation and verification team concluded that the materiality threshold applicable to the project activity based on the actual GHG removals achieved is 5% of 65,813 tCO₂e which is equal to 3,290.65tCO₂e.

Applicable threshold level	Threshold	Category
☐	1 %	Large projects: Emission reductions or removals for registered large scale project activities achieving a total removal more than 300,000 tonnes of CO ₂ e per year
☒	5 %	Projects: Emission reductions or removals for registered small-scale project activities achieving total removal of less than or equal to 300,000 tonnes of CO ₂ e per year

Step 2- Identification of risks, their level and assessment

On the basis of the risk analysis the validation has been planned in accordance with the latest applicable version of Guideline: “Application of materiality in validations”. The risk assessment has been used in developing the validation and evidence-gathering plans. Any input into the risk assessment shall be recorded.

The risk assessment output may address how the validation is planned with respect to the following:

- ✓ GHG emissions SSRs.
- ✓ boundaries.
- ✓ data management details.
- ✓ management controls

For Validation

Table: Risk assessment during validation

S.No.	Risk that could lead to material errors,	Assessment of the potential risk		Assessment of the records/information/interview with personnel to check
		Risk Level	Justification	

	omissions or misstatements			controls/mitigation measures
1.	VCS project activity requirements Adherence to VCS rules and requirements related to AFOLU and applicable category i.e., ARR, including criteria for inclusion of future project instances.	High	This corresponds to high risk since compliance with the VCS rules and requirements is critical for the project. Further, criteria for inclusion of future project instances are important as this would be the basis of inclusion of new project instances.	On the basis of review of the VCS PDMR^{/01/} and supporting documents^{/1-22/} thoroughly in compliance with each section of VCS template instructions and VCS Standard, v4.7, VVB concludes that the risk has been mitigated.
2.	Ownership Adherence to ownership and legal right of the project including the proof of right of carbon credits and land ownership.	High	This is a grouped project and involves self-owned private/farmer's lands. The project proponent, Infinite Environmental Solutions Limited, along with Implementation partner i.e. Mangrove Foundation of India (MFI), Green Mile and outreach Projects holds the contractual right to the land within the project boundary for the Mango, Guava and Red Sander to be planted, and the associated GHG emission removals	Through on-site inspections and interviews^{/11-122/}, VVB confirmed that other implementation partners have entered into agreements with farmers to implement the proposed activities. In these agreements^{/05/}, farmers have assigned management and carbon rights to the implementation partners. Subsequently, these implementation partners have entered into service agreements^{/12/} with PP Infinite Solutions, wherein the carbon rights have been transferred to PP (as specified in Section 8.3 of the service

			(carbon credit agreement). The evidence of service agreements of Infinite Environmental Solutions Limited (PP) with the other three ground implementing partners and title agreements of ground implementation partners i.e. MFI, Green Mile and Outreach Projects with each landowner/ farmer (for each project instance) is pertinent, hence, VVB considers this as high risk.	agreements). This arrangement complies with Section 3.8(6) of the VCS Standard v4. Therefore, VVB confirms that the risk related to ownership has been mitigated.
3.	Baseline methodology Adherence to selected baseline protocol as per the applied methodology, AR-ACM0003, Version 2.0 and applicability and identified project boundary.	High	This corresponds to high-risk category since compliance with the applied methodology, AR-ACM0003 v2.0 is critical for the VCS project.	PRA report^{/15/} has been provided by PP to appropriately define the baseline scenario for the project, along with the LULC Maps^{/03/} which VVB has found appropriate and satisfactory. In addition to that VVB has also conducted interviews^{/i1-i22/} with farmers participating on baseline scenario and possible causes of land degradation and how

				PRA was conducted. Based on the above observations VVB confirms that the pre-project scenario has been degraded crop land, this refers to areas where agricultural activity is low-yielding, unproductive, and primarily practiced for basic survival.
4.	Time period (for e.g., project start date, start date of crediting period and length of crediting period) covered by Project Report Adherence to the VCS requirements for start date, crediting period, and project longevity.	Medium	Project shall meet the VCS requirements for timeline such as validation is being carried within eight years of the project start date (section 3.8.3 VCS Standard v4.7). Further as per section 3.9.4 of the VCS Standard v4.7, the project shall have a credible and robust plan to ensure continuation of project implementation & management over the identified crediting period. In the opinion of the VVB this risk is considered as medium.	Based on the review of sapling purchase receipt^{t/10/} and time and date stamped photographic evidence^{/10//10/} dated 01-March-2018 provided by PP and onsite interviews and inspections^{/i-01-i-22/} VVB confirms the start date of the project is 1st March 2018. In addition to that, the review of agreements^{/05/} VVB confirms that farmers have agreed to maintain plantations for 40 years which includes the crediting period of 30 years for the project.
5.	Baseline Scenario and Additionally	High	Since this is a grouped project which intends to	Based on onsite interviews ^{/i-01-i-22/} and review of PRA reports ^{/15/} and LULC

	Accuracy of baseline scenario identification and additionality demonstration as per VCS requirements, applied methodology, and applicable tools.		include new activity instances, the baseline determination and additionality demonstration for all project activity instances under grouped project present at validation and criteria for future instances forms a high risk.	Maps ^{/03/} VVB confirms that the demonstration of baseline and additionality of the project is in line with the applied methodology and standard requirements. Therefore, the risk has been mitigated.
6.	Baseline assertion Accuracy of baseline assertion	High	Considering the project being the one of the first-of-its-kind Agroforestry Projects in the host country, applying the methodology AR-ACM0003 v2.0, the risk for the baseline assertion including the compliance with determination of baseline scenario as stated in the methodology and/or associated tool, forms High risk.	Based on onsite interviews ^{/i-01-i-22/} and review of PRA reports ^{/15/} and LULC Maps ^{/03/} VVB confirms that the demonstration of baseline and additionality of the project is in line with the applied methodology and standard requirements. Therefore, the risk has been mitigated.
7.	Correctness of source of data used for Emission removal estimation/ calculation. Accuracy of default/ex-ante fixed values, formula and equations used for the ex- ante and ex-	High	In line with the methodology applied of all sources, sinks and/or associated tool, and reservoirs ^{/02/20/} sources for the data that are included in the such as default values project report and (i.e., conversion interviews ^{/i-01-i-22/} , VVB factors, root-shoot concludes that the ratio) from secondary choice of allometric sources such as Peer-reviewed national Values opted is fine as and/or international per the applied database, published methodology. Thus,	Based on assessment of all sources, sinks and reservoirs ^{/02/20/} that are included in the project report and interviews ^{/i-01-i-22/} , VVB concludes that the choice of allometric equations and IPCC Values opted is fine as per the applied methodology. Thus,

	post carbon calculation.		data, and procedures risk has been for field measurement mitigated. forms a high risk for overall carbon removals from the project.	
8.	GHG removals estimation including future estimate / calculation. Accuracy of default/ex-ante fixed values and allometric equations used for the ex- ante carbon calculation.	High	PP has used IPCC default values for some of the tree parameters such as carbon fraction of tree biomass, Root-shoot ratio. Furthermore, accuracy in equations and formulas applied in the spreadsheet has a material impact on the carbon removals from the project. This creates a high risk for overall carbon removals from the project.	Based on the review of calculation spread sheets^{/02/} including all baseline emission, project emission, leakage emission (if applicable) and final emission reduction calculation and a through desk-review of all the data sources^{/21/}, VVB confirms that used data sources^{/21/} and calculations^{/02/} have been done in line with the applied methodology^{/B02/} and found appropriate. Thus, the risk has been mitigated.
9.	Monitoring Plan Evaluation of the project monitoring parameter as per the VCS rules and requirements. Verification of compliance against applied methodology including monitoring approach, PP sample size and	High	The project has followed monitoring plan as per the applied methodology AR-ACM0003 v2.0 and CDM Tool to determine sample size, the risk is considered as high. However, the monitoring approach for area of sample	Based on the review of VCS PDMR^{/01/}, Monitoring plans^{/06/}, SOPs^{/06/} and onsite interviews^{/i1-i22/} with the MRV personnel^{/i-1 -i-22/} VVB confirms that the monitoring approach followed for the project, data and parameters to be monitored have been clearly defined in the VCS PDMR^{/01/}. In addition to that VVB has

	area of sample plots, monitoring of project implementation		plots, data/parameters, sample size determination, sampling points, project monitoring and reporting adds further complexity to the monitoring. Thus, in opinion of VVB, this possesses high risk.	reviewed approaches followed for monitoring and sampling and found it appropriate as per the applied methodology. Therefore, VVB concludes that the risk has been mitigated.
10.	VCS project description Completeness and correctness of project description	Medium	Aligning with the requirement of VCS Standard v4.7, AR-ACM0003 v2.0, and associated tools, the appropriate interpretation of all the project particulars is pertinent. Hence, in the opinion of VVB, this risk is considered as medium.	Based on the review of VCS PDMR ^{/01/} , ER sheets ^{/02/} , monitoring plan ^{/06/} and onsite inspections ^{/i-01-i-22/} VVB confirms that the values are consistent in both the VCS PDMR ^{/01/} and ER sheets ^{/02/} . The template requirements and standard requirements has also been fulfilled. Therefore VVB confirms that risk has been mitigated.
11.	Non-Permanence Risk Accuracy of assessment of permanence of carbon stock and buffer credits in line with requirements of section 3.2.10 to 3.2.27 of the VCS Standard v4.7.	High	The grouped project is being developed by In finite Environmental Solutions Limited and its grand implementing partners Mangrove Foundation of India	Based on the review of NPRR ^{/04/} and supporting documents ^{/11/06/} and references provided ^{/04/} , VVB confirms that supporting documents have been provided in

			(MFI), Greenmile Agroforestry Private Ltd. and Outreach Projects with the involvement of farmers residing within the project boundary, the risk of permanence due to various factors such as project management, financial assistance, project land tenure (consists of community as well as individual lands) etc. is high. Furthermore, loss and reversal could also happen due to quitting of participating farmers.	line with the claimed NPRR scores the assessment of and onsite interview^{/i-01 -i-22/}VVB confirms that the risk has been mitigated.
12.	Leakage Identification of source of project emissions such as leakage due to burning of woody biomass, activity shifting leakage.	Medium	As the project includes plantation of forestry tree species on degraded and degrading agricultural land, the risk corresponds to medium category.	On the basis of on-site inspection and interviews^{/i-1-i-22/}, KML files^{/03/} assessment and ER sheets^{/02/} VVB confirm that there is displacement of pre-project activities due to project implementation and PP has provided leakage calculations. Therefore, leakage is taking place. Thus, the risk has been mitigated.
13.	Project Area and Eligibility Assessment of eligibility of land and	High	This corresponds to high risk since compliance with VCSA eligibility for	Based on the review of KML files^{/03/} and onsite inspections^{/i-01-i-22/} VVB confirms that the project

	calculation of area for each geographic area specified in the PD.		non-clearance of native ecosystems (within the 10-year period prior to the project start date), the eligibility for the project area being non-wetland area and evidence to support eligibility that soil disturbance does not exceeds >10% of area, in compliance with the methodology, are critical for the assessment. Further delineation of extent of project area for the first project instance also has material impact on overall carbon removals from the project.	is not being implemented on wetlands and the delineation of the project area is provided in accordance with the VCS Standard 4.7 requirements. Based on review of monitoring plan^{/06/} VVB confirms that the soil disturbance confirms that disturbance occurred due to project activity is 1.5% which is less than 10% and complies with applied methodology requirement. Thus, the risk has been mitigated.
14.	Participation under any other GHG Program Risk of double counting of project or carbon credits	Medium	The group project is being implemented by collaborating with the farmer community and local implementing partners on privately owned as well as government lands (community lands), checking of title of land and rights of carbon credits including project's existence in any other GHG program corresponds	On the basis of review of land ownership proof^{/17/}, proof for waiver of carbon credits^{/05/12/}, double counting letter^{/11/} and checking the project on other registries, ^{/B04/} VVB confirms that the project is not participating in any other GHG program and there is no double counting of project or carbon credits in any way. Thus, the risk has been mitigated.

			to a medium-risk category.	
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For Verification

Table: Risk Assessment during verification

S.No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the potential risk		Assessment of the records/ information/ interview with personnel to check controls/ mitigation measures
		Risk Level	Justification	
1. 1.	Raw data generation Raw data generation including sampling approach, Implementation of monitoring procedures, operation by operational personnel, change of monitoring procedures Insufficient accuracy, change of technology, Accuracy of values supplied by Third Parties.	High	Inadequate implementation of monitoring procedures including the sampling plan/equations of AR sampling standard errors in canopy/ Height data and other sampling plot data, Change of personnel, Undetected measurement errors, inappropriateness of Management system procedures w.r.t. monitoring plan requirements of offset project plan, non-application of management system procedures, insufficient accuracy of monitoring equipment, Inappropriate QA/QC measures of Third Parties etc.	Based on the review of ER sheets ^{/02/} , sampling plan and OA/QC procedures given in VCS PDMR ^{/01/} , monitoring plan ^{/06/} and raw data sheets provided to VVB during onsite inspection ^{/i-01-i-22/} for the visited plots the approach followed by PP for measurement and the default values used are in line with the applied methodology and deemed to be conservative in view of the VVB. VVB has performed own field assessments for measurement of carbon stock in the visited plots for verifying the authenticity of raw data sheets. No major differences in values were observed. Slight variation of data can be attributed to differences in PP's monitoring time and VVB's assessment

				visit. Therefore, VVB concludes that the risk has been mitigated.
2. 2.	Data collection, Transposition and aggregation/ Data and Information Flow Wrong data transfer from raw data aggregated reporting forms in both logbooks and electronic formats, lab analysis data, IT Systems, spread sheet programming, Manual data transmission, Data protection Responsibilities, Data transfer to the author of the monitoring report, Data transfer to the monitoring report, Unintended use of outdated versions of monitoring report as per the template prescribed by VCS.	High	Unintended usage of old/obsolete data, Incomplete documentation, Ex-post corrections of records, Ambiguous sources of information, non- Application of management procedures, mistakes during manual data transfer, unintended change of spread-sheet programming or database entries, Problems caused by updating/upgrading or change of applied software.	Based on the review of VCS PDMR^{/01/} and NPPR^{/03/} VVB confirms that recent versions of both the VCS documents have been provided by the PP.PP has reviewed QA/QC procedures given in the VCS PDMR^{/01/} /, monitoring plan^{/06/} , ER sheets^{/02/} and examination of raw data sheets along with interviews^{/i-01 -i-22/} with the MRV Personnels during the audit VVB confirms that the risk has been mitigated appointing trained monitoring personnels on field for data collection and efficient QA/QC procedure kept in place by PP.
3.	Calculation Methods Applied formulae Miscalculation includes AGB, BGB, CTREE etc. and errors in spread-sheet calculation	Medium	Risk due to miscalculation of formulas.	Based on review of VCS PDMR^{/01/}, ER Sheets^{/02/} and data sources and default values^{/20/} VVB confirms that tools^{/20/} and values referenced^{/20/} are in line with the applied methodology.^{/B04/} Thus the risk has been mitigated.

3.	Project Implementation & Operation Data from sample plots including canopy, height, coordinates of sample plots, marking of tree and sample plots, tree etc., cross-check of raw data, cross-check of Management system manual, cross-check of carbon calculation sheet data including area, check of trainings, check of responsibilities, check of QA/QC documentation.	High	Deviation from the project design and plan as mentioned in registered VCS PDMR.	Based on the review of VCS PDMR ^{/01/} , QA/QC procedures, Training records ^{/19/} and manual ^{/19/} , Monitoring Plan ^{/06/} , Implementation plan ^{/06/} , SOPs ^{/06/} and interviews with the farmers and MRV personnels ^{/i1-i22/} , VVB confirms that PP has employed experienced staff as monitoring personnels in the field and the QA/QC procedures are designed to minimize errors in data collection, measurements and ar. Therefore, VVB confirms that the risk has been mitigated
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During the field review of the project, the following aspects of the project were assessed:

- ✓ Project geographical boundary^{/03/}
- ✓ Planting area^{/03/} & Forest/non-forest analysis^{/03/}
- ✓ Project start date^{/10/}
- ✓ Sampling approach
- ✓ Non-Permanence Risk Report^{/04/}
- ✓ Input and Grievance Mechanism^{/08/}
- ✓ Grievances received and actions taken (if any)^{/08/}
- ✓ Applicability / land area eligibility
- ✓ Baseline determination
- ✓ Leakage assessment
- ✓ Ex-ante & Ex-post GHG removal calculation^{/02/}
- ✓ Annual report for the monitoring period^{/02/}
- ✓ Interviews with community members, representatives of local administrative municipality, and other stakeholders^{/i-01 -i-22/}

2.5 Resolution of Findings

The objective of the validation and verification is to resolve any outstanding issues (issues that require further elaboration, research, or expansion) which have to be clarified/corrected prior to final VVB's conclusions on the project's baseline, monitoring plan, project implementation, monitoring practices and achieved GHG removals from the VCSPDMR^{/01/}. Material discrepancies identified during the validation and verification are addressed either as CARs, CLs or FARs^{APPENDIX2: FINDINGS LOG}.

Corrective Action Requests (CAR) are issued, where:

- ✓ mistakes have been made with a direct influence on project results requiring adjustments of the VERs in monitoring report.
- ✓ applicable methodological specific requirements have not been met.

A Clarification Request (CL) are used where additional information is needed to fully clarify an issue or where the information is not transparent enough to establish whether a requirement is met.

A Forward Action Request (FAR) has been issued, where:

- ✓ the actual project monitoring and reporting practices require attention and /or adjustment for the consecutive verification period, or
- ✓ an adjustment of the MP is recommended.

In the context of FARs, risks have been identified, which may endanger the delivery of high-quality GHG removals in the future, i.e., by deviations from standard procedures as defined by the MP. Therefore, such aspects should receive a special focus during the consecutive verification. A FAR may originate from lack of data sustaining claimed GHG removals.

The VVB on every issue raised during the validation and verification process has used the table format given below:

CAR/CL/FAR ID		Section no.		Date: DD/MM/YYYY
Description of FAR				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				Date: DD/MM/YYYY

A total of (08) Eight CARs, (15) Fifteen CLs and 01 FAR has been raised. All the CARs and CLs have been satisfactorily closed. Please refer to APPENDIX 4 FINDINGS LOG below for the details of the CARs/CLs. One FAR have been raised.

2.5.1 Forward Action Requests

Zero FAR has been raised during this joint validation & verification

3 VALIDATION FINDINGS

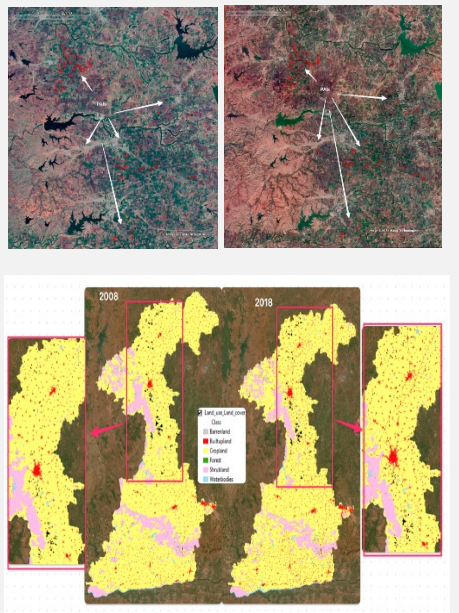
3.1 Project Details

Based on the review of the VCS PDMR^{/01/} and on-site inspection^{/i-1-i-22/}, VVB confirms that the project involves tree plantations on privately owned degraded agricultural lands, which is expected to increase the tree cover and thus leading to increase carbon sequestration within project area. VVB has reviewed PRA Report^{/15/}, KML files^{/03/} and LULC Maps^{/03/} to confirm that the project area was degraded before the project's implementation and was not drained or degraded to generate GHG credits. The VCS project falls under the category Afforestation, Reforestation and Revegetation (ARR) and is a grouped project. It has been developed under the VCS sectoral scope 14: Agriculture, Forestry and her land use (AFOLU)^{/B01/} with the use of CDM methodology AR ACM0003 v2.0^{/B02/}.

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Audit history	VVB confirms that this is the Joint Validation and 1st Periodic Verification; hence there is no previous audit history.
Sectoral scope	VCS sectoral scope 14: Agriculture, Forestry and other land use (AFOLU) ^{/B01/}
AFOLU project category, if applicable	Afforestation, Reforestation and Revegetation (ARR)
Project activity type	ARR - A1.1. - Establishing wood vegetation through planting, sowing, or other methods of woody vegetation.
General eligibility of the project to participate in the VCS Program	- VVB confirms that the table 2.1 of the VCS standard v4.7 is not applicable as the project is an ARR project. - Based on the review of the project start date document (sapling purchase receipt and date and stamped photographic evidence)^{/10/}, on-site inspections and interviews^{/i-01 to i-22/}, and the Verra

	Registry web source, VVB confirms that the project start date is 01 March 2018, and the project was listed on 20 July 2022—the date on which VERRA approved the project's listing. Accordingly, VVB confirms that the project is eligible, as it meets the pipeline listing deadline requirements outlined in Section 3.8.2 of the VCS Standard v4.7. Furthermore, VVB conducted opening meetings with the project proponent and other relevant entities on 22 October 2024, after the project was placed under validation status, in accordance with Section 4.1.5 of the VCS Standard v4.7.^{/B01/} • VVB confirms that the proposed project listed on July 20, 2022, and is required to be validated by July 19, 2030, adhering to the 8-year deadline for ARR projects of any size. Thus, the project is in line with section 3.8.3 of VCS standard 4.7. • The applied CDM small scale methodology AR-ACM0003 v2.0 is under a grace period until 30 June 2025, Updated Deadline to Transition from CDM ARR Methodologies Verra. VVB confirms that the proposed project has met the methodology deadline in compliance section 3.22 of the VCS Standard v4.7^{/B01/} and this project is not a fragmented part of a larger project. • In line with VCS PDMR, PP has successfully demonstrated the grouped project and new activity inclusion criteria in compliance with the section 3.6.16 of the VCS standard v4.7^{/B01/}. • VVB based on the host country expertise and review of relevant laws and regulations^{/24/}, National REDD+ Strategy confirms that there are no jurisdictional REDD+ programs developed in the project region.
AFOLU project eligibility, if applicable	The project activity is eligible under the scope of the VCS Program, according to section 3.2 of the VCS Standard version 4.7^{/B01/}: ✓ There are currently six AFOLU project categories eligible under the VCS Program, as defined in Appendix 1 Eligible AFOLU Project Categories. The project being a forest conservation/protection, falls

into the eligible AFOLU project category “Afforestation, Reforestation and Revegetation (ARR) in line with section A1.1 of VCS standard requirements.		
S. No.	VCS Eligibility Criteria ^{/B02/}	VVB Assessment
1.	Project Activity DO NOT convert native ecosystems or degrade hydrological functions to generate GHG credits	VVB conducted a Land Use and Land Cover (LULC)^{/03/} analysis by reviewing KML files^{/03/}, forest and non-forest analysis report^{/03/}, satellite imagery from the past 10 years, and through on-site inspections and stakeholder interviews^{/i-1-i-22/}. The assessment confirms that all project area plots were located outside designated forest areas prior to the initiation of project activities. The satellite imagery indicates that these areas were primarily under agricultural land. <i>For reference, please see the figure below illustrating the LULC status of project farms from 2008 to 2018.</i> Based on this assessment, VVB confirms that there has been no conversion of native ecosystems for the purpose of generating GHG credits.

			
	2.	If clearing or conversion of land by the project activity was done, it took place at least 10 years prior to the proposed project start date.	As assessed in the above section, and based on the review of the Forest/Non-Forest Analysis Report^{/03/} and on-site interviews^{/101-124/}, the VVB confirms that no land clearing or conversion has occurred under the first Project Activity Instance (PAI). The project area comprises previously degraded agricultural lands, where forestry tree species have been planted following an agroforestry design.
	3.	If the AFOLU project area was drained or converted, such draining, or conversion took place prior to 1 January 2008	Based on the on-site inspection/interviews^{/i-01-i-22/}, PRA Report^{/15/}, KML Files^{/03/} submitted by the PP, VVB has ascertained that the project area has not been drained or converted due to implementation of the project as the project includes agroforestry species plantation on lands that were previously used for degraded agricultural lands. (Refer to the attached images and assessment below)

The map displays the land use and land cover of the Tana Delta in Kenya. The legend identifies the following categories:

- Water (Blue)
- Shrubland (Light Green)
- Open Field (Yellow)
- High Forest (Dark Green)
- Open Forest (Light Green)
- Urban Area (Red)
- Barren Land (Brown)

The map includes a scale bar (0 to 10 km) and a north arrow. The title is "Land use Land cover Map 2018".

1. Plot	1st
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[illegible][illegible]

Fig 2: Year 2018

		Fig 3: 2024 2. Other plots Fig 1: 2010 Fig 2: 2018 Fig 3: 2024 Project Activity is requesting Based on the review of the VCS PDMR^{/01/}, the project activity start date is 1 March 2018 ^{/10/08/}. Therefore, VVB confirms that the
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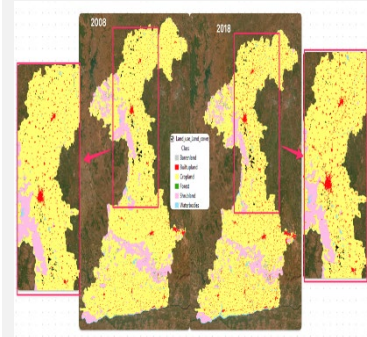
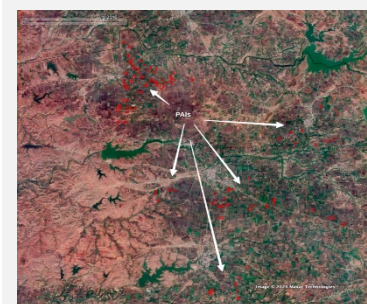
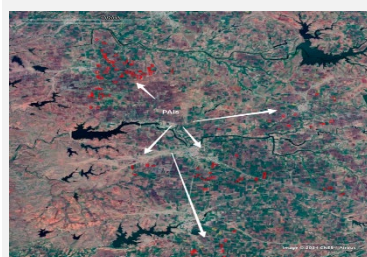
	4.	registration within eight years of the project start date	project complies with VCS requirements, remaining eligible for validation until 19 July 2030, within the 8-year timeframe. As such, the VVB affirms that the project meets the criteria outlined in Section 3.8.3 of the VCS Standard v4.7 ^{/B01/}
	ARR Category requirements as per VCS Standard 4.7:		
	ARR Category requirements as per VCS Standard 4.7		VVB assessment
	1. Eligible ARR activities are those that increase carbon sequestration and/or reduce GHG emissions by establishing, increasing, or restoring vegetative cover (forest or non-forest) through the planting, sowing, or human-assisted natural regeneration of woody vegetation.1		Based on on-site inspection/interviews ^{/I-01 to I-22/} , review of KML files ^{/03/} , nursery bills ^{/10/} , and signed agreements, the VVB confirms that, as part of the first Project Activity Instance (PAI), the project is being implemented as an ARR (Afforestation, Reforestation, and Revegetation) initiative across three Indian states Andhra Pradesh, Madhya Pradesh, and Tamil Nadu. The first PAI includes the plantation of various fruit-bearing, medicinal, and commercially valuable tree species, which is expected to enhance tree cover outside forest areas and contribute to carbon sequestration. Hence, VVB confirms that the project activity meets the VCS Program Rules ^{/B01/}

	2. Eligible ARR projects may include timber harvesting in their management plan.	In line with VCS Joint PD & MR^{/01/}, project management plan, SOPs and on-site inspection/interviews^{/01-122/}, VVB confirms that the project activity includes harvesting as part of the management plan and the length of the crediting period encompasses harvesting with varying rotation periods and includes at least one complete harvest/cutting cycle. VVB has reviewed the VCS PDMR^{/01/} and the carbon calculation sheets^{/02/} and confirms that the project involves two different tree species (Guava & Red sanders) planted between 2018 and 2022. In accordance with Section 3.2.30(1)(a) of VCS Standard v4.7^{/B01/}, PP has included one full harvest cycle, including the final cut, for both species, even though their planting years differ. As a result, LTA benefit has been estimated for a 35-year period, exceeding the 30-year crediting period, to ensure compliance with the standard.
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		Furthermore, PP has appropriately estimated the LTA calculations^{/02/} and claimed GHG benefits based on the long-term average GHG benefit maintained by the project^{/02/}. The estimated number of credits issued does not exceed the LTA cap. Specifically, the proposed activity reaches the LTA cap in the year 2026 (i.e., nine years from the project start date), demonstrating compliance with Sections 3.2.29 and 3.2.30 of the VCS Standard v4.7^{/B01/}.
	3. The project area shall not be cleared of native ecosystems within the 10-year period prior to the project start date.	VVB conducted a Land Use and Land Cover (LULC) analysis by reviewing KML files, forest and non-forest analysis report, satellite imagery from the past 10 years (2008 -2018), and through on-site inspections and stakeholder interviews. The assessment confirms that all project area plots were located outside designated forest areas prior to the initiation of project activities. The satellite imagery indicates that these areas were primarily under agricultural land.

For reference, please see the figure below illustrating the LULC status of project farms from 2008 to 2018.

Based on this assessment, VVB confirms that there has been no conversion of native ecosystems for the purpose of generating GHG credits.



Furthermore, since the proposed project is not a WRC project, sections 3.2.8 and 3.2.9 of the VCS standards are not applicable.

Transfer project eligibility, if applicable	Based on the review of the double counting letter^{/11/}, VVB confirms that the project has not been registered under any other GHG programs and is not seeking registration under any other GHG programs. VVB has also reviewed public websites of other emission trading program^{/B04/}. (VCS/GS /Plan Vivo) to confirm it. As the proposed first Project Activity Instance (PAI) is seeking certification under the VCS program, VVB confirms that Appendix 2 of the VCS Standard v4.7 is not applicable.									
Project design	According to VCS Program Definitions v4.4^{/B01/}, <i>“A project to which additional instances of the project activity, which meet pre-established eligibility criteria, may be added subsequent to project validation”</i> Based on the review of VCS PDMR^{/01/}, KML files^{/03/}, farmer agreements^{/05/} and on-site inspection/interviews^{/11-i22/} The VVB confirms that the project is designed as a grouped project, including multiple instances, with the geographical boundary covering these three states of India - namely Andhra Pradesh, Tamil Nadu and Madhya Pradesh of India, and with a planned scaling up to 4,000 hectares. Additionally, VVB confirms that the proposed first Project Activity Instance (PAI) is being implemented in the states of Andhra Pradesh (districts: Chittoor and Prakasam), Madhya Pradesh (districts: Ratlam and Dhar), and Tamil Nadu (district: Tiruvallur) with area of 894.06ha. The VVB further confirms that the PP has appropriately demonstrated the grouped project design and the eligibility criteria and established valid SOPs^{/06/} to ensure that that all future PAI inclusions implement technologies and measures consistent with those applied in the initial PAI and in Section 1.5 of the VCS PDMR. The VVB has also assessed the grouped project criteria in accordance with the VCS Standard v4.7^{/B01/} as follows: <table><tr><th colspan="3">Project Description for Grouped Projects (Section 3.6.22 of VCS Standrad v4.7)</th></tr><tr><th>SI no</th><th>Eligibility criteria</th><th>VVB Assessment</th></tr><tr><td></td><td></td><td></td></tr></table>	Project Description for Grouped Projects (Section 3.6.22 of VCS Standrad v4.7)			SI no	Eligibility criteria	VVB Assessment			
Project Description for Grouped Projects (Section 3.6.22 of VCS Standrad v4.7)										
SI no	Eligibility criteria	VVB Assessment								

	1.	A delineation of the geographic area(s) within which all project activity instances shall occur.	VVB based on the review of VCS PDMR ^{/01/} and KML files ^{/03/} confirms that the geographical area has been delineated at the state level (namely Andhra Pradesh, Tamil Nadu and Madhya Pradesh) within India. The geographical boundary for the project will be these three states of India - namely Andhra Pradesh, Tamil Nadu and Madhya Pradesh. This delineation establishes the eligibility criteria for inclusion of future instances under the grouped project activity. For future instances, the baseline scenario and rationale for additionality will be same as, or more conservative than those established for the initial PAIs.
	2.	One or more determinations of the baseline for the project activity in accordance with the requirements of the methodology applied to the project.	Based on the review of VCS PDMR ^{/01/} , SOPs ^{/06/} and onsite inspection/ interviews ^{/11-i22/} , VVB confirms that the baseline determination for the project activity is conducted in accordance with the requirements of the applied ARR methodology (AR-

			ACM0003 v02.0). For the first Project Activity Instance (PAI-1), implemented across Andhra Pradesh, Tamil Nadu, and Madhya Pradesh, the baseline scenario represents the continuation of degrading agricultural land with low productivity use and limited vegetation cover. In the absence of the project, these lands would have remained in a degraded condition with minimal natural regeneration and no planned afforestation or tree-based interventions. This baseline determination is demonstrated in Section 3.2 of the PDMR and is consistent with the eligibility criteria and applicability conditions of AR-ACM0003 v02.0. VVB notes that, for future PAIs, the Project Proponent has committed to applying the same baseline scenario and underlying rationale as established for PAI-1, or at a minimum, an equally conservative baseline. Land parcels proposed for inclusion in future
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			PAIs must meet the same baseline conditions of degrading agricultural land with low productivity use prior to project intervention. The VVB confirms that land parcels not meeting these baseline conditions will be excluded from the project, as stated by the PP. With respect to baseline carbon stocks, the VVB has reviewed the application of AR-TOOL14 for future PAIs. The PP has demonstrated that baseline carbon stocks may be conservatively considered zero, based on: (i) the absence of baseline trees as evidenced through PRA and satellite imagery; (ii) the exclusion of any baseline trees, if present in future PAIs, from project emission reduction calculations; (iii) separate monitoring of baseline trees, where applicable; (iv) the degraded cropland status with seasonal clearing cycles, resulting in zero shrub carbon stock in accordance with Clause 5.12(f); and (v)
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			the absence of deadwood and litter pools due to lack of woody vegetation. Based on the review of documentation and onsite verification, the VVB concludes that the baseline scenario and baseline carbon stock determination for the project are appropriately defined, conservatively applied, and consistent with the requirements of the applied methodology for both the initial and future PAIs. 1
	3.	One or more demonstrations of additionality for the project activity in accordance with the requirements of the methodology applied to the project.	Based on the review of the section 1.5 of the VCS PDMR^{/01/}, the VVB confirms that the demonstration of additionality complies with the VCS Standard v4.7. The additionality of the initial instance has been demonstrated using the “CDM AR-Tool02.” Furthermore, the PP has ensured that the additionality of future instances will be demonstrated by applying the same CDM tool.
	4.	One or more sets of eligibility criteria for the	Based on the review of VCS PDMR^{/01/}, ^{/i1-i22/}VVB

		inclusion of new project activity instances at subsequent verification events.	confirms that the project fulfils at least one set of eligibility requirement for the inclusion of new project activity instances at subsequent verification events. as required by the standard. PP has ensured that the following parameters will be considered for the inclusion of new project instances under the grouped project: ✓ The land parcels must be degrading agriculture land with low productivity. ✓ Within geographical boundaries of three state i.e. Andhra Pradesh, Tamil Nadu and Madhya Pradesh, where PAI-1 is implemented . ✓ Shall not be cleared of native ecosystems within the 10 years period form activity start date ✓ Privately owned lands must have clear land title with accessible boundaries, distinct from
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			government-protected areas
	5.	A description of the central GHG information system and controls associated with the project and its monitoring.	Based on the review of VCS PDMR ^{/01/} and Management Manual ^{/06/} , SOPs, VVB confirms that the project operations are supervised by the PP including governance, controls, and monitoring of the GHG information system. The project director, MRV Team, AFOLU expert are responsible for the tasks required for the implementation of the project.
	New Project Activity Instance Eligibility Criteria (Section 3.6.16 of the VCS Standard v4.7)		
	SI no	Eligibility Criteria	VVB Assessment
	1.	Meet the applicability conditions set out in the methodology applied to the project.	The Project Proponent (PP) has appropriately demonstrated compliance with the eligibility criteria outlined in Section 3.6.17(1) and has ensured in the PDMR that all new project activity instances will meet the applicability conditions of the applied methodology, AR-ACM0003. Furthermore, the VVB has assessed the first Project Activity Instance (PAI) for

		compliance with the methodology's applicability criteria, as detailed in Section 3.4.2 of this report, and confirms that the same criteria will be applied for the inclusion of future instances./i1-i22/ VVB notes that the PP has clearly defined applicability criteria that must be met by each land parcel included in any future Project Activity Instance (PAI). Specifically, for each new PAI, the PP has committed to ensuring that: (i) the land is not classified as wetland in accordance with host country and relevant international definitions; (ii) soil disturbance directly attributable to project activities does not exceed 10 percent of the project area, consistent with methodology requirements related to soil carbon impacts; and (iii) all applicability conditions of the tools contained within the applied methodology are met, including AR-TOOL02, AR-TOOL03, AR-TOOL08, AR-TOOL12, AR-TOOL14,
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			AR-TOOL15, AR-TOOL16, AR-TOOL19, and the VCS Non-Permanence Risk Tool.
		Use the technologies or measures specified in the project description	Based on the review of the PDMR ⁰¹ , VVB confirms that all PAIs implement agroforestry activities under the ARR category in accordance with the VCS AFOLU requirements, as described in Section 1.12 of the Project Description and deemed eligible under Program Standard v4.7, Appendix 1A.1. The project activities involve the establishment and management of agroforestry tree species on degraded or low-productivity agricultural land located within the predefined grouped-project geographic boundary. VVB notes that, while the overall project approach remains consistent across PAIs, the selection of tree species and specific agroforestry models may vary among PAIs based on farmer preferences, local ecological conditions, and site-specific soil characteristics.

		Apply the technologies or measures in the same manner as specified in the project description.	VVB based on the review of VCS PDMR^{/01/}, VVB confirms that the new PAIs will be implemented in the same manner as defined for the initial PAI in the validated PDMR^{/01/}, including the overall project design, management systems, and monitoring approach. All PAIs follow the same fundamental agroforestry intervention logic, namely the conversion of degrading agricultural land with low productivity into tree-based systems. VVB notes that differences among PAIs are and will be limited to location within the predefined geographic boundary and permissible variations in species mix or planting density. VVB further confirms that species selection for future PAIs is restricted to native or naturalized species, planting density is determined based on species-specific requirements, and species selection remains consistent with the silvi-horticultural
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			model applied in the initial PAIs. Species or models that are already widely practiced, independently profitable, subsidized to the extent that they are financially viable without carbon revenue or represent common practice within the region are explicitly excluded. VVB confirms that these variations do not affect the applicability of the methodology, the baseline scenario—which remains non-tree-based degrading agricultural land—or the additionality assessment. Based on the assessment, VVB concludes that the technologies and measures are applied consistently across all PAIs in accordance with the PDMR.
		Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	Based on the review of the revised PDMR^{/01/}, VVB confirms that all PAIs are subject to the baseline scenario defined in the PDMR, i.e. degrading agricultural land with low productivity under private ownership and no evidence of recent conversion from natural forest. The

			baseline determination for the initial PAI, assessed in Section 3.4.4 of this report, is consistent with the requirements of the applied methodology and relevant tools. For future PAIs, the same baseline conditions and rationale will be applied or, at a minimum, in a manner that is equally conservative. Where baseline trees are present in future PAIs, they will be identified, excluded from project emission reduction calculations, and monitored separately, in accordance with AR-TOOL14. Accordingly, VVB concludes that all PAIs remain within the validated baseline scenario and eligibility envelope of the grouped ARR project.
		Have characteristics with respect to additionality that are consistent with the initial phases for the specified project activity and geographic area.	Based on the review of the PDMR, VVB confirms that all future PAIs are required to satisfy the same or a more conservative additionality demonstration as established for the initial PAI, in accordance with

			the grouped-project requirements of VCS Standard v4.7. VVB notes that, for each new PAI, the project activity is not mandated by national, regional, or local regulations; the anticipated revenues from the sale of carbon credits were a decisive factor in the decision to implement the activity; the PAIs face similar types of barriers as documented for the initial PAI; and the activity does not constitute common practice within the applicable geographic area. The analysis of regulatory conditions, common practice, and historical land-use trends applies consistently across the entire project area and is therefore valid for both the initial and future PAIs. Based on this assessment, the VVB concludes that future PAIs have additionality characteristics consistent with those of the initial project phase and remain eligible for
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			inclusion under the grouped ARR project.
		The PAI will utilize the same baseline scenario as described in Section 3.4 or a baseline scenario appropriate to the specified methodology for the geographic area defined in Section 1.13.	Based on the review of the VCS PDMR^{/01/}, project management plan^{/06/}, and supporting SOPs^{/06/}, VVB confirms that the PP has appropriately demonstrated the baseline determination and additionality for the grouped project in line with the requirements of VCS Standard v4.7^{/B01/}, Sections 3.6.10 and 3.6.16 (2) and (3). PP has defined the baseline scenario as the continuation of degrading agricultural lands with low productivity use and limited vegetation growth, consistent with the applied ARR methodology. The same baseline conditions and additionality rationale will apply to all future Project Activity Instances (PAIs) included within the broader geographic boundary of Andhra Pradesh, Tamil Nadu and Madhya Pradesh , ensuring methodological consistency and

			conservativeness.
			Furthermore, VVB confirms that the approach to baseline determination and additionality demonstration for future PAIs is consistent with that established for the first PAI, as detailed in Section 3.4 of the PDMR ^{/01/} . The PP has also outlined procedures for defining geographic boundaries of each instance through geodetic polygons, in accordance with VCS Standard v4.7 ^{/B01/} , Section 3.6.10.
			The analysis of common practices, prevailing regulations, and historical land-use trends has been carried out at the national level, ensuring that the baseline scenario and additionality assessment remain applicable and credible for both the initial and subsequent instances.
Inclusion of New Project Activity Instances (Section 3.6.17 VCS standard 4.7).			
SI no	Eligibility Criteria	VVB Assessment	

	1.	Occur within one of the designated geographic areas specified in the project description.	Based on the review of VCS PDMR ^{/01/} and onsite interviews ^{/i1-i22/} VVB confirms that the confirms that the new project activity instances will be in designated geographical areas Andra Pradesh, Tamil Nadu and Madhya Pradesh states of India, as specified in the project description
		Conform with at least one complete set of eligibility criteria for the inclusion of new project activity instances. Partial conformance with multiple sets of eligibility criteria is insufficient.	Based on the review of VCS PDMR^{/01/} and onsite interviews with PP^{/i1-i22/}, VVB confirms that land parcels in order to be included under the Project will follow the following requirements: • The land must be crop land or degrading land • Will be in the geographical boundary of Andhra Pradesh, Tamil Nadu and Madhya Pradesh states in India. • The land must not have been cleared of native ecosystems within 10 years prior to each project activity instance start date. In case of Privately owned land, PP will make sure to have clear

		possession and accessible boundaries, distinct from government-declared protected areas. VVB further notes that compliance with the applicable eligibility criteria is demonstrated in Sections 1.1, 1.12, and 1.13 of the Joint PD-MR and Section 1.2 of the Non-Permanence Risk Report. In addition, all new PAIs are required to comply with the applicability conditions of the tools contained within the applied methodology, including AR-TOOLS 02, 03, 08, 12, 14, 15, 16, 19, and the VCS Non-Permanence Risk Tool. Based on this assessment, the VVB concludes that new PAIs conform with a complete set of eligibility criteria and that partial conformance with multiple eligibility sets is avoided, in accordance with VCS Standard v4.7 requirements.
	Be included in the monitoring report with sufficient technical, financial, geographic,	Based on the review of the PDMR ^{01/} and supporting documentation, VVB

		and other relevant information to demonstrate conformance with the applicable set of eligibility criteria and enable evidence gathering by the validation/verification body.	confirms that sufficient technical, financial, geographic, and other relevant information to demonstrate conformance with the applicable eligibility criteria is provided in Sections 1.1, 1.12, and 1.13 of the PDMR and Section 1.2 of the Non-Permanence Risk Report. These sections collectively provide the information required to enable effective evidence gathering and assessment by the validation and verification body.
		Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of	Accordingly, the VVB concludes that the project activity is appropriately documented for inclusion in the monitoring report and meets the requirements for demonstrating conformance with the applicable set of eligibility criteria. Based on the review of VCS PDMR ^{/01/} and onsite interviews ^{/i1-i22/} , VVB confirms that each new project activity instance will have evidence of project ownership held

		each project activity instance.	by the PP from the project start date of each project activity instance.
		Have a start date that is the same as or later than the grouped project start date.	Based on the review of VCS PDMR ^{/01/} and onsite interviews ^{/i1-i22/} with PP, VVB confirms that phases that will be included in the project will have the start date on or after the project start date which is 01-March-2018.
		Only be eligible for crediting from the start date of the project activity instance or the start of the verification period in which they were added to the grouped project, through to the end of the total project crediting period.	Based on the review of the PDMR, the VVB confirms that new PAIs added to the grouped project are eligible for crediting from the later of (i) the start date of the respective project activity instance or (ii) the start date of the verification period in which they are added to the grouped project, through to the end of the total project crediting period. crediting period.
		Not be or have been enrolled in another VCS project.	Based on the review of VCS PDMR ^{/01/} , Double counting letter ^{/11/} and checking though other registries ^{/B04/} , VVB confirms that each land parcel eligible for inclusion in the new Project Activity instance wise enrolled in another VCS project.

			VVB notes that this requirement is ensured through contractual agreements^{/06/} and specific legal declarations provided by the land parcel owners/farmers, confirming that the land parcels are not registered under any other VCS project and that no double counting of emission reductions occurs. PP has further committed to ensuring that credits generated from both current and future PAIs are not claimed under any other compliance or voluntary mechanism. Based on the assessment of the available documentation and declarations^{/06/}, the VVB concludes that the project adequately ensures avoidance of double counting and complies with the requirement that land parcels included in new PAIs are not, and have not been, enrolled in another VCS project.
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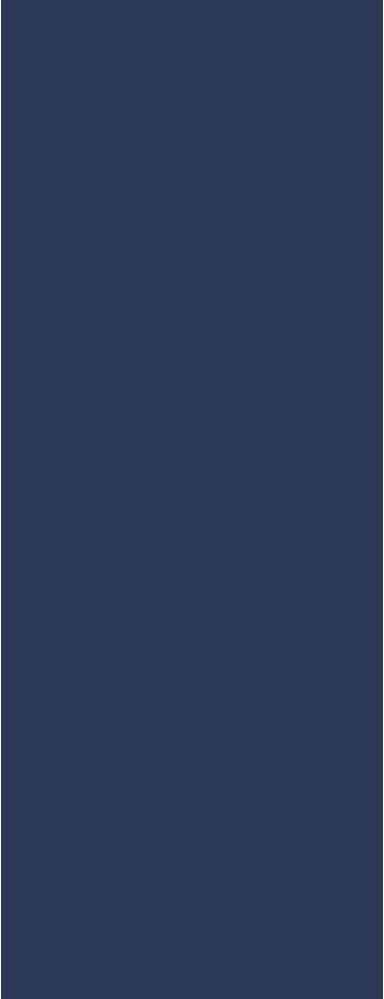
		Adhere to the clustering and capacity limit requirements for multiple project activity instances set out in 3.6.8 – 3.6.9.	Based on the review of VCS PDMR ^{/01/} and onsite interviews ^{/i1-i22/} VVB confirms that PAIs located within a 10-kilometer radius of another instance of the same project activity and managed by the same PP will be considered part of a single project and will not be distributed across multiple projects.
		Additon of a new project proponent to the project	Based on the review of the PDMR ^{/01/} , VVB confirms that, where the inclusion of a new PAI requires the addition of a new PP, such instances will be included in the grouped project description within the timelines specified under the VCS Standard, i.e. within five years of the PAI start date for AFOLU project activities. VVB further confirms that the procedure for adding new project proponents will be implemented in accordance with the VCS Registration and Issuance Process.

Accordingly, VVB concludes that provisions for the addition of new project proponents are defined and comply with the applicable VCS requirement.

Furthermore, based on the review of the revised PDMR^{01/} and the additional clarifications provided in response to the PRR, VVB confirms that the grouped project eligibility criteria are now clearly defined in accordance with VCS Standard v4.7 Sections 3.6.16–3.6.17. Section 1.5 of the revised Project Description explicitly defines the technologies and measures applied under the project, as well as their manner of implementation, and confirms that these are consistently applied across the initial and all PAIs.

VVB confirms that the characteristics related to the baseline scenario and additionality for future PAIs are clearly specified and remain fully consistent with those of the initial PAIs. The baseline scenario is uniformly defined as non-tree-based, degrading agricultural land with low productivity, and the same additionality rationale and barriers apply across all PAIs within the grouped project.

VVB has further assessed the revised justification regarding the use of different plant species and plantation models in future PAIs and confirms that, while flexibility is permitted to reflect beneficiary needs and site-specific ecological conditions, such variations are strictly constrained within predefined eligibility criteria. These permissible variations do not alter the fundamental project intervention, do not affect baseline determination or methodological applicability, and do not compromise the additionality demonstration. Species and plantation models that are common practice or financially viable without carbon finance are explicitly excluded.

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VVB confirms that all future PAIs will occur within the defined geographic boundary (states of Andhra Pradesh, Tamil Nadu and Madhya Pradesh), comply with a complete and consistent set of eligibility criteria, and be included in the monitoring report with sufficient technical, financial, and geographic information, in line with VCS Standard requirements. Based on the review of the revised documentation and assessments conducted, VVB concludes that the grouped project eligibility criteria are adequate, clearly defined, and in accordance with applicable VCS Program Rules, and that the previously raised Verra issues have been satisfactorily addressed.

Project ownership	Based on the review of VCS PDMR^{/01/} and contractual agreements^{/05/} VVB confirms that the lands involved in the 1st PAI are owned by farmers and landowners and project activity management rights are owned by PP. Furthermore, VVB during onsite inspection/ interviews^{/i1-i22/} have reviewed and cross verified all the agreements^{/05/12/} against the respective state government website^{/B05/}. Furthermore, VVB affirms that the agreements^{/05/} are structured to clearly delineate land rights, project activity rights and carbon rights. ✓ Clauses 1,5&6 of the agreement stipulate the obligation to maintain trees throughout the project lifetime (i.e., 40 years) and to manage project-related activities in accordance with the advice provided by PP. ✓ Clause 2 confirms that farmers have complete ownership of the land and PP has no right to claim title, ownership or possession of land property where project activities are implemented. ✓ Clause 4 of the agreement addresses the allocation of carbon rights with on-ground implementation partners. Furthermore, the VVB has reviewed and confirms that the Project Proponent (PP) and the on-ground implementation partners have entered into service agreements. Through these agreements, the implementation partners MFI, Green Mile, and Outreach have assigned the carbon rights and project implementation rights to the PP, Infinite Solutions. On the basis of review of the agreements and respective state government websites^{/25/}, VVB confirms that the farmers have farmers hold land rights and carbon rights held by PP. This was further checked and confirmed by VVB. Based on the above assessment, VVB confirms that PP has appropriately demonstrated the ownership of the proposed 1st PAI in accordance with section 3.7(6) of the VCS Standard v4.7.
Project start date	As per Section 3.8 of the VCS Standard (v4.7) ^{B01/} .

	“The project start date of an AFOLU project is the date on which activities that lead to the generation of GHG removals are implemented (e.g., preparing land for seeding, planting, changing agricultural or forestry practices, rewetting, restoring hydrological functions, or implementing management or protection plans).” Based on the review of the VCS PDMR^{/01/}, VVB confirms that the project start date is 01st March 2018^{/10/} and VVB verified this date through the review of sapling purchase receipts^{/10/}, and time and date stamped photographic evidence^{/10/} and on-site inspection/interviews^{/i-01-i-22/} with project participants, which confirmed that planting activities were initiated immediately following the sapling purchase. Furthermore, VVB has reviewed these photographs^{/10/} and confirms that the visible timestamp and coordinates indicate that planting activities were undertaken on 01 March 2018. The coordinates displayed on the images^{/10/} were cross-checked using the verified project KML file^{/03/}, and the locations were confirmed to fall within the project boundary (within states of Andhra Pradesh, Tamil Nadu and Madhya Pradesh) and correspond to participating farmers’ lands in Chittoor District of Andhra Pradesh State^{/03/}. Based on the review of the photographic evidence^{/10/}, along with seedling purchase receipts^{/10/} and consistency of the date, location, and documented plantation activities, VVB concludes that the evidence is credible and adequately substantiates that planting began on 01 March 2018^{/10/}. Therefore, the justification for the claimed project start date is considered appropriate and compliance with the 3.8 of VCS Standard v4.7^{/B01/}. (The trees were first planted in the project areas.) Taken together, this combination of documentary evidence^{/10/}, field verification, and geospatial assessment provided a consistent and credible basis for establishing the date on which the first GHG-removal-generating activities were implemented. Based on the above assessment, VVB confirms that the established project start date is fully compliant with Section 3.8 of the VCS Standard v4.7^{/B01/}.
Project crediting period	According to the section 3.9.3 of VCS Standard v 4.7 ^{/B02/} :

	<i>“For all AFOLU projects other than such ALM projects described in 3.9.2, the initial project crediting period shall be a minimum of 20 years up to a maximum of 100 years, which may be renewed at most four times, with a total project crediting period not to exceed 100 years.”</i> VVB confirms that the crediting period for the project is 30 years from 01-March-2018 to 29-February-2048 which is appropriate and valid in compliance with section 3.9.3 of the VCS Standard v4.7.
Project scale	According to the section 3.10.1 of VCS Standard v4.7/^{B01/}, <i>“Project size categorizations are as follows:</i> <i>1) Projects: Less than or equal to 300,000 tonnes of CO₂e per year.</i> <i>2) Large projects: Greater than 300,000 tonnes of CO₂e per year.”</i> Based on the review of the VCS PDMR/^{01/} and the ex-ante carbon calculation sheet/^{02/}, the estimated average annual GHG emission removals from the first Project Activity Instance (PAI) are 5,990 tCO₂e. Accordingly, VVB confirms that the proposed activity qualifies as a project-scale activity, in line with the requirements outlined in Section 3.10.1 of the VCS Standard v4.7.
Likelihood of achieving estimated GHG emission reduction or removals	VVB confirms that the likelihood of the estimated GHG emission reduction or removals will be achieved based on project management manual/^{06/}, monitoring SOPs/^{06/} but the actual GHG reduction or removals will slightly deviate from the estimated due to various edaphic factors based on the futuristic environmental conditions. Upon reviewing the Joint PDMR/^{01/} and GHG calculation sheets/^{02/}, VVB confirms that the 1st PAI is estimated to achieve an annual average GHG emission removals equivalent to 5,990 tCO₂e per year with total of 179,711tCO₂e for the entire crediting period. Furthermore, PAI achieved GHG removals during the current monitoring period amounted to 65,813 tCO₂eq.
Technologies and measures implemented by the project activity	VVB has employed following methods to verify technologies and measures being implemented by the project:

	1. Review of VCS PDMR^{/01/}, KML Files^{/03/}, contractual agreements^{/05/12/}, land titles^{/05/}, nursery bills^{/10/}, sapling distribution records^{/13/} and training records^{/19/}. 2. On-site inspection and interviews with the stakeholders^{/i1-i22//}. VVB confirms that the 1st PAI is being developed as an ARR project in which three tree species Guava, Mango and Red Sander has been planted on farmer owned lands which has previously held as degraded agricultural lands with low productivity in three states Andhra Pradesh, Tamil Nadu and Madhya Pradesh which has also been confirmed by VVB's own independent GIS assessment also. For the first PAI 2052 farmers with area of 894.06 ha participated in the project by planting trees on their lands or plots for which VVB has cross checked state's websites^{/B05/} for confirmation of land details. Along with that the project involves harvesting of only two species Red Sander and Guava in 15years. The management plan^{/06/} and agreements^{/05/} ensures replantation of harvested species and maintenance of carbon stock for the project's longevity. Training related to maintenance of the plantations has also been imparted to the farmers which was also confirmed by VVB during the onsite inspection/interviews^{/i1-i22//}.
Implementation schedule of the project activity or activities	The start date of project activity is 01st March 2018, as this is the date of start of planting in first project activity instance so is mentioned in the sapling receipt^{/10/} and also verified by the VVB during on-site inspection/interviews. Based on the review of VCS PDMR^{/01/}, KML Files^{/03/}, contractual agreements^{/05/12/}, land titles^{/05/}, nursery bills^{/09/}, sapling distribution records^{/13/} and training records^{/19/} and onsite inspection/interviews^{/i1-i22//}, VVB confirms that the grouped project has started the implementation of the 1st PAI of 894.06 ha within districts of Chittoor & Prakasam of Andhra Pradesh, Tiruvallur of Tamil Nadu and Ratlam & Dhar of Madhya Pradesh of India during the period of 2018 to 2023 and as a grouped project aims to scale up to 4000 ha of area within the India.

Project location

Based on the review of the VCS PDMR^{/01/} and KML files^{/03/}, VVB confirms that the 1st PAI project boundary covers farmer owned degraded agricultural lands with low productivity across districts of Chittor & Prakasam of Andhra Pradesh, Tiruvallur of Tamil Nadu and Ratlam & Dhar of Madhya Pradesh.

VVB during the on-site inspection/interviews, confirms that the total area under the first project instance is 894.06 hectares, distributed as follows:

- ✓ Andhra Pradesh state [757.75 ha]:
 - Chittor District – Mango Plantations – 676.79 ha.
 - Prakasam District – Red Sanders Plantation – 80.96 ha
- ✓ Madhya Pradesh State [125.83ha]:
 - Dhar District – Guava Plantations – 68.39 ha
 - Ratlam District – Guava Plantations – 57.44ha
- ✓ Tamil Nadu State [10.48ha]:
 - Tiruvallur – Mango Plantations – 10.48 ha.

VVB confirms that PP has submitted the KML files for the 1st PAI which demonstrates the geodetic polygons for all the land parcels. This includes all the permanent sample plots incorporating the Name of the Farmers, state, District, Tehsil, Village, Plantation in ha, Plantation date and Latitude and Longitude under the 1st PAI. Therefore, VVB affirms that the KML files are in compliance with the section 3.11.2 of the VCS Standard v4.7.

Furthermore, The locations of the first project activity instances were physically verified during the VVB's onsite inspection/interviews ^{/i1-i22//}. Based on this assessment, it is confirmed that PP has accurately identified and reported the project locations. These are compliant with the requirements outlined in Sections 3.11 and 3.6.22 of the VCS Standard.

Conditions prior to project initiation	VVB has adopted the following measures to understand conditions prior to the project initiation. 1. Review of Forest/Non-Forest shapefiles^{/03/}, LULC shapefiles^{/03/}, project boundary shapefiles^{/03/} and PRA Report^{/15/} 2. Interviews with the stakeholders^{/i1-i22/} Based on the above assessments, VVB confirms that before the implementation of project activity the farmers used to do conventional farming on their plots. The plots have been degraded^{/15/} due to overuse of synthetic fertilizers^{/15/}. The plot consisted of baseline trees which will not be harvested but will be monitored during project longevity as mentioned in the VCS PDMR^{/01/} and Management plan^{/06/}.
Project compliance with applicable laws, statutes and other regulatory frameworks	Based on the review of the VCS PDMR, and review of the laws and regulations host country knowledge and through own research, VVB confirms that the project complies with following national, and state laws and acts. Furthermore, VVB confirms that the proposed VCS project shall not lead to violation of any applicable law even if the laws is not enforced.

Law & Act	VVB assessment
Indian Forest Act, 1927	Based on the review of project documentation, including VCS PDMR^{/01/}, Monitoring and Implementation Plans^{/06/}, as well as findings from onsite interviews^{/i1-i22//} with participating farmers,VVB confirms the following: 1. The project involves the plantation of three tree species—Mango, Red Sander, and Guava—on private farmlands^{/01/05/06/02/}. 2. Land records^{/05/} and signed agreements^{/05/} provided by PP were verified during onsite inspections^{/i1-i22//}, confirming that the plantations are situated on privately owned lands and not on forested areas governed by the Indian Forest Act, 1927. 3. The project implementation and management activities adhere to the provisions of the Indian Forest Act, 1927, as no conversion or exploitation of reserved forests, protected forests, or village forests is involved which was also verified by VVB by assessment of KML Files.^{/03/}

		4. The private nature of the farmlands and the agroforestry practices adopted align with the Act's emphasis on sustainable land use and conservation. Based on the above assessments, VVB confirms that the project complies with the Indian Forest Act, 1927 and does not violate any applicable sections of the legislation.
	National Forest Policy 1988	Based on the review of VCS PDMR/01, Monitoring Plans, and SOP^{/05/}, along with findings from onsite interviews^{/i1-i22/} with farmers and inspections^{/i1-i22/} conducted by the VVB, the following points confirm the project's compliance with the National Forest Policy: 1. The project promotes the plantation of Mango, Red Sander, and Guava trees on private farmlands, contributing to the increase in tree cover, which aligns with the National Forest Policy's objective to expand the country's forest and tree cover. 2. By utilizing private agricultural lands for agroforestry, the project supports the policy's emphasis on afforestation and sustainable land use practices without encroaching on forested areas. 3. The harvesting of fruits by farmers for commercial purposes enhances rural livelihoods, aligning with the policy's objective to integrate forest conservation with community welfare.

		4. The increase in tree cover resulting from the project activities contributes to carbon sequestration and ecological balance, supporting the policy's focus on mitigating climate change and enhancing environmental stability. VVB therefore confirms that the project aligns with the principles and objectives of the National Forest Policy 1988 by fostering sustainable agroforestry practices, improving rural livelihoods, and contributing to ecological and environmental goals.
	Forest Conservation Act 1980	Based on the review of VCS PDMR^{/01/}, Monitoring Plan^{/06/}, SOP^{/06/}, and findings from onsite interviews with farmers and inspections ^{/i-1-i22/} conducted by the VVB the following points confirm the project's compliance with the Forest Conservation Act, 1980: 1. The project involves the plantation of Mango, Red Sander, and Guava trees exclusively on privately owned farmlands, ensuring that no diversion of forest land for non-forest purposes occurs, as stipulated under the Act. 2. Land records^{/05/} verified during onsite inspections confirm that the plantations are established on agricultural lands, thus complying with the Act's provisions for preserving forest resources. 3. The project's focus on agroforestry aligns with the Act's objective of

		maintaining ecological balance and promoting afforestation without compromising existing forested areas. 4. The activities under the project indirectly support forest conservation by enhancing tree cover and reducing pressure on natural forests through the sustainable production of fruits and timber. VVB therefore confirms that the project adheres to the requirements of the Forest Conservation Act, 1980, by ensuring sustainable land use, protecting forested areas, and contributing to the Act's goal of promoting afforestation and ecological balance. .
	Forest Right Act 2006	Based on the review of VCS PDMR^{/01/}, farmers agreements^{/05/} and onsite interviews ^{/i1-i22/} with the farmers VVB confirms that the project doesn't violate rights of local population over forest in the project area. Moreover, the land being used for the project implementation as confirmed by GIS analysis^{/03/} of project area by the VVB doesn't include forest but agricultural lands. For which the rights over credits has been dispersed to the ground implementation partners^{/05/} legally via farmers agreements^{/15/} .
	Andhra Pradesh Forest Act, 1967	Based on the review of VCS PDMR ^{/02/}and KML files^{/03/} VVB confirms that the project only includes plantation of tree species on agricultural lands. There is no such activities like setting fire to land or forest produce, granting

		pattas to land. occupation, clearing, ploughing, or breaking up of land for cultivation, cutting, sawing, conversion, and removal of trees etc. Therefore, VVB confirms that the project is in compliance with Andhra Pradesh Forest Act, 1967.
	Andhra Pradesh Forest (Amendment) Act, 2016 (Act No. 15 of 2016)	Based on the review of VCS PDMR ^{/01/} and KML files ^{/03/} , VVB confirms that the project involves tree plantations on private agricultural lands and does not encroach on or divert forest land. Verified land records ^{/05/} confirms that no prohibited activities, such as unauthorized felling, clearing, or forest degradation, occur. Same is reflected in Monitoring plan, SOPs ^{/06/} also. The project aligns with the Act by promoting sustainable agroforestry, enhancing tree cover, and avoiding any actions detrimental to forest conservation.
	The Tamil Nadu Preservation of Private Forest Act, 1949	Based on the review of VCS PDMR ^{/01/} , KML files ^{/03/} , Monitoring Plan ^{/06/} , and agreements ^{/05/} , VVB confirms that the project does not involve illegal felling of trees in forest areas. The project is limited to the plantation of Mango, Guava, and Red Sander trees on private agricultural lands using an agroforestry model. Hence project aligns with the Act by promoting sustainable practices on private lands without violating forest conservation provisions.
	The Tamil Nadu Forest Act,	Based on the review of VCS PDMR ^{/01/} , KML files ^{/03/} , Monitoring plan ^{/05/06/} and agreements ^{/11/} , VVB concludes

	Act No. V Of 1882	that there no illegal felling of trees is involved in forest areas under this project. The project involves plantations of three tree species Mango, Guava and Red Sander in agroforestry model on farmer's land and there is no clearing of native ecosystem as confirmed by GIS assessment ^{/03/} of the project shapefiles. Therefore VVB concludes that the project activity doesn't violate the provisions of The Tamil Nadu Forest Act, Act No. V Of 1882.
	The Tamil Nadu Hill Areas (Preservation of Trees) Act, 1955	Based on the review of VCS PDMR ^{/01/} , KML files ^{/03/} , Monitoring plan ^{/06/05/} and agreements ^{/11/} , VVB concludes that there is no illegal felling of trees is involved in forest areas under this project. The project involves plantations of three tree species Mango, Guava and Red Sander in agroforestry model. Moreover, a thorough assessment for non-conversion of native ecosystems ^{/07/} has been conducted by VVB. Therefore, VVB concludes that the project activity doesn't violate the provisions of The Tamil Nadu Hill Areas (Preservation of Trees) Act, 1955.
	Wildlife (Transit) (Tamil Nadu) Rules, 1991	Based on review of VCS PDMR ^{/01/} , farmer agreements ^{/11/} and KML files ^{/03/} VVB confirms that the project involves plantation of native or naturalized species. VVB confirms that the species planted doesn't impose any harm to the surrounding environment rather serve as a food source for the wild animals and birds. Moreover through GIS

		assessment ^{/03/} has also been conducted by VVB to see if any conversion of native ecosystem has been done under the project. VVB confirms that no conversion has taken place due to implementation of plantation activities in the project area. Thus, project doesn't violate the regulations under Wildlife (Transit) (Tamil Nadu) Rules, 1991.
	Tamil Nadu Forest Policy 2018	Based on review of VCS PDMR ^{/01/} , farmer agreements ^{/11/} and KML files ^{/03/} VVB confirms that the project contributes to VVB confirms that the project involves plantation of native or naturalized species. Moreover, a through GIS assessment has also been conducted by VVB to see if any conversion of native ecosystem has been done under the project. VVB confirms the project implementation doesn't violate the regulations imposed by the Tamil Nadu Forest Policy 2018.
	Madhya Pradesh State Forest Policy (2005)	Based on the review of VCS PDMR ^{/01/} , KML files ^{/03/} and onsite inspection and interviews ^{/i1-i22/} VVB confirms that the project involves plantation of tree species on private agricultural lands. This will lead to increased tree cover also in the state. In addition to that none of the species planted under the project is invasive. Therefore, no harm to the surrounding ecosystems will be caused. Moreover, through a thorough GIS assessment ^{/03/} VVB also confirms that no conversion of native ecosystem has taken place

	due to the implementation of the project activities.
Double counting and participation under other GHG programs	<u>Participation under other GHG programs</u> Projects registered (or seeking registration) under other GHG program(s) Based on the review of VCS PDMR, declaration^{/11/} provided and searching through the registries- CDM, Plan Vivo, Gold Standard etc., ^{/B04/} and Verra, VVB confirms that the project has not been registered under any other GHG programs and is not seeking registration also. Furthermore, VVB reviewed the project's KML files^{/03/} and cross-checked them against existing projects in nearby regions to assess potential spatial overlaps. Based on this assessment, the VVB confirms that the project area does not overlap with any other registered or proposed GHG project activity. Rejection by other GHG programs Based on the review of VCS PDMR^{/01/} and through own research in registries – CDM, Plan Vivo, Gold Standard etc., ^{/B04/}, VVB confirms that the project has not participated in any other GHG program and has not been rejected by other GHG programs.
No double claiming with emissions trading programs or binding emission limits	VVB based on the review of the VCS PDMR, declaration ^{/11/} , and searching through the registries (CDM, Plan Vivo, Gold Standard etc) ^{/B05/} confirms that Net GHG emission reductions or removals generated by the Project will not be used for compliance with an emissions trading program or to meet binding limits on GHG emissions in any Emission Trading program or other binding limits.
No double claiming with other forms of environmental credit	VVB, based on the review VCS PDMR, and declaration ^{/11/} confirms that there is no other form of environmental credits included in the project framework or currently ongoing in the project area. The project has not participated in any other program of environmental crediting for GHG emission removals. The project does not intend to generate any other kind of environmental crediting for GHG emission removals.

Supply chain (Scope 3) emissions double claiming	Based on the review of the VCS Joint PDMR ^{/01/} and through on-site inspection/interviews ^{/11-i22/} , VVB confirms that PP has identified the seedlings supplier as a potential supply chain partner under Scope 3. A declaration has been obtained ^{/11/} and reviewed for not claiming any Environmental Attributes. A contractual agreement ^{/05/} is also in place between farmer and the PP to ensure that the produce consumers do not claim any environmental attributes for the purchase of the produce from the project activity.		
Sustainable development contributions	SDG No.	SDG indicator	VVB assessment
	1.No Poverty	1.4.2, Proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure	Based on the review of employment slips ^{/17/} , onsite interviews with the farmers, farmers agreements ^{/11/} and checking land records ^{/19/} VVB confirms that the under the project, around 8126 people employment has been generated.
	8. Decent Work Economic Growth	8.5.1, Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	Based on the review of salary slips ^{/17/} and employment records ^{/17/} VVB confirms that there is no discrimination in salaries and working hours for male and female employees. Moreover based on training records ^{/19/} VVB also confirms that trainings are also being provided to the farmers for optimum

			survival rates and productivity of plantations.
	13. Climate action	13.2.2, Tonnes of greenhouse gas emissions avoided or removed	Based on the review of ER sheets ^{/02/} and KML files and further onsite inspections ^{/i1-i22/} VVB confirms that the project involves plantations of Mango, Red Sander and Guava tree species on agricultural lands which will also lead to carbon sequestration by the planted number to trees.
	15. Life on land	15.1.1 Forest area as a proportion of total land area	Based on the review of VCS PDMR ^{/01/} , forest management manuals and SOPs ^{/06/} and onsite inspections ^{/i1-i22/} , VVB confirms that plantation of trees will support farmers through additional income and also help in improving the biodiversity. Furthermore verifying through KML files ^{/03/} , VVB also confirms that the plantation of around

	916.52 ha. has been carried out under the first project activity instance.
Additional information relevant to the project	Additional information <u>Leakage management for AFOLU projects</u> VVB based on the onsite inspections^{/11-i22/}, VCS PDMR^{/01/} and ex-ante and ex-post carbon sheets^{/02/} confirm that the leakage has been accounted in accordance with the provisions of CDM AR Tool 15. As the project uses an agroforestry model the leakage caused due to plantation of trees in plots alongside of crops is calculated. The approach followed involves deduction of area which will be displaced due to the plantation of trees. PP has estimated leakage for the displacement of activities by applying a 0.5-meter radius buffer^{/17-ggg/} on both sides of the trees. Supporting evidence (<u>PERFORMANCE OF MANGO BASED AGROFORESTRY SYSTEM WITH DIFFERENT SUMMER VEGETABLES COMBINATIONS</u> by MST. SHUBA.pdf) for the same has been provided by PP to justify the application of this approach. VVB has reviewed the provided evidence and confirms that the approach used for leakage estimations was found to be valid, appropriate, and conservative. <u>Commercially sensitive information:</u> Based on the review of the PDMR^{/01/}, VVB confirms that certain commercially sensitive information—such as land ownership documents, agreements between farmers and Project Participants, and details of the benefit-sharing mechanism—was excluded from the public version of the PDMR. These documents were made available to the audit team during the on-site visit and were also provided during the VVB desk review. VVB further confirms that the exclusion of these documents from public disclosure is valid and acceptable, as these items do not fall within the scope of Section 3.5.4 of the VCS Standard v4.7^{/B01/}..

3.2 Project Activity Instances in Grouped Projects

Refer to VVB assessment for sub section project design above in section 3.1 of this report.

3.3 Safeguards

3.3.1 Stakeholder Engagement and Consultation

3.3.1.1 Stakeholder Identification

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Stakeholder identification	VVB has taken the following measures to confirm to assess the process of stakeholder consultation and to check analysis applied to identify stakeholder and stakeholder groups: 1. Review of VCS PDMR^{/01/} 2. Onsite Inspection/interviews^{/i-01-22/} 3. Review of LSC documents and meeting records^{/07/} 4. On-going Grievance Mechanism Based on the above assessment references, VVB confirms that PP has appropriately demonstrated the approach applied for stakeholder identification and these following steps were taken by PP to identify these stakeholders: • Internal assessment of soil type, water availability, cropping patterns, farming practices, climate conditions and hydrogeology. This assessment was carried out to identify suitable locations for stakeholder meetings and project implementation activities. • An engagement session was conducted with local community members to introduce and communicate the potential benefits of the project to participating farmers. • An invitation letter^{/07/} was sent to all farmers in the local language detailing date, venue and subject of the meeting and the meetings were composed of presentations and

	obtaining feedback from the stakeholder through feedback forms^{/07/} • Stakeholder input was incorporated in developing project design • Interested farmers were registered through multiple channels, including phone calls, visits by project volunteers, and direct walk-ins to the offices of the ground implementation partners Based on the document review, VVB has ascertained that the following are the identified stakeholders other than PP and ground implementing partner were: 1. Famers / Local farming communities and 2. Daily wages labor PP has followed the process for identification of stakeholders and their importance for the project activity which deems to be valid to the VVB. VVB also concludes that the identification approach followed by PP was appropriate and all the stakeholders have been accurately identified by the PP. The approach followed is satisfactory and in compliance with requirements of section 3.18.1 of VCS Standard 4.7
Legal or customary tenure/access rights	Based on review of VCS PDMR, onsite inspection/interviews^{/i1-i22/} and review of land title records^{/05/} VVB confirms that the ownership of land is entirely based on government land rules of the states and no customary tenure or access rights prevails in the project area. Furthermore the ownership of land of farmers participating in the project were verified by VVB during the onsite inspection^{/i-01-22/} via state government websites^{/B05/}.The ownership for only carbon credits has been transferred to the ground implementation partners via contractual agreements^{/05/}.The ground implementation partners has transferred these carbon rights to the PP via service agreements.^{/12/} These agreements have been verified by VVB during the assessment and were found appropriate. Therefore, VVB confirms that PP has appropriately identified the resource rights of the stakeholders in the project area and has legally obtained rights for carbon revenue generated from the project without any violation of existing rights of the stakeholders and in compliance with section 3.18.1 (2) of the VCS Standard v4.7.

Stakeholder diversity and changes over time	Based on the review of VCS PDMR^{/01/} VVB confirms that PP has appropriately demonstrated the change in diversity and changes over time as follows: In line with VCS PDMR^{/01/} the project areas mostly include farmers of varying land sizes. Farmers encompass both those with small landholdings grappling with financial challenges and those with medium-sized farms experiencing relatively consistent incomes. Similarly, local daily wage laborers experience differing levels of economic stability influenced by factors like job availability, wages, and seasonal variations. The changes over time are mostly positive leading to an increase in revenue obtained from their land as compared to before. VVB has conducted on-site inspection/interviews^{/i1-i22/} with the farmers and also reviewed the PP's governing policies^{/09} and confirmed the following: ✓ PP has appropriately described diversity among the stakeholders. ✓ There is no discrimination based on caste, religion, and economic status under the project. ✓ Participation in the project will improve the economic conditions of the farmers and their families. Thus, it leads to positive changes over time. Overall, VVB confirms that the project is expected to enhance health, economic growth for farmers and in compliance with section3.18.1 (3) of the VCS Standard v4.7
Expected changes in well-being	Based on the review of VCS PDMR, contractual agreements^{/05/} and onsite inspections^{/i1-i22/}, VVB confirms that the project activities are poised to deliver the following changes in the wellbeing of the farmers: 1. Obtaining revenue from sales of fruits or self-consumption/sale and sales of timber. 2. In addition to that a portion of carbon revenue will also be provided to the farmers as per the agreements^{/05/} which will add to their economic wealth. 3. Training provided during the project implementation will also help the farmers to improve their agricultural skills and gain

	knowledge about sustainable and efficient agricultural practices. Thus, VVB concludes that the impact of the project on the wellbeing of the stakeholders will be positive and in compliance with section 3.18.1(4) of VCS Standard v4.7^{/B01/}.
Location of stakeholders	VVB, based on the review of VCS PDMR, KML^{/03/}, remote sensing shapefiles^{/03/} and on-site inspection/interviews^{/i1-i22/} confirms that the stakeholders belong to state of Andhra Pradesh, Madhya Pradesh and Tamil Nadu. It is also confirmed that there are no indigenous peoples (IPs), local communities (LCs), customary rights holders, or impacts on areas beyond the designated project region and outside the project area.
Location of resources	VVB, based on the review of VCS PDMR, KML files^{/03/}, and on-site inspection/interviews^{/i1-i22/}, confirms that the project resources are located within the project area^{/03/} i.e., Andhra Pradesh, Madhya Pradesh and Tamil Nadu, India

3.3.1.2 Stakeholder Consultation and Ongoing Communication

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Stakeholder engagement process	VVB based on the review of following documents confirms that PP has conducted stakeholder's consultations in line with the requirements of section 3.18.2 of VCS Standard 4.7 1. VCS PDMR^{/01/}, 2. Invitation letter^{/07/} 3. LSC MOMs^{/07/} 4. LSC attendance sheets^{/07/}, 5. Feedback forms^{/07/} Meeting invitations were distributed through phone calls, invitation letters, and notices displayed at the Gram Sabha offices in Hindi, English, and local languages at least 8–10 days prior to the meeting date. In addition, as per the revised PDMR, the engagement process was further facilitated through multiple communication channels — including telephonic and word-of-mouth outreach via community leaders, women's groups, and

	farmer collectives. The PP scheduled Local Stakeholder Consultation (LSC) meetings and project discussions during the official working hours of the Gram Sabha offices, ensuring accessibility and convenience for all stakeholders, including farming communities, women participants, and daily-wage laborers. To strengthen inclusivity, the PP organized small-group meetings specifically for women, supported by female facilitators and respected women leaders from within the community, creating a safe and comfortable environment for open participation. This approach is considered appropriate and supports inclusivity by providing opportunities for participation from diverse community members, including women and economically active groups with limited availability outside regular working hours. Attendance records and photographs provided by the PP confirm women's participation in multiple meetings. The evidence for the same has been reviewed and found appropriate by the VVB. Furthermore, VVB confirms that the PP has conducted stakeholder meetings in a phased manner across multiple locations within the states of Andhra Pradesh, Madhya Pradesh, and Tamil Nadu, spanning from 1 March 2018 to 28 February 2024. More LSCs were also conducted, and feedback forms were collected by the PP during the project implementation phases, as confirmed during stakeholder interviews ^{/i1-i22/} and through supporting ^{/07/} documentation.
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Figure: Photographs of engagement of women

Furthermore, VVB confirms that PP has conducted stakeholder meetings in phased manner in multiple locations within states of Andhra Pradesh, Madhya Pradesh and Tamil Nadu spanning from 01st March 2018 to 28th February 2024.

Consultation outcome

Based on the on-site interviews ^{/i1-i22/} with the farmers, VVB concludes that stakeholders were made aware of the project activities, including plantation design, implementation, and carbon revenue mechanisms. Farmers willingly signed participation waivers^{/05/} to take part in the project. According to the LSC feedback forms^{/07/}, farmers perceived the project as an opportunity for additional income and expressed interest in participating.

VVB further confirms that the PP has appropriately communicated the following aspects with local stakeholders during the consultations:

- Overview of the project design, implementation, monitoring, and expected outcomes;
- Relevant laws and regulations pertaining to worker rights in the host country;
- Potential risks, costs, and benefits associated with the project;

	• Details of the Free, Prior, and Informed Consent (FPIC) process and its implications for property and resource rights; • Benefit-sharing mechanisms and equitable distribution of project benefits; • Validation and verification processes under the VCS program, including the role of the Validation/Verification Body (VVB) and planned site visits. Based on the review of the updated PDMR, meeting minutes^{/07/}, attendance records^{/07/}, and on-site interviews^{/1-1-22/}, VVB concludes that the consultation process was transparent, inclusive, and culturally appropriate. The outcomes were positive and properly documented, with active participation from both men and women stakeholders. Accordingly, VVB affirms that the PP has summarized the consultation process and outcomes in Section 2.1.2 of the PDMR in accordance with Section 3.18.2 of the VCS Standard v4.7. ^{/B01/}
Ongoing communication	VVB based on the onsite inspection/interviews ^{/11-122/} confirms that following methods have been utilised by PP/ground implementation partners to maintain ongoing communication with the farmers: 1. A group of volunteers chosen from the community 2. Shared contacts of ground implementation partner's staff 3. Visits to office 4. WhatsApp groups. Based on the interviews with the farmers, volunteers and ground implementation partner staff^{/1-01-22/} and verifying WhatsApp groups VVB confirms that PP have established the above mentioned mechanisms for ongoing communication with stakeholders to allow stakeholders to raise concerns about potential negative impacts during project implementation which were found to be appropriate and satisfactory in relation to the requirements of section 3.18.5 of VCS Standard 4.7^{/B01/}.

Stakeholder input	Based on the review of feedback forms^{/07/}, LSC MOMs^{/07/} and onsite interviews^{/i-01-22/} VVB confirms that the following inputs were received from the farmers. 1. Positive benefits of tree plantation for the environment and for the community were well known to farmers. Additional Income from carbon credits was a new concept for the farmers. 2. Farmers agreed to attend trainings, assist DOE during the site visits and support PP during monitoring of carbon stocks. 3. Stakeholders and farmers reached a consensus that the program carried no potential negative impacts. 4. Regular organization of stakeholder engagement meetings Based on the above observations, VVB concludes that the farmers are content with their participation in the project and has a positive outlook towards their participation in the project. Furthermore, VVB confirms that PP has adequately considered these comments in project design before implementation of the project and PP has appropriately demonstrated the same in the section 2.1.2 of the VCS PDMR in accordance with section 3.18.3 of the VCS Standard v4.7.
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3.3.1.3 Free, Prior, and Informed Consent

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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Obtaining consent	Based on the review of VCS PDMR^{/01/}, farmer agreements^{/05/} and onsite interviews^{/i1-i22/}, VVB confirms that FPIC has been obtained via farmer agreements^{/05/} from the farmers after conducting local stakeholder consultation meetings^{/07/} where a detailed description of project has been provided to the farmers. Furthermore, it is confirmed by the PP that the principle of FPIC is central to the project, ensuring that only interested and willing farmers participate. The stakeholders were transparently informed about the project, its benefits, and engaged in feedback. A detailed farmers' agreement^{/05/} was drafted to protect stakeholders' interests. The same farmers' agreements^{/05/} are verified by the VVB for confirmation and same observed during onsite visit as well. Therefore, based on the overall assessment above, it is confirmed that the PP has followed the appropriate process of FPIC as per the VCS standard requirements.
Outcome of FPIC discussion	Based on the review of VCS PDMR^{/01/} farmers' agreements^{/05/}, and stakeholder consultation documents^{/07/} and on-site inspections^{/i-01-i-22/}, VVB, confirms that after extensive consultations, farmers willingly signed the farmers' agreements^{/05/}, agreement clauses which likely cover various project aspects such as rights, responsibilities, benefits, and environmental safeguards. The key points emphasized in the transparent agreement included are Voluntary engagement with a clear understanding of project objectives; Detailed information on project activities, including carbon finance; Clarification of farmers roles and responsibilities within the project; Disclosure of economic benefits and potential livelihood improvements resulting from participation. VVB team has cross-checked the agreements^{/05/} and found them to be appropriate. . Based on the review of LSC documents^{/07/} and farmers agreements^{/05/} VVB confirms that the project adheres to the land ownership and no forced relocation has occurred due to the project implementation. Therefore, VVB concludes that the approach followed for obtaining FPIC by PP is appropriate and satisfactory in relation to the requirements of section 3.18.7 of the VCS standard v4.7.

3.3.1.4 Grievance Redress Procedure.

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Development process	The following measures were followed by VVB to review the grievance mechanism of the subject project: 1. Interview with the stakeholders^{/i-01-22/} 2. Review of grievance logbook^{/08/} kept at MFI, Green mile and Outreach office 3. Review of WhatsApp groups during onsite inspection^{/i-01-22/} Based on the review of above documents, and onsite inspection/interviews^{/i-01-i-22/}. VVB confirms that regular communication has been maintained through phone calls and WhatsApp groups. The grievances have been updated in the logbooks^{/08/} with the dates and details of the farmers. Based on these observations VVB confirms that the grievance mechanism established by PP is appropriate and in line with the requirements of section 3.18.4 of VCS Standard 4.7.
Grievance redress procedure	Upon review of the revised PDMR, VVB notes that the PP enhanced the Grievance Redress Mechanism (GRM) to demonstrate cultural appropriateness, inclusivity, and accessibility, in line with the requirements of Section 3.18.6 of the VCS Standard v4.7^{/B01/}. As described in the PDMR^{/01/}, the GRM integrates local customs and participatory practices through community-level mediation and group discussions conducted in local languages. The mechanism engages local NGOs, women's groups, and farmer collectives as initial contact points for receiving and resolving grievances, thereby ensuring familiarity and trust at the community level. It also provides gender-sensitive and culturally neutral spaces where both men and women can raise concerns independently and comfortably, respecting traditional norms and social hierarchies. The PDMR^{/01/} further specifies that neutral mediators—such as Panchayat heads, agricultural experts, and other respected community figures (e.g., Dr. R. Narendran)—will facilitate resolution through culturally recognized channels prior to formal legal recourse. Multiple grievance channels, including in-person, phone, text, and written submissions in local languages, are available to accommodate stakeholders with varying literacy and

accessibility levels. The mechanism also commits to confidentiality, non-retaliation, and free access to ensure equitable participation for all affected stakeholders.

Based on the information provided in the PDMR^{/01/} and onsite interviews[/], VVB concludes that the GRM framework appropriately integrates culturally sensitive and community-based conflict resolution practices and VVB considers Dr. Narendran suitably qualified to act as an independent technical expert and mediator within the GRM. VVB also affirms that his involvement is limited to mediation and conflict resolution and does not extend to project design, implementation, or monitoring activities. This was further confirmed by reviewing CV^{/08/} of Dr. Narendran.

In order to assess the implementation and effectiveness of the GRM and to corroborate the claim that grievances raised were appropriately resolved, the VVB reviewed grievance registers^{/08/}, verified grievance-related communications (including WhatsApp groups), and conducted interviews with field volunteers and project beneficiaries^{/i-01-22/} during the onsite visit. The grievance register documents the date of receipt, nature of grievances, actions taken, and closure status for each case. VVB has verified the following in order to check the compliance of grievance addressal mechanism in place with the VCS standard requirements 4.7^{/B01/}.

1. Grievance Registers^{/08/}
2. WhatsApp groups
3. Interview with the field volunteers and farmers^{/i-01-22/}

VVB reviewed the grievance-related information presented in the PD, the grievance register^{/08/}, and the PDMR to assess whether grievances were recorded, addressed, and documented in accordance with the project's grievance mechanism. Based on the review of the grievance register, the VVB notes that grievances were received only on a limited number of topics, as described below, with additional details and explanations provided in the PD. Based on the VVB's review, no grievances of a different nature were recorded during the reviewed period.

	Nature of Grievance	Date Received	Actions Reported by PP	Evidence Reviewed by VVB	Closure Status (as reported)
	Queries regarding stunted growth of planted saplings	The grievance register records similar grievances received on multiple dates during the reporting period. As individual receipt dates are documented in the grievance register, no dates are reproduced in the table below	PP reported that explanations were provided to stakeholders on biophysical and site-specific factors influencing plant growth. PP further reported that field observations were conducted and soil amendments (organic fertilizers) were applied where required.	PDMR, grievance register ^{08/} and onsite interviews ^{/i-01-22/} with the stakeholders	Closed

	Queries regarding preventive measures for pests and diseases		PP reported providing information on pest and disease management practices, including integrated pest management approaches and the use of organic/bio-based pesticides, along with farmer guidance.	PDMR, grievance register ^{08/} , training records ^{19/} and onsite interviews ^{/i-01-22/}		

	Clarification requests regarding project benefits to local communities		PP reported that clarifications were provided on anticipated environmental and socio-economic benefits and that stakeholder meetings were conducted in line with FPIC procedures.	PDMR, grievance register ^{/08/} , stakeholder meeting records ^{/07/}	Closed
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The reviewed grievance records^{/08/} confirm that grievances received under the project were addressed through documented corrective actions and were closed within a reasonable timeframe, in accordance with the defined grievance redress procedures. No unresolved or pending grievances were identified at the time of assessment. This was further corroborated through interviews^{/i-01-22/} with randomly selected farmers and field staff during the onsite visit, who confirmed that grievances raised were addressed in a timely manner and that no outstanding grievances remained. In addition, the VVB verified the Verra project landing page and confirmed the absence of publicly raised grievances or comments during the reporting period. VVB notes that the information provided demonstrates that grievances were recorded and addressed in line with the project's grievance mechanism.

As per the standard requirement the following conditions must be fulfilled.

	S. No.	VCS Standard requirements 4.7	VVB assessment for PP's grievance procedure.
	1.	The project proponent shall attempt to amicably resolve all grievances and provide a written response in a manner that is culturally appropriate.	Based on the review of grievance logbooks^{/08/} and onsite interviews with the stakeholders VVB concludes the following: Grievance is mostly received through phone calls, WhatsApp or physical meetings with the ground volunteers. The resolutions are provided through the same mediums. An acknowledgement is sent to the complainant after his/her grievance is received. Based on the type of issues and their risk level it is directed to appropriate institution/personnel. Possible resolutions are then shared with the complainant. The attempt is to resolve grievance in minimum time. The grievance received along with date and its solution are noted down in the register publicly available and is placed in ground implementing partner's office. The same was also reviewed by VVB during the onsite inspection/interviews.
	2.	Any grievances that are not resolved by amicable negotiations shall be	During onsite interviews ^{/i-01-i-22/} , it was conveyed to VVB that in case any grievance

		referred to mediation by a neutral third party.	cannot be resolved by amicable negotiations, then it will be referred to neutral third party as an agricultural experts, environmental consultants, or academics, for mediation i.e., Dr. Nagendran. PP has provided the details of individual ^{/08/} who will be acting as neutral third party for the project.
	3.	Any grievances that are not resolved through mediation shall be referred either to a) arbitration, to the extent allowed by the laws of the relevant jurisdiction or b) competent courts in the relevant jurisdiction, without prejudice to a party's ability to submit the grievance to a competent supranational adjudicatory body, if any.	During onsite interview ^{/i-01-22/} it was also conveyed to VVB that if the mediation fails even through a independent third party the project has a choice between arbitration, national courts or any higher international body for the resolution of dispute.
Based on the above observations VVB confirms that the project has developed a grievance mechanism that includes processes for receiving, hearing, responding and resolving grievances within a reasonable time period and in a culturally appropriate conflict resolution method. Furthermore, the grievance registers are publicly available and the grievances raised under the project were appropriately addressed and resolved by the project proponent, Thus, VVB confirms that the developed grievance mechanism is appropriate, effectively implemented and in line with the VCS standard requirements.			

3.3.1.5 Public Comments

The project was open for public comments from 16/08/2022 to 15/09/2022. Based on the VCS PDMR^{/01/} and further confirming through Verra Registry, VVB confirms that no public comments were received during this period.

3.3.2 Risks to Local Stakeholders and the Environment

3.3.2.1 Management Experience

VVB based on the onsite inspections^{/i-01-22/} with the management team personnels and review of CVs^{/18/} of the project implementation team confirms that the project team includes team members holding expertise in forestry and agroforestry. The personnels have experience from 10-20 years.

3.3.2.2 Risk Assessment

Moreover, the ground implementation partners (MFI, Green mile Agroforestry Pvt. Ltd. and Outreach) have been involved in implementing community-based livelihood and carbon development projects across India other than projects seeking registration for credits.

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Natural and human-induced risks to stakeholders' wellbeing	VVB used the following measures to confirm that no natural or human-induced risks can be caused due to implementation of the project activities. 1. Interviews with the stakeholders^{/i-01-22/} 2. Reviewing of farmers' agreements^{/05/} 3. Review of project policies^{/09/} 4. Review of management manual and SOPs^{/06/} 5. Review of LSC documents^{/07/} and grievance mechanism^{/08/} Based on the above observations VVB concludes the following: FPIC has been obtained from the participating stakeholders in a proper manner. There was no forcing or relocation of communities as a result of project activities. Culturally sound grievance mechanism has been placed to resolve the disputes with reasonable timeframes. The benefit sharing is transparent in the

	waivers signed by the participating farmers. Only native and naturalized species are being planted under the project. Along with that only the use of organic pesticides or fertilizers will be done in the project thus causing no harm to the environment. Furthermore, the governing policy of the project promotes equitable treatment to all the stakeholders and prevents harassment or discrimination on all grounds. Therefore, VVB concludes that there is no risk to stakeholder's wellbeing as a result of project implementation.
Risks to stakeholder participation	VVB has conducted onsite interviews^{/i-01-22/} with the stakeholders to identify possible risks to stakeholders' participation. During interviews it was conveyed to VVB that farmers are eager to participate in the project activity due to additional income due to harvesting, free cost saplings and carbon revenue in the long term. FPIC^{/05/} has been obtained from the farmers after proper transparent demonstration of carbon program and portions of carbon revenue benefit that will be shared with them. Farmers also have contacts of field volunteers, WhatsApp group and office address to resolve issues faced by them or disputes. VVB has also reviewed governing project policies^{/09/} in place grievance registers^{/08/} and LSC documents^{/07/} to confirm no risk. Based on the above observations VVB confirms that no risk has been identified that prevents stakeholders' participation in the project.
Working conditions	Based on the review of policy documents^{/09/} and SOPs^{/06/} provided VVB confirms that there has been no risk identified related to working conditions in the project area as the project is being implemented on farmers' own land which they are already familiar with. Furthermore, the governing policies^{/09/} of the project prohibit discrimination and harassment based on all grounds. Furthermore, as required by section 3.18.2 of the VCS Standard v4.7^{/B01/}, PP has communicated all relevant project design elements, operational procedures, and associated risks during stakeholder consultations. VVB confirms that the PP has implemented capacity-building activities, provided

	training for day-to-day operations, and established a management manual that guides workers and farmers across all operational steps. Furthermore, during the on-site inspection, VVB conducted independent interviews^{/11-122/} with farmers and workers and confirms that no risks related to working conditions were identified and the farmers demonstrated a clear understanding of all project operations, and the PP has deployed on-ground personnel to ensure continuous engagement, provide operational guidance, This was further checked and confirmed through VVB's review of the PP's HR Manual^{/09/} and Code of Conduct^{/09/} and management manual^{/06/} of the project. Based on the above assessment, VVB confirms that the conclusion of "no identified risk related to working conditions is valid, justified, and acceptable.
Safety of women and girls	Based on the review of SOPs^{/06/} and PP's POSH and anti – harassment and anti-discrimination policies^{/09/} VVB confirms that the project doesn't harm safety of women and girls.
Safety of minority and marginalized groups, including children	Based on the review of SOPs^{/06/} and anti-discrimination policy^{/09/} of the project VVB confirms that the project possesses no risk to safety of minority and marginalized groups, including children.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials, and chemical pesticides and fertilizers)	Based on the review of VCS PDMR^{/01/} and management plans, SOPs^{/05/} VVB confirms that the project proponent (PP) has implemented safeguards to protect the surrounding environment, including air and water quality, noise levels, and hazardous materials. The safeguards include use of only organic pesticides and fertilizers in the project. Additionally, PP complies with the laws and policies set forth by the Government of India. Furthermore, as required by section 3.18.2 of the VCS Standard v4.7^{/B01/}, PP has communicated all relevant project design elements, operational procedures, and associated risks during stakeholder consultations. VVB confirms that the PP has implemented capacity-building activities, provided training for day-to-day operations, and established a

	management manual^{/06/} that guides workers and farmers across all operational steps. Furthermore, during the on-site inspection, VVB conducted independent interviews^{/i1-i22/} with farmers and workers and confirms that no risks related pollutants were identified. Farmers involved in the project reported using Jeevanamrut and neem oil as organic fertilizers and pesticides, and no chemical inputs were observed. The farmers demonstrated a clear understanding of all project operations, and the PP has deployed on-ground personnel to ensure continuous engagement, provide operational guidance, and raise awareness on the use of organic inputs. This was further checked and confirmed through VVB's review of the PPs management manual^{/06/} of the project.
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3.3.3 Respect for Human Rights and Equity

3.3.3.1 Labor and Work

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Discrimination	Based on the review of SOPs ^{/06/} and project's anti-discrimination policies ^{/09/} implemented by PP and onsite interviews ^{/i1-i22/} , VVB confirms that no discrimination based on any grounds caste, sex, religion or age will take place under the project. The same was confirmed by VVB during the onsite interviews ^{/i1-i22/} . The same was confirmed by VVB during the onsite interviews ^{/i1-i22/} .
Sexual harassment	VVB based on the review of SOPs ^{/06/} and anti-harassment policy ^{/09/} provided by PP confirms that neither they nor any other entity involved in the project design or implementation has engaged in any form of sexual harassment or will engage in future. The same was confirmed by VVB during the onsite interviews. ^{/i1-i22/}
Equal pay for equal work	Based on onsite interviews ^{/i1-i22/} and review of SOPs ^{/06/} and governing policies ^{/09/} , VVB confirms that the project supports equal pay for equal work and offers employment opportunities and promote fair and inclusive work environments for both men and women under the project.

Gender equity in labor and work	VVB based on the onsite interviews ^{/i1-i22/} and review of SOPs ^{/06/} and governing project policies ^{/09/} confirms that PP maintains equal distribution of work and labor between all the genders participating in the project which leads to enhancement of distribution of equal to all genders involved in the project.
Forced labor	VVB based on the review of SOPs ^{/06/} and governing policy documents ^{/09/} and onsite interviews ^{/i1-i22/} confirms that project prohibits forced labor.
Child labor	VVB based on the review of SOPs ^{/06/} and governing policy documents ^{/09/} and onsite interviews ^{/i1-i22/} confirms that project prohibits forced labor.
Human trafficking,	VVB based on the review of SOPs ^{/06/} and governing policy documents ^{/09/} and onsite interviews ^{/i1-i22/} confirms that project prohibits human trafficking and possess strict regulations against such matters.

3.3.3.2 Human Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
No risk was identified for Human Rights	VVB has reviewed the farmers' agreements^{/07/}, SOPs^{/06/} and conducted onsite interviews^{/i1-i22/} with farmers to confirm that the property and land use rights of local stakeholders have been upheld under the project. Based on the review of the above-mentioned documents and farmer interviews, VVB confirms that the FPIC has been obtained from enrolled farmers after conducting local stakeholder consultation and transparently demonstrating to the farmers what the project is about. The farmers are well aware of their rights and policies. Based on these observations VVB concludes that the project recognizes, respects, and promotes the protection of the rights of farming communities and customary rights holders, in alignment with applicable international human rights law through placing proper governing policies.^{/09/}

3.3.3.3 Indigenous Peoples and Cultural Heritage

Risk identified	Evidence gathering activities, evidence checked, and assessment conclusion
No risk was identified for Indigenous Peoples and Cultural Heritage	VVB has used following measures in order to confirm no risk has been caused to Indigenous Peoples and Cultural Heritage: 1. Review of governing policies^{/09/} 2. Review of SOPs^{/06/} 3. Review of farmer's agreements^{/05/} 4. Onsite interviews^{/i1-i22/} Based on the above observations VVB confirms that the project staff, partners, and other stakeholders have received cultural sensitivity training to promote respect and knowledge of the customs, beliefs, and practices of the local community. Moreover, PP has also developed guidelines and protocols to ensure that project operations are conducted in such a way that it doesn't impede cultural customs and sensitive locations in the project area. Therefore, VVB concludes that no risk to Indigenous Peoples and Cultural Heritage has been identified due to project implementation.

3.3.3.4 Property Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
Rights to territories and resources were identified as possible risk under property rights	VVB based on the review of Farmer agreements ^{/05/} and land records ^{/17/} confirms that project has been implemented in the private farmland which has clear title rights of the local farmers from the local stakeholder community. The property rights and resources right go to landowner of plantation areas. The legal documents of land right are available with each farmer which justify the real ownership.
Respect for property rights	Based on the review of VCS PDMR ^{/01/} , Farmer's agreements ^{/05/} and onsite interviews ^{/i1-i22/} VVB confirms that the property and land use rights of local stakeholders have been fully respected, and free, prior, and informed consent has been obtained from enrolled farmers through this agreement.

3.3.3.5 Benefit Sharing

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Process used to design the benefit sharing plan	VVB based on the onsite interviews ^{/i1-i22/} with the farmers and other stakeholders confirms that the sharing of benefits that will be accrued from this project was decided after conducting discussions during local stakeholder consultations meetings.
Summary of the benefit sharing plan	VVB based on the review of farmer's agreements^{/04/} concludes the following: MFI and Outreach Agreements: As per Clause 4, farmers are entitled to 70% of the total revenue generated from carbon credits after deducting project costs, carbon consultation fees, and other related expenses. Greenmile Agroforestry Private Ltd. Agreements: Clause 5 establishes that 90% of the revenue from carbon credits, after similar deductions, will be allocated to farmers. The agreements mandate that ground implementing partners provide necessary training and technical support to farmers for successful project implementation. Additionally, farmers maintain full ownership over their land, trees, fruits, and produce from the agroforestry systems as stipulated in the agreements.
Approval and dissemination of benefit sharing plan	VVB based on the onsite- interviews ^{/i1-i22/} confirms that the agreements are shared with farming groups during community meetings, ensuring acceptance of all terms by the community. The interested farmers have signed the agreements and were included in the project.
Benefit sharing during the monitoring period	During the current monitoring period farmers have received trainings ^{/19/} and are eligible to sell fruits from the trees. The benefit from carbon credits will be shared once it will be accrued by the PP by sales of carbon credits.

3.3.4 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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Impacts on biodiversity and ecosystems	VVB based on the review of VCS PDMR^{/01/}, SOPs and management manuals^{/06/} and KML files^{/03/} confirms that the project has focused on planting native and naturalized tree species that are well-suited to the agro-ecological zones of these regions, thereby enhancing local biodiversity and ecosystem services. Moreover, the PP has made efforts to avoid the introduction of invasive alien species, ensuring that all planting activities contribute to the preservation and enhancement of the local environment. By emphasizing the use of such species, the project has supported the natural flora and fauna of Andhra Pradesh, Tamil Nadu, and Madhya Pradesh contributing to the resilience and sustainability of local ecosystems. In addition to this GIS analysis^{/03/} to check if any conversion of native ecosystem has taken place has been done by VVB.
Soil degradation and soil erosion	Based on the review of VCS PDMR^{/01/} and onsite inspections^{/i1-i22/}, VVB confirms that the trees planted in the project area will bind the soil, effectively preventing topsoil erosion. Farmers active participation in tree planting, which enhances soil health and contributes to overall environmental improvement. This initiative not only restores ecosystem balance but also boosts soil fertility through the act of planting trees.
Water consumption and stress	It is well-recognized that deep roots play a vital role in increasing soil water availability to crop water use, their ability in regulating the allocation of the crop water use during the growing season would also influence crop yield and water productivity. Thus, VVB confirms that no excess water consumption or stress will occur due to the project implementation.

3.3.4.1 Rare, Threatened, and Endangered species

Risk identified	Evidence gathering activities, evidence checked, and assessment conclusion
Species and habitat	Based on the onsite inspections^{/i1-i22/} and GIS assessment^{/03/} of project's KML files, VVB confirms that project will not adversely impact habitats for rare, threatened, or endangered species and moreover project activities are occurring on the privately owned farm plots^{/17/}, and there no habitats for rare, threatened, or endangered species are present in the project zone.

Areas needed for habitat connectivity	Based on the onsite inspections ^{/i1-i22/} and GIS analysis of project's KML files ^{/03/} , VVB confirms that the project activities will not lead to destruction of areas needed for habitat connectivity.
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3.3.4.2 Introduction of Species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
<i>Mangifera Indica</i>	Based on the review of literature provided^{/22,jj-ll/} VVB confirms that it is the most important commercially grown fruit crop of the country. It is called the king of fruits. India has the richest collection of mango cultivars. Moreover, Mango trees play a crucial role in maintaining soil quality by preventing soil erosion, thereby safeguarding valuable nutrients essential for agricultural productivity. Additionally, the cultivation of mango trees offers farmers a reliable source of income through the sale of their fruit. This not only supports local economies but also provides a sustainable livelihood for families and communities, contributing to long-term economic stability
<i>Pterocarpus santalinus</i>	Based on the review of literature provided^{/22,mm/} VVB confirms that Red Sanders is an endemic species confined to Southern parts of Eastern Ghats of India specially in Andhra Pradesh. Heartwood of Red Sanders has high demand in domestic as well as international market and the wavy grained wood is valued. Along with its extensive use in furniture, the red dye obtained from the wood is used as colouring agent for textile, medicine and food. The heartwood can accumulate various elements and rare earth elements like strontium cadmium, zinc, copper and uranium. Wood has different uses in traditional and folklore medicines and is used for the treatment of diabetes, prickly heat, skin diseases and for various other ailments.

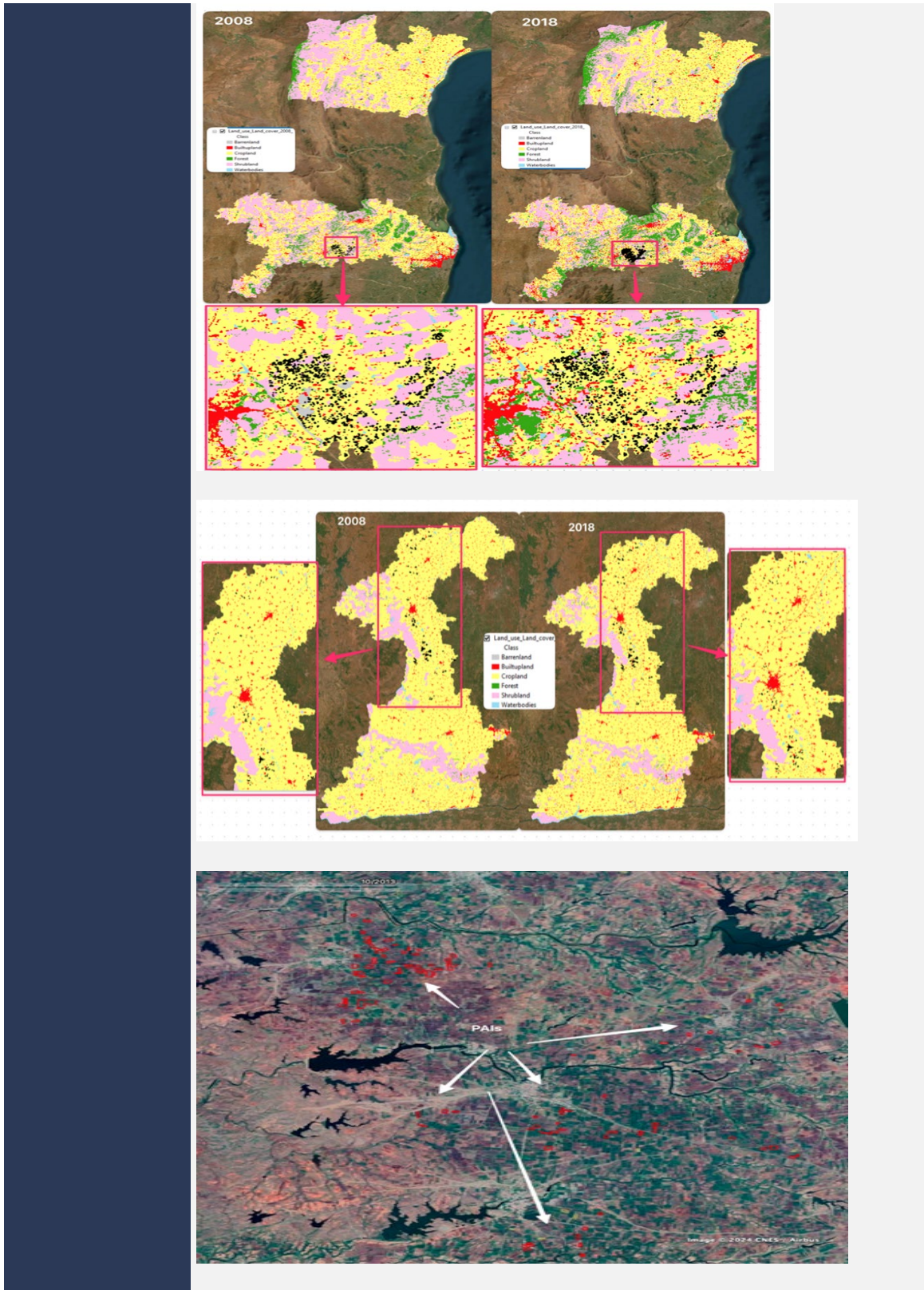
<i>Psidium guajava</i>	Based on the review of cited literature ^{/22, nn-oo/} VVB confirms that although being non-native to India Guava it has covered larger area in the country and often be counted as one of the important fruit crops in India. It has long been used in traditional medicine to treat a myriad of ailments. Guava has been shown to exhibit a number of biological and pharmacological activities, such as antioxidant, anti-inflammatory, immunomodulatory, antimicrobial, antidiabetic, and anticancer properties. Several parts of the plant, including the leaves, fruits, seeds, peels, pulp, bark, and oil, produce phytochemicals with medicinal properties
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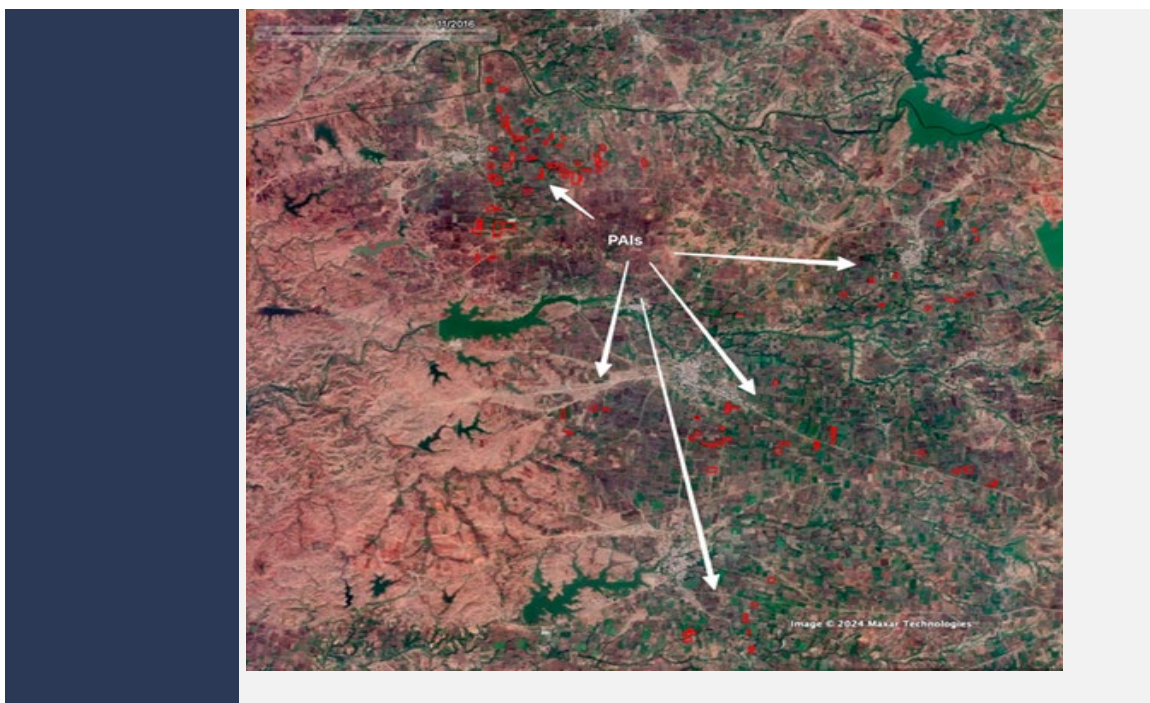
Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
N/A	Based on the onsite inspections ^{/i1-i22/} VVB confirms that no existing invasive are present in the project region

Evidence gathering activities, evidence checked, and assessment conclusion	
Invasive species	Based on the onsite inspections ^{/i1-i22/} , VVB confirms that no invasive species are present in the project region

3.3.4.3 Ecosystem conversion

Risks Identified	Evidence gathering activities and evidence checked
Ecosystem conversion	VVB, based on the on-site inspection^{/i1-i22/} and GIS assessment of project's KML files^{/03/} and land title documents^{/17/} confirms that the plantation activity takes place on farmer's private plots. Therefore, no project activity was undertaken to clear the existing ecosystem. The data from LULC Maps^{/03/}, Forest/Non-Forest Analysis Report^{/03/}, supports the claim of PP of land being agricultural lands before project starts. Please see the figure below for LULC 2008 - 2018 of farms in the project area.





3.4 Application of Methodology

3.4.1 Title and Reference

The project applies the CDM methodology AR-ACM0003 (A/R Large Scale methodology), Afforestation and reforestation project activities implemented on lands other than wetlands, version 3.1^{/B02/}, Sectoral scope 14.

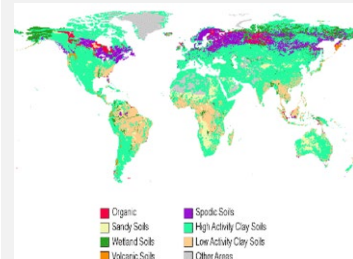
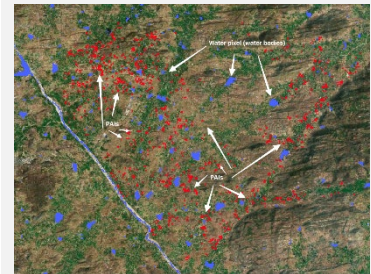
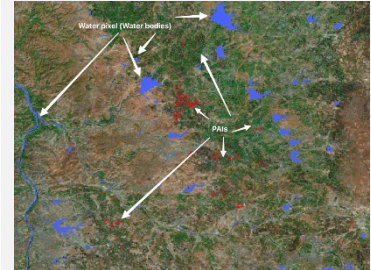
Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	AR-ACM0003	AR-ACM0003: Afforestation and reforestation of lands except wetlands	2.0
Tool	AR-TOOL02	AR-TOOL02: Combined tool to identify the baseline scenario and demonstrate additionally in A/R CDM project activities	1.0
Tool	AR-TOOL03	Calculation of the number of sample plots for measurements within A/R CDM project activities	2.1.0
Tool	AR-TOOL08	Estimation of non-CO2 greenhouse gas (GHG) emissions resulting from burning	4.0.0

		of biomass attributable to an A/R CDM project activity	
Tool	AR-TOOL12	Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities	1.1.0
Tool	AR-TOOL14	Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities	4.1
Tool	AR-TOOL15	Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity	01
Tool	AR-TOOL16	Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities	1.1.0
Tool	AR-TOOL19	Demonstration of eligibility of lands for A/R CDM project activities	2.0
Tool	NA	VCS AFOLU Non-Permanence Risk Tool (Version 4.0)	4.2

3.4.2 Applicability

Methodology ID	Applicability condition	Assessment and conclusion
AR-ACM0003	1. The land subject to the project activity does not fall in the wetland category. 2. Soil disturbance attributable to the project activity does not cover more than 10 per cent of area in each of the following types of land, when these lands are included within the project boundary:	VVB based on the GIS assessment of project's KML files & forestry and non-forestry analysis report ^{03/} confirms that the project activity doesn't take place on wetlands.

- i) Land containing organic soils
- ii) Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to this methodology.



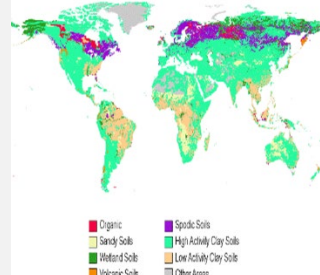
Based on the review of supporting document and independent assessment (above figure) confirms that the 1st PAI area does not include organic soils.

Moreover, the pit size is fixed at 0.3 x 0.3m with plantation density less than 1666 plants/ha. So, the calculated soil disturbance from the project is $149.94m^2 = 1.5\%$ which is less than 10%.

Based on the above assessments VVB concludes that the applicability conditions of

		the methodology have been satisfactorily met. Hence AR-ACM0003 is applicable to the project.
AR-TOOL02	1. Forestation of the land within the proposed project boundary performed with or without being registered as the A/R CDM project activity shall not lead to violation of any applicable law even if the law is not enforced. This tool is not applicable to small-scale afforestation and reforestation project activities	VVB based on the review of National Forest policies and laws ^{/24/} confirms that the project activity doesn't leads to violation of any National laws in the host country. The project scale is a small scale afforestation and reforestation project. It is a grouped project and will be implemented over 4000 ha.
AR-TOOL03	This tool has no internal applicability conditions.	VVB confirms that the tool has no internal applicability conditions.
AR-TOOL08	1. The tool is applicable to all occurrence of fire within the project boundary. Non-CO ₂ GHG emissions resulting from any occurrence of fire within the project boundary shall be accounted for each incidence of fire which affects an area greater than the minimum threshold area reported by the host Party for the purpose of defining forest, provided that the accumulated area affected by such fires in a given year is ≥5% of the project area.	VVB based on the review of fire assessment ^{/04-v-a/} as provided in NPRR under natural risk confirms that no loss due to fire is reported in the project area. Moreover, the management plan ^{/06/} puts forward measures to for fire precautions.

AR-TOOL12	This tool has no internal applicability conditions	VVB confirms that the tool has no internal applicability conditions
AR-TOOL14	This tool has no internal applicability conditions.	VVB confirms that the tool has no internal applicability conditions
AR-TOOL15	This tool is not applicable if the displacement of agricultural activities is expected to cause, directly or indirectly, any drainage of wetlands or peat lands.	Based on the onsite inspections ^{/11-i22/} and GIS assessment of the project's KML files ^{/03/} , VVB confirms that the project area is not located within wetlands and is not causing drainage of peatlands directly or indirectly.
AR-TOOL16	1. The areas of land to which this tool is applied: I. Do not fall into the wetland category II. Do not contain organic soil as defined in "Annexure A: glossary" of the IPCC GPG LULUCF 2003 III. Are not subject to any of the land management practices and application of inputs as listed in the Tables 1 and 2 2. The A/R CDM project activity meets the following conditions: I. Litter remains on site and is not removed in the A/R CDM project activity II. Soil disturbance is attributable to the A/R	1) Based on GIS assessment of project KML files & Forest and non-forest analysis report^{/03/}, VVB confirms that Project lands are not wetlands or peatlands (see above attached figures). 2) Moreover, the soil present in the project area are red soil, black soil, deltaic alluvial soils, coastal alluvial soils, laterite soil and skeletal soils^{/23-r,v,y/}. Such lands under tropical conditions have less carbon compared to plantations and forest coverRefer to the figure below:

	CDM project activity, if any 3. In accordance with appropriate soil conservation practices, e.g., follows the land contours Limited to soil disturbance for site preparation before planting and such disturbance is not repeated in less than twenty years.	 The lands of Table 1 in AR-CDM tool 16 refer to agricultural land in which soil disturbance is restricted. Project area does not classify as land listed in Table 1. The lands of Table 2 in AR-CDM tool 16 refer to grassland in which soil disturbance is restricted. There are no grasslands in the project area with the use of any inputs. Therefore, the project area is not classified as land listed in Table 2 in AR-CDM tool 16. According to the SOPs^{/06/} the litter will not be removed from the ground. Soil disturbances are limited to site preparation (digging holes to plant seedlings) in the project. There is no soil disturbance after the project activity implementation.
AR-CDM Tool19	This tool has no internal applicability conditions	N/A

3.4.3 Project Boundary

Source		Gas	Included?	Assessment and conclusion
Baseline	Above Ground Biomass	CO ₂	Yes	Based on the on-site inspection ^{/i1-i22/} , remote sensing & GIS ^{/03/} and Forest/non-forest analysis report ^{t/07/} , VVB confirms that carbon stock in this pool is expected to increase due to the implementation of the project activity
		CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that pre-existing vegetation is not slashed nor burned.
		N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that pre-existing vegetation is not slashed nor burned.
		Other	N/A	-
	Below Ground Biomass	CO ₂	Yes	Based on the on-site inspection ^{/i1-i22/} , remote sensing & GIS ^{/03/} and Forest/non-forest analysis report ^{t/07/} , VVB confirms that carbon stock in this pool is expected to increase due to the implementation of the project activity
		CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that pre-existing vegetation is not slashed nor burned.
		N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that pre-existing vegetation is not slashed nor burned.
		Other	N/A	-
	Soil Organic Carbon	CO ₂	Yes	Based on the review of VCS PDMR ^{/01/} and ER sheets ^{/02/} VVB confirms that this pool is included in the project.
		CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.

Source		Gas	Included?	Assessment and conclusion
Project	Litter	Other	N/A	-
		CO ₂	Yes	Based on the on-site inspection ^{/i1-i22/} , remote sensing & GIS ^{/03/} and Forest/non-forest analysis report ^{/07/} , VVB confirms that carbon stock in this pool is expected to increase due to the implementation of the project activity.
		CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	Dead wood	Other	N/A	-
		CO ₂	Yes	VVB based on the onsite inspections ^{/i1-i22/} , confirms that the carbon stock in this pool is expected to increase in the baseline if trees are present there in the baseline.
		CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A	-
	Above ground biomass	CO ₂	Yes	Based on onsite inspection ^{/i1-i22/} , VVB confirms that this corresponds to the largest carbon reservoir subject to the project activity. Carbon stock in this pool is expected to increase due to the implementation of the project activity. Carbon sequestration in the form of Above ground biomass has been calculated using AR-CDM TOOL14 "Estimation of carbon stocks and

Source	Gas	Included?	Assessment and conclusion
			change in carbon stocks of trees and shrubs in A/R CDM project activities”.
	CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	Other	N/A	-
	Below ground biomass	CO ₂	Based on onsite inspection ^{/i1-i22/} , VVB confirms Carbon stock in this pool is expected to increase due to the implementation of the project activity. Carbon stock is calculated using AR-CDM TOOL14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities” which suggest using the root shoot ratio for the calculation of below ground biomass.
		CH ₄	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N ₂ O	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A
	Soil Organic Carbon	CO ₂	Based on onsite inspection ^{/i1-i22/} , VVB confirms Carbon stock in this pool is expected to increase due to the implementation of the project activity. Soil organic carbon increase in the project has been calculated using the default method given in AR-CDM TOOL16 “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”.

Source	Gas	Included?	Assessment and conclusion	
	CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.	
	N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.	
	Other	N/A	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.	
	Litter	CO ₂	Yes	Based on the on-site inspection ^{/i1-i22/} VVB confirms that Carbon stock in this pool is expected to increase due to the implementation of the project activity. Increase in the litter biomass in the project has been calculated using the default method given in AR-CDM TOOL12 “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”.
	CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.	
	N ₂ O	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored.	
	Other	N/A	-	

Source		Gas	Included?	Assessment and conclusion
	Dead wood	CO ₂	Yes	Based on onsite inspection ^{/i1-i22/} , VVB confirms that the Carbon stock in this pool is expected to increase due to the implementation of the project activity. Increase in the dead wood biomass in the project has been calculated using the default method given in AR-CDM TOOL12 “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities” ³
		CH ₄	No	Based on the on-site inspection ^{/i1-i22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored
		N ₂ O	No	Based on the on-site inspection ^{/i-01-i-22/} , VVB confirms that the GHG emissions in the baseline can be conservatively ignored
		Other	N/A	-

Source	Gas	Included?	Justification/Explanation
Burning of woody biomass	CO ₂	No	VVB based on the review of management plan ^{/06/} and onsite interviews confirms that there is no burning of woody biomass for the site preparation or as part of forest management.
	CH ₄	No	
	N ₂ O	No	

VVB confirms that the project boundary and selected sources, sinks and reservoirs and their justification of inclusion and exclusion is valid and in compliance with the applied methodology^{/B02/}.

3.4.4 Baseline Scenario

PP has identified the baseline scenario in accordance with AR-AM Tool 02, “Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality in A/R CDM Project Activities” (Version 1), as referenced in VCS PDMR^{/01/}.

PP has appropriately demonstrated the following through GIS files and Forest and Non-forest analysis report and also developed SOP for eligibility requirements for land parcels to be part of the grouped activity which is as follows:

- ✓ No native forest for the past 10 years prior to the plantation date
- ✓ No wetland
- ✓ No organic soils

The First Project Activity Instance covers a total of 894.06 hectares of small land parcels across three states. In Andhra Pradesh, the primary crops cultivated are cotton, ground nuts, pigeon pea, sunflower, black gram, and sorghum. In Tamil Nadu, common crops include cotton, groundnut, mungbean, curdbean, and sugarcane. In Madhya Pradesh, the predominant crops are soybean, wheat, chickpea, and cotton.

On the basis of onsite inspection^{/i1-i22/} and review of KML Files ^{/03/P} has identified the baseline scenario as degraded lands used for agriculture. As per PRA Report^{/15/}, onsite inspection and farmer interviews^{/i1-i22/}, the main causes of degradation include excessive use of synthetic fertilizers and pesticides, water scarcity, and poor land management practices. Additionally, constraints faced by farmers—such as low productivity, soil erosion, water scarcity, and salination—have further contributed to declining land productivity. The PRA survey report^{/15/} indicates that, due to the absence of efficient and profitable alternatives, farmers continue to rely on low productivity farming lands, driving their interest in carbon credit programs. The survey also confirms that baseline land use practices (agriculture/long-term cultivated cropland) have been in place for the past 10 years.

Based on the above observations, VVB confirms that the identified baseline scenario—degraded lands used for agriculture—is appropriate for the project. The evidence reviewed^{/15/03/23-00-ww/} has been found valid, appropriate, and satisfactory to VVB.

3.4.5 Additionality

The demonstration and assessment of the additionality of the project is made in accordance with the applied AR-CDM tool 02 “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities” version 01 by the PP.

Regulatory

Surplus

VVB assessed whether the project activities are mandated by any national, state, or local law or regulation applicable within the revised grouped project boundary, comprising the states of Andhra Pradesh, Tamil Nadu, and Madhya Pradesh (India).

The assessment was conducted based on:

Review of applicable national and state-level laws and policies (Section 3.1),

Review of project documentation including the VCS PDMR, Monitoring Plans, SOPs, and farmer agreements,

On-site inspections and interviews with participating farmers (/i1–i22/),

GIS and KML-based verification of project locations (/03/),

Application of host country legal and sectoral expertise.

The project involves the voluntary establishment and maintenance of agroforestry systems through plantation of Mango, Red Sander, and Guava trees on privately owned agricultural lands. Land ownership was verified through land records and signed agreements ^{/05/} during on-site inspections, confirming that:

- All project areas are private agricultural lands, and
- No project activities take place on reserved, protected, village, or notified forest lands.

Assessment of national legislation

VVB reviewed the **Indian Forest Act (1927)**, **Forest Conservation Act (1980)**, **National Forest Policy (1988)**, and **Forest Rights Act (2006)**. The assessment confirms that:

- These instruments regulate forest land, forest produce, and forest rights but **do not mandate tree planting, agroforestry, or carbon-oriented land-use practices on private agricultural lands**.
- The Forest Conservation Act (1980) restricts diversion of forest land; however, the project does not involve any diversion of forest land, as confirmed through land records and GIS analysis (/03/).
- The Forest Rights Act (2006) safeguards community and individual forest rights; the project does not affect forest land or forest-dependent communities, and credit rights are contractually assigned through farmer agreements (/15/).

Accordingly, **no national law requires landholders to implement the project activity**, and compliance with these laws does not imply regulatory obligation.

Assessment of state-level legislation

VVB further reviewed relevant **state forest acts and forest policies** applicable to Andhra Pradesh, Tamil Nadu, and Madhya Pradesh, including:

- Andhra Pradesh Forest Act (1967) and Amendment Act (2016),
- Tamil Nadu Preservation of Private Forest Act (1949),
- Tamil Nadu Forest Act (1882),
- Tamil Nadu Hill Areas (Preservation of Trees) Act (1955),
- Wildlife (Transit) (Tamil Nadu) Rules (1991),

- Tamil Nadu Forest Policy (2018),
- Madhya Pradesh State Forest Policy (2005).

Based on document review, GIS analysis, and on-site verification, the VVB confirms that:

- These laws regulate protection, felling, transport, and conservation of trees and forests but **do not mandate tree plantation or agroforestry on private agricultural lands**.
- The project does not involve prohibited activities such as forest clearing, illegal felling, land encroachment, or ecosystem conversion.
- Tree planting under the project is **permitted but voluntary**, and undertaken at the discretion of participating farmers.

Differences in state-level implementation do not alter the conclusion that **none of the reviewed state instruments impose a legal requirement to implement the project activity**.

Based on the above assessment, the VVB confirms that:

- The project activity is **not mandated by any national, state, or local law or regulation** applicable within Andhra Pradesh, Tamil Nadu, or Madhya Pradesh;
- Existing laws and policies **allow and regulate** agroforestry activities but do not require their implementation;
- The project is implemented in **India, a UNFCCC Non-Annex I country**, and therefore satisfies the regulatory surplus requirement under the VCS Program.

Accordingly, the VVB concludes that the project activity demonstrates **regulatory surplus** across the entire revised grouped project boundary.

STEP 0. Preliminary screening based on the starting date of the A/R project activity

The planting activity was conducted from 1st March 2018, as confirmed by the evidence provided^{/10/} which is before the registration date and after 31 December 1999. In accordance with paragraph 7, point 2 of AR-TOOL02 v1, VVB reviewed documentary evidence available prior to the start date to confirm that the incentive from the planned sale of VCUs was seriously considered in the decision to proceed with the project activity. PP has submitted additional documentary evidence demonstrating that the incentive from the planned sale of VCUs was considered prior to the project start date.

The evidence provided includes:

- Local Stakeholder Consultation (LSC)^{/07/} invitation letter^{/07/} and Minutes of Meeting^{/07/}, both dated prior to the commencement of project implementation.
- Board of Directors meeting minutes^{/05/} from the Mangrove Foundation of India, dated prior to the project start date, documenting discussions relating to carbon finance, carbon project implementation, and anticipated revenue from the sale of VCUs.

VVB has reviewed the submitted documents^{/05/07/} and confirms that both records clearly pre-date the project start date^{/10/} and explicitly reference considerations related to carbon

finance. These documents qualify as *official and corporate evidence* as required by paragraph 7 of CDM AR-TOOL02 and are therefore considered valid sources demonstrating that carbon revenue was taken into account prior to project initiation. Furthermore, during the farmer interviews^{/11-i22/}, the information was cross checked and it was verified that the farmers are aware of the incentives. Furthermore, VVB reviewed the signed contractual agreements between project implementers and participating farmers, which stated that proceeds from carbon credit sales will be shared with farmers. Although these agreements were executed around the project implementation period, they corroborate that carbon revenue considerations were integral to the project's financial and operational framework.

Based on the above assessment, VV Team concludes that the evidence provided is valid and confirms that the PP appropriately considered the sale of VCU as an incentive prior to starting the project activity. VV Team further confirms the intent of the PP and implementation partners in the implementation of the project activity and compliance with the CDM AR-TOOL02 requirements..

GIS assessment for the parcels^{/03/} included in the project was also conducted by VVB for the last 10 years.

Land titles^{/17/} have also been verified by the VVB during the onsite inspection.

STEP 1. Identification of alternative scenarios

Sub-step 1a. Identify credible alternative land use scenarios to the proposed project activity

Two alternative land use scenarios identified by the PP were:

- Alternative Land Use Scenario A - Continuation of the pre-project land use
- Alternative Land Use Scenario B - Plantation activity without being registered as A/R VCS project

Sub-step 1b. Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations

VVB has reviewed the applicable legal and regulatory requirements^{/24/} in the project area and confirms that both the identified alternative land use scenarios are compliant with the applicable laws and regulations.

Output Sub Step-1b: List of Alternatives that are compliant with Law and Regulation

The proposed project activity is "Plantation activity by the MFI, Greenmile Agroforestry Private Limited and Outreach Projects Pvt. Ltd. being registered as the A/R project activity."

Following have been identified as the alternative land use scenario for the proposed activity:

- i) Continuation of the pre-project land use
- ii) Plantation activity without being registered as A/R VCS project

Step 2: Barrier analysis

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios

Based on the review of the latest VCS PDMR^{/01/}, PP has identified three principal barriers—investment, technological, and social—that would prevent the implementation of plantation activity without carbon-finance support on degraded agricultural lands across Andhra Pradesh, Tamil Nadu, and Madhya Pradesh.

i. Investment barriers

The PDMR presents that small and marginal farmers in the project region face significant financial constraints, with limited access to institutional credit and high levels of indebtedness. Data from the NSS 77th Round (2019) show average outstanding loans per agricultural household ranging from ₹74 420 to ₹245 554, and indebtedness rates of 48 – 93 %.

Independent literature reviewed by the VVB confirms these findings. *CESS Working Paper 133 (Galab & Prudhvikar, 2020)* documents chronic rural indebtedness exceeding 90 % in Andhra Pradesh; *Factors Affecting Loan Default and Repayment on Tribal Households in Andhra Pradesh (2016 article 634-43.pdf)* reports limited credit access and reliance on informal lenders. *Agroforestry and Opportunities in Value Addition.pdf* and *Policy and Financial Support for Agroforestry Development* show the absence of long-term finance and insurance mechanisms for tree-based systems in Tamil Nadu, while *Dhakad (2025) JSRR129897.pdf* highlights that high establishment costs and delayed returns discourage investment in Madhya Pradesh.

VVB confirms that high upfront costs, limited institutional finance, and long gestation periods constitute substantial investment barriers to the implementation of the project activity without carbon finance.

ii. Technological barriers

The PDMR identifies limited access to quality planting material and inadequate technical capacity as key constraints. Farmers face difficulties sourcing improved, high-yielding, or climate-resilient species, resulting in low plantation success rates.

VVB's independent review corroborates this conclusion. *14IJEAB-107202218-Trees.pdf* and *Trends and Insights of Agroforestry Practices in Madhya Pradesh (ResearchGate)*

emphasize the shortage of quality seedlings and nursery infrastructure. *Agroforestry System Adopted by Farmers of Hoshangabad District of Madhya Pradesh (2015 article 623-45.pdf)* identifies limited extension services and weak access to improved clones or grafts. *Agroforestry in India: Overcoming Challenges to Build a Greener Tomorrow* and the *FAO Training Manual (2024, Economic Considerations)* note that only ~10 % of planting stock nationally meets quality standards, with minimal farmer awareness of silvicultural practices. Accordingly, VVB concludes that technological barriers are well supported by independent, peer-reviewed evidence and conservatively interpreted in the PDMR

iii. Social barriers

The PDMR identifies social barriers related to demographic pressure on land, labour scarcity, and low awareness of agroforestry benefits. Land fragmentation and competing livelihood needs discourage long-term plantation commitments.

Supporting studies—including *Dhakad (2025) JSRR129897.pdf*, *Agroforestry System Adopted by Farmers of Hoshangabad District of Madhya Pradesh (2015 article 623-45.pdf)*, and *14IJEAB-107202218-Trees.pdf*—confirm that shrinking landholdings, migration, and shortage of skilled labour constrain adoption. *CESS Working Paper 133* further notes that smallholders in Andhra Pradesh prioritise short-term income generation over long-rotation tree crops.

VVB therefore confirms that the social barriers outlined by the Proponent are substantiated by multiple independent data sources.

VVB reviewed national and state-level agroforestry and tree-planting incentive frameworks applicable in the three states. The assessment confirms that, across Andhra Pradesh, Tamil Nadu, and Madhya Pradesh, available incentives are limited in scope, largely restricted to initial establishment support, and do not provide long-term financial security, maintenance support, or risk-mitigation mechanisms.

Independent policy analyses confirm that, despite the existence of the National Agroforestry Policy, implementation remains uneven across states, and structural gaps persist in access to finance, extension services, market linkages, and institutional coordination. These limitations prevent policy instruments from removing financial and investment barriers to agroforestry adoption. (Source: National Agroforestry Policy in India – A Low Hanging Fruit- https://www.researchgate.net/publication/281363272_National_Agroforestry_Policy_in_India_A_low_hanging_fruit)

Climatic, biophysical, and environmental conditions

VVB assessed agro-ecological variability across the three states, including rainfall regimes, soil characteristics, and tree–crop interactions. While climatic and biophysical conditions vary regionally, the assessment confirms that such variability does not eliminate the identified barriers. On the contrary, environmental heterogeneity increases production risk, uncertainty of yields, and survival risks, thereby reinforcing barriers to adoption.

Peer-reviewed literature identifies climatic variability, biophysical constraints, long gestation periods, and technical limitations as persistent challenges to agroforestry adoption across India, irrespective of regional differences. (Source: Agroforestry systems: Opportunities and challenges in India)-
https://www.researchgate.net/publication/337167646_Agroforestry_systems_Opportunities_and_challenges_in_India

VVB confirms that the same categories of barriers identified for the initial PAI remain applicable across Andhra Pradesh, Tamil Nadu, and Madhya Pradesh, including:

Lack of long-term financial viability without carbon revenues,

exposure to climatic and biophysical risks,

limited access to quality planting material and sustained extension support,

absence of long-term institutional support mechanisms.

Eligibility criteria for inclusion of future project activity instances ensure that only land parcels exhibiting comparable or more conservative conditions relative to the initial PAI are included.

Based on the state-wise assessment and corroborated by independent literature, VVB concludes that variations in incentives and climatic, biophysical, and environmental conditions do not undermine the applicability of the barrier analysis. The same barriers persist across the revised grouped project boundary, consistent with those identified for the initial project instance..

Outcome of Step 2a: Based on the review of evidence provided VVB confirms that the following two barriers may prevent land use scenarios identified in Step 1b:

- 1) Investment Barriers
- 2) Technological Barriers
- 3) Social Barriers

Sub-step 2b: Elimination of land use scenarios (in step 2a) that are prevented by the identified barriers:

Plantation activity without being registered as A/R VCS project is the land use scenario which will be prevented by the identified barriers. Additionally, the only alternative scenario not prevented by any barrier is the scenario “The continuation of the pre-project land use (degrading agriculture with low productivity) is not prevented by any barrier and remains the only feasible alternative. In accordance with the applied tool this alternative scenario is identified as the baseline scenario

Sub-step 2c. Determination of baseline scenario

As the and use scenario that is not prevented by any identified barrier is “continuation of the pre-project land use”, Investment Analysis is not needed. Therefore, according to the decision tree of sub step 2c of the combined tool, it is concluded that Land Use Scenario A, Continuation of pre project land use, is the baseline scenario.

STEP 3. Investment analysis

Not applicable.

STEP 4. Common practice analysis

In response to Verra’s observation regarding variability in the implementation of India’s agroforestry policy across different states, the VVB further assessed whether agroforestry constitutes a uniform baseline common practice across Andhra Pradesh, Tamil Nadu, and Madhya Pradesh, beyond the existence of national policy instruments.

National-level analyses confirm that agroforestry adoption in India is **heterogeneous and state-dependent**, influenced by local agro-ecological conditions, institutional facilitation, market access, and farmer awareness rather than national policy alone. Independent research indicates that while agroforestry area has increased at the national level, **relative adoption intensity and system prevalence vary substantially across states** (CEEW, 2020):

<https://www.ceew.in/publications/agroforestry-india>

State-Specific Evidence of Variability

In **Madhya Pradesh**, field-based and peer-reviewed studies document a **diversity of agroforestry systems and adoption drivers** at the district level, including variations in species choice, rotation lengths, and farmer motivations. These studies indicate that adoption is driven by **localized production decisions** rather than widespread baseline practice across the state (Dhakad et al., 2025; ICAR publications):
https://www.researchgate.net/publication/335432624_Trends_and_Insights_of_Agroforestry_Practices_in_Madhya_Pradesh_India

<https://epubs.icar.org.in/index.php/IJA/article/view/173156>

In **Tamil Nadu**, agroforestry models have been promoted through institutional initiatives such as the **All India Coordinated Research Project on Agroforestry (AICRP)**. However, research and policy reviews indicate **uneven uptake across districts** and continued reliance on targeted extension support, confirming that agroforestry has **not diffused uniformly as baseline practice** across the state:
<https://cafri.res.in/wp-content/uploads/Agroforestry-Policy-with-Way-Forward.pdf>
https://icar.gov.in/sites/default/files/Agroforestry_Models_TN.pdf

For **Andhra Pradesh**, although comprehensive peer-reviewed adoption studies are limited, national datasets and regional market analyses indicate **variable adoption levels influenced by access to quality planting material, institutional facilitation, and farmer awareness**, consistent with broader trends observed in southern India: <https://www.credenceresearch.com/report/india-agroforestry-market>
https://fsi.nic.in/uploads/isfr2023/isfr_book_eng-vol-1_2023.pdf

While schemes such as **SMAF** are implemented across multiple states, their **effectiveness and farmer uptake differ significantly** depending on state-level regulatory facilitation (e.g., tree transit rules), extension capacity, and administrative reach. This further reinforces the conclusion that agroforestry cannot be assumed as a **homogeneous baseline practice** across the revised geographic boundary: https://agricoop.nic.in/sites/default/files/Sub-Mission_on_Agroforestry_SMAF_Guidelines.pdf
<https://treekisan.com/2024/06/01/schemes-for-agro-forestry-in-india-2024/>

Based on the above state-specific evidence, corroborated by national statistics (ISFR 2021, 2023), peer-reviewed literature, and the VVB's independent review of project documentation and site inspection records (/i1–i22/), the VVB confirms that:

- Agroforestry adoption across Andhra Pradesh, Tamil Nadu, and Madhya Pradesh is **heterogeneous and context-specific**, and cannot be considered a uniform baseline common practice.
- Despite observed differences in institutional support and adoption drivers, the **baseline land-use scenario across the revised project boundary remains predominantly conventional agriculture**, consistent with conditions observed under the initial project instance (PAI-1).
- The project eligibility criteria ensure inclusion of land parcels exhibiting **comparable or more conservative baseline conditions**, such that state-level variability does not undermine the common practice determination or additionality conclusion.

Accordingly, the VVB confirms that the **common practice analysis adequately accounts for state-specific variability** within the revised geographic boundary and maintains consistency with the requirements of **Step 4 of the Additionality Demonstration Tool**.

Outcome of Step 4

The proposed VCS project activity is not a common practice hence project is additional.

3.4.6 Quantification of GHG Emission Reductions and Carbon Dioxide Removals

Procedures for quantifying the GHG removals generated by the project during the project crediting period were conducted in accordance with the methodology “AR-ACM0003: Afforestation and reforestation of lands except wetlands^{/B02/}”, Version 02.0. VVB has performed review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS documentation, methodology modules, and the VCS PDMR^{/01/}.

VVB during the on-site inspection reproduces the traceability of the values used for the ex-ante and ex-post calculation in the carbon calculation sheet and confirms that no discrepancies have been found in the sheet.

Furthermore, VVB has reproduced calculations^{/03/} for selected samples to ensure accuracy of the results. Conversion factors^{/B05/}, formulas, and calculations were provided by the PP in spreadsheet^{/03/} format to ensure all formulas were accessible for review. VVB has recalculated subsets of the analysis to confirm correctness. Where applicable, references for analysis methods or default values were checked against relevant scientific literature for best practice. The net anthropogenic GHG removals by sinks has been calculated as follows:

The baseline net GHG removals by sinks shall be calculated according to the A/R Large-scale Consolidated Methodology - Afforestation and reforestation of lands except wetlands version 2.0, (sectorial scope 14) as follows –

Baseline Emissions

The baseline net GHG removals by sinks shall be calculated as follows (equation 1 of AR-ACM0003 methodology)::

$$C_{BSL,t} = C_{TREE_BSL,t} + C_{SHRUB_BSL,t} + C_{DW_BSL,t} + C_{LI_BSL,t}$$

Where:

$C_{BSL,t}$ = Baseline net GHG removals by sinks in year t; t CO₂-e

$C_{TREE_BSL,t}$ = Change in carbon stock in baseline tree biomass within the project boundary in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂-e

$C_{SHRUB_BSL,t}$ = Change in carbon stock in baseline shrub biomass within the project boundary, in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂-e

$C_{DW_BSL,t}$ = Change in carbon stock in baseline dead wood biomass within the project boundary, in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

$C_{LI_BSL,t}$ = Change in carbon stock in baseline litter biomass within the project boundary, in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

The baseline emissions estimation is carried out using the A/R Methodological AR-TOOL 14 “*Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities Version 04.2.*”

In accordance with the AR-TOOL 14, VVB confirms that the carbon stock in trees in the baseline can be accounted as zero as all of the following conditions are satisfactorily met by the project.

- 1) The Baseline trees are neither harvested, nor cleared, nor removed throughout the crediting period of the Project activity.

VVB based on review of VCS PDMR^{/01/}, monitoring plan^{/06/} and onsite inspection/interviews^{/i1-i22/} confirms that the trees in baseline were not harvested, nor cleared and nor removed throughout the crediting period of the Project activity.

- 2) The Baseline trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the Project activity, at any time during the crediting period of the project activity.

Based on the onsite inspections^{/i1-i22/}, VVB confirms that the plantation near baseline trees’ vicinity is avoided. Thus, there is no chance of suffering mortality because of competition from trees planted or damage because of implementation of project activity during the crediting period.

- 3) The Baseline trees are not inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the Project activity.

VVB based on the review of VCS PDMR, Management manual^{/06/} and onsite inspection/interviews with the management team^{/i1-i22/} confirms that the stakeholders are advised of the regular monitoring of the baseline trees to ensure that any issues impacting are promptly identified and addressed.

The VVB has reviewed the KML files and the Forest/Non-Forest Analysis Report and confirms that the lands where the proposed activities are implemented are classified as degraded agricultural lands, with no existing forest cover within the project plots. While a few scattered baseline trees are present, these do not meet the definition of a forest. PP has established SOPs to ensure that any baseline trees will be managed in accordance with the requirements outlined in Section 11 of CDM AR-Tool14. Therefore,

the approach of considering the baseline carbon stock as zero is deemed valid and appropriate.

$$C_{TREE_BSL,t} = 0$$

- 4) $\Delta C_{SHRUB_BSL,t}$ conservatively can be assumed to be zero in the baseline scenario, due to the fact that changes in carbon stock of above and below ground biomass of non-tree vegetation of the degraded land in baseline scenario is not possible.
- 5) Also $\Delta C_{DW_BSL,t}$ and $\Delta C_{LI_BSL,t}$ can be assumed to be zero due to the fact that the baseline scenario was degraded land, which did not allow accumulation of dead wood and litter in the absence of trees/shrubs.

In line with the VCS PDMR, carbon stocks in deadwood and leaf litter are considered zero, as the baseline scenario represents degraded agricultural land where farmers primarily engaged in crop cultivation, with trees not being a part of traditional farming practices. Furthermore, baseline land management involved continuous removal and clearing of crop residues and other biomass, preventing the accumulation of deadwood and litter. This has been confirmed through the review of project SOPs and the project management plan. As noted in the section above, only a few scattered trees are present within the project plots, and the PP has demonstrated compliance with the conditions outlined in Paragraph 11 of CDM AR-Tool14. Therefore, the exclusion of deadwood and leaf litter in the baseline scenario is considered valid and acceptable by the VVB.

Based on the above observations VVB affirms that the estimated baseline emissions or removals can be considered insignificant and can be accounted as zero.

$$\Delta C_{TREE_BSL,t} = 0$$

Project Emissions

The actual net GHG removals by sinks are estimated using the equation 2 of the methodology AR ACM0003 (Version 02.0).

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t} \quad \text{Equation (2)}$$

Where:

$\Delta C_{ACTUAL,t}$ = Annual actual net GHG removals by sinks at time t; t CO₂-e yr⁻¹

$\Delta C_{P,t}$ = Change in carbon stocks in project, occurring in the selected carbon pools, at time t; t CO₂-e yr⁻¹

$GHG_{E,t}$ = Increase of non-CO₂ GHG emissions within the project boundary as a result of the implementation of the A/R project activity, in year t; t CO₂-e

As Change in the carbon stocks in project, occurring in the selected carbon pools in year t shall be calculated as follows:

$$\Delta C_{P,t} = \Delta C_{TREE_PROJ,t} + \Delta C_{SHRUB_PROJ,t} + \Delta C_{DW_PROJ,t} + \Delta C_{LI_PROJ,t} + \Delta C_{SOC_AL,t}$$

Where:

$\Delta C_{P,t}$ = Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO₂-e

$\Delta C_{TREE_PROJ,t}$ = Change in carbon stock in tree biomass in project in year t, as estimated in the tool “ Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂-e

$\Delta C_{SHRUB_PROJ,t}$ = Change in carbon stock in shrub biomass in project in year t, as estimated in the tool “ Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂-e

$\Delta C_{DW_PROJ,t}$ = Change in carbon stock in dead wood in project in year t, as estimated in the tool “ Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

$\Delta C_{LI_PROJ,t}$ = Change in carbon stock in litter in project in year t, as estimated in the tool “Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities”; t CO₂-e

$\Delta C_{SOC_AL,t}$ = Change in carbon stock in SOC in project, in year t, in areas of land meeting the applicability conditions of the tool “Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities”, as estimated in the same tool; t CO₂e

Estimation in the changes of carbon stock in tree biomass:

The change in carbons stock in tree biomass was estimated as per the requirements in the methodological tool AR-TOOL 14, “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”, Version 4.2. According to section 8.2 of this tool, this method is used for ex-ante estimation of the carbon stock in tree biomass. Under this method existing data is used in combination with tree growth models to predict the growth and development of trees over time.

Under the method applied (Difference of two independent stock estimations), the change in carbon stock in trees is estimated as the difference between two successive and independent carbon stock estimations.

The change in carbon stock in trees is estimated as follows:

$$\Delta C_{TREE} = C_{TREE,t2} - C_{TREE,t1}$$

Where,

ΔC_{TREE} = Change in carbon stock in trees during the period between two points of time t1 and t2; t CO₂e

$C_{TREE,t1}$ = Carbon stock in trees as estimated at time t1; t CO₂e

$C_{TREE,t2}$ = Carbon stock in trees as estimated at time t₂; t CO₂e

The carbon stock estimation uses the following equation:

$$C_{TREE} = 44/12 * CF_{TREE} \times B_{TREE}$$

Where;

C_{TREE} = Carbon stock in trees in the tree biomass estimation strata; t CO₂e

CF_{TREE} = Carbon fraction of tree biomass; t C (t d.m.)⁻¹. A default value of 0.47 t C (t.d.m.)⁻¹ is used.

B_{TREE} = Tree biomass in the tree biomass estimation strata; t d.m

For estimation of Tree biomass, the following equation is used:

B_{TREE} = AGB (Above Ground Biomass) + BGB (Below Ground Biomass). For BGB Root Shoot Ratio (0.25) default value is used.

For Calculating AGB of the tree following equation where is used-

$$\text{Mango above ground biomass (Y)} = 2.93(X)^{1.22}$$

$$\text{Guava above ground biomass (Y)} = 0.0914 \times CD^{2.4507}$$

$$\text{Red sander volume equation (V)} = \sqrt[3]{V} = -0.144504 + 2.943115 * D$$

Where: X & CD = Collar Diameter

D = Diameter at Breast Height (1.37 m) (meter)

Estimation in the changes in carbon stock in dead wood:

Based on the VCS PDMR^{/01/} and onsite inspections^{/i1-i22/}, VVB confirms deadwood is expected to remain in the project area and will not be removed. Conservatively, it is anticipated that the carbon stock in this pool will increase over the project duration.

As per equation 9, para 34 of the AR-CDM Tool 12 v03.1, For all strata to which the default-factor based method is applied, the carbon stock in dead wood is estimated as:

$$C_{DW,it} = C_{TREE,ii} \times DF_{DW}$$

Where:

$C_{DW,i,t}$ = Carbon stock in dead wood in stratum i at a given point of time in year t; t CO₂e

$C_{TREE,i,t}$ = Carbon stock in trees biomass in stratum i at a point of time in year t, as calculated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂e

DF_{DW} = Conservative default factor expressing carbon stock in dead wood as a percentage of carbon stock in tree biomass; per cent

The increase in carbon stock in deadwood is linked to the tree biomass, as outlined in Table 5 of the AR-CDM Tool 12. According to the data provided in Table 5 of the tool, the deadwood pool is conservatively estimated to be 1% of the tree biomass in the project.

Estimation in the changes in carbon stock in litter:

Based on the VCS PDMR^{/01/} and onsite inspections^{/11-122/}, VVB confirms that litter is expected to remain in the project area and will not be removed. Conservatively, the carbon stock contained in this pool is expected to increase in the project duration For all strata to which the default-factor based method is applied, the carbon stock in dead wood is estimated as:

$$C_{LI,i,t} = C_{TREE,i,t} \times DF_{LI}$$

Where:

$C_{LI,i,t}$ = Carbon stock in litter in stratum i at a given point of time in year t; t CO₂e

$C_{TREE,i,t}$ = Carbon stock in trees biomass in stratum i at a point of time in year t, as calculated in the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”; t CO₂e

DF_{LI} = Conservative default factor expressing carbon stock in litter as a percentage of carbon stock in tree biomass; per cent.

Carbon stock increase in litter is associated with the tree biomass as per the Table 6 of AR-CDM tool 12. According to the data/parameter table no. 6 given in tool, litter pool is conservatively considered 1 % of the tree biomass. To calculate the carbon in the litter pool, , as specified in CDM Tool 12, is used.

Estimation in the changes in carbon stock in soil organic carbon:

The estimation of Soil Organic Carbon (SOC) stocks follows the guidelines provided in the “Tool for the Change in Soil Organic Carbon Stocks in the Project Due to the Implementation of A/R CDM Project Activity.” According to the tool’s guidelines, it is

expected that the project will increase the SOC levels of the land from its baseline to a level that corresponds to the steady-state SOC under native vegetation. This increase in SOC will happen at a constant rate over a 20-year period, starting from the planting year. The project qualifies for the use of this tool because the land areas involved are not categorized as wetlands and do not fall under any land management practices that would prevent the tool's application, as confirmed by the VVB through GIS evaluation of the project's KML files^{/03/}. Based on the onsite inspection^{/11-122/} and the management plan^{/06/}, the VVB verifies that litter will not be removed from the project lands. Additionally, soil disturbance will occur only during the site preparation phase and will not be repeated for the next 20 years.

The initial SOC $SOC_{INITIAL,i}$ at the beginning of the project is calculated by multiplying the reference SOC by the relevant factors given in the table. As outlined by the tool, a loss in SOC $SOC_{LOSS,i}$ would only apply if more than 10% of the land area is disturbed. Since this project does not involve disturbance of more than 10% of the land area, is considered to $SOC_{LOSS,i}$ be zero. The formula used to calculate the annual change in SOC stock is as follows:

$$dSOC_{(i,t)} = SOC_{REF,i} - (SOC_{INITIAL,i} - SOC_{LOSS,i} / (20 \text{ years}))$$

Where:

$dSOC_{i,t}$ = The rate of change in SOC stock in stratum i of the area of land, in year t; tC/ha/year

$SOC_{REF,i}$ = Reference SOC stock corresponding to the reference condition in native lands by climate region and soil types applicable to stratum i of the area of land; tC/ha

$SOC_{INITIAL,i}$ = SOC stock at the beginning of the A/R project activity in stratum i of the areas of land

$SOC_{LOSS,i}$ = Loss of SOC caused by soil disturbance attributable the A/R project activity, in stratum i of the areas of land ; tC/ha

The values of $SOC_{REF,i}$, $f_{LU,i}$, $f_{MG,i}$ and $f_{In,i}$ are taken from the table 3 to 6 of Tool 16 (Tool for the Change in Soil Organic Carbon Stocks Due to the Implementation of A/R CDM Project Activity).

Parameter	Symbol	Value	Source (SOC estimation tool, V01.1.0)
Reference SOC (tC/ha)	$SOC_{REF,i}$	65	Table 3: HACsoils, Tropical Moist
Land use factor	$f_{LU,i}$	0.48	1. Long term Cultivated , Table 4
Management factor	$f_{MG,i}$	1.00	1. Full tillage, Table 4

Input factor	$f_{IN,i}$	1.00	2. Medium , Table 5
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Initial SOC stock at the start of the project is estimated as follows:

$$SOC_{INITIAL,i} = SOC_{REF,i} * f_{LU,i} * f_{MG,i} * f_{IN,i}$$

Where:

$SOC_{INITIAL,i}$ = SOC stock at the beginning of the A/R project activity in stratum i of the areas of land

$SOC_{REF,i}$ = Reference SOC stock corresponding to the reference condition in native lands (i.e. non-degraded, unimproved lands under native vegetation – normally forest) by climate region and soil type applicable to stratum i of the areas of land; t C ha⁻¹

$f_{LU,i}$ = Relative stock change factor for baseline land-use in stratum i of the areas of land; dimensionless

$f_{MG,i}$ = Relative stock change factor for baseline management regime in stratum i of the areas of land; dimensionless

$f_{IN,i}$ = Relative stock change factor for baseline input regime (e.g. crop residue returns, manure) in stratum i of the areas of land; dimensionless

i= 1, 2, 3, ... strata of areas of land; dimensionless

As per the tool 16, $dSOC_{i,t}$ is not considered more than 0.8 t C/ha/year. The result of $dSOC_{i,t}$ is 0.8 t C/ha/year, therefore this is the value of the increase of the soil organic carbon.

Estimation of GHG emissions within the project boundary

Following the methodology and the “tool for non-CO₂ GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity (v04.0.0)” under GHG_{E,t} only the non-CO₂ gases N₂O and NH₄ need to be quantified.

$$GHG_{E,t} = GHG_{SPF,t} + GHG_{FMF,t} + GHG_{FF,t}$$

GHG_{E,t}= Emission of non-CO₂ GHGs resulting from burning of biomass and forest fires within the project boundary in year t; t CO₂-e

GHG_{SPF,t}= Emission of non-CO₂ GHGs resulting from use of fire in site preparation in year t; t CO₂-e

GHG_{FMF,t}= Emission of non-CO₂ GHGs resulting from use of fire to clear the land of harvest residue prior to replanting of the land or other forest management, in year t; t CO₂-e

GHG_{FF,t}= Emission of non-CO₂ GHGs resulting from fire in year t; t CO₂-e

$t = 1, 2, 3, \dots$ years counted from the start of the A/R CDM project activity

Based on the review of Management plan^{06/}, VVB confirms that the project Activity and First Project Activity Instance is not

- I. Using fire for site preparation
- II. Using fire to clear the land of harvest residue prior to replanting of the land
- III. There has been no fire event during the current monitoring period.

Therefore, $GHG_{E,t}$ is zero.

Leakage Emissions

According to the baseline Study, prior to the project implementation, the project area is degraded land with subsistent agriculture, there are no grazing activities, so leakage emission attributable to the displacement of grazing activities is accounted as zero. As p, leakage is estimated as follows:

$$LK_t = LK_{AGRIC,t}$$

Where:

LK_t = GHG emissions due to leakage, in year t ; tCO_{2-e}

$LK_{AGRIC,t}$ = Leakage due to the displacement of agricultural activities in year t , as estimated in the tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity"; tCO_{2-e}

The calculations for leakage are determined through Tool AR0015: Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity, leakage emission resulting from displacement of the activities is composed of decrease in carbon stock in the carbon pools of the land and change in soil organic carbon stock due to land-use change in the land.

$$LK_{AGRIC,t} = (44/12) \times (\Delta C_{BIOMASS,t} + \Delta SOC_{LUC,t})$$

$$\Delta C_{BIOMASS,t} = [1.1 \times b_{TREE} \times (1 + R_{TREE}) + b_{SHRUB} \times (1 + RS)] \times CF \times A_{DISP,t}$$

$$\Delta SOC_{LUC,t} = SOC_{REF} \times (f_{LUP} \times f_{MGP} \times f_{INP} - f_{LUD} \times f_{MGD} \times f_{IND}) \times A_{DISP,t}$$

Where:

$LK_{AGRIC,t}$ = Leakage emission resulting from displacement of agricultural activities in year t ; $t CO_{2e}$ $\Delta C_{BIOMASS,t}$ = Decrease in carbon stock in the carbon pools of the land receiving the activity displaced in year t ; t d.m.

CF = Carbon fraction of woody biomass; dimensionless.

$A_{DISP,t}$ = Area of land from which agricultural activity is being displaced in year t; ha⁻¹.

b_{TREE} = Mean above-ground tree biomass in land receiving the displaced activity; t d.m. ha⁻¹.

R_{TREE} = Root-shoot ratio for trees in the land receiving the displaced activity; dimensionless.

b_{SHRUB} = Mean above-ground shrub biomass in land receiving the displaced activity; t d.m. ha⁻¹. RS = Root-shoot ratio for shrubs in the land receiving the displaced activity; dimensionless. $\Delta SOC_{LUC,t}$ = Change in soil organic carbon (SOC) stock due to land-use change in the land receiving the displaced activity in year t; tC ha⁻¹.

SOC_{REF} = SOC stock corresponding to the reference condition in native lands by climate region and soil type applicable to the land receiving the displaced activity; t C ha⁻¹.

$f_{LUP}, f_{MGP}, f_{INP}$ = Relative SOC stock change factors for land-use, management practices, and inputs respectively, applicable to the receiving land before the displaced activity is received; dimensionless.

$f_{LUD}, f_{MGD}, f_{IND}$ = Relative SOC stock change factors for land-use, management practices, and inputs respectively, applicable to the receiving land after the displaced activity has been received; dimensionless. t = 1, 2, 3 ...years elapsed since the start of the A/R CDM project activity.

In line with VCS PDMR and supporting document, VVB confirms that Land receiving the displaced activity is unidentified, such receiving land being forest land is ruled out because of national regulations. Hence, PP has considered the area receiving the displaced agriculture activities as the shrub land. Since there were no trees in the pre-project scenario, the only insignificant displacement of agriculture activities has been considered as traditional seasonal agriculture practices of crops which are considered in the category of Shrubs.

As per A/R CDM tool 14, Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities,

$b_{SHRUB,i} = BDRSF \times b_{FOREST} \times CCSHRUB,i$

BDRSF = Ratio of shrub biomass per hectare in land having a shrub crown cover of 1.0 (i.e. 100 per cent) and the default above-ground biomass content per hectare in forest in the region/country where the A/R CDM project activity is located, default value of 0.10 is considered

bFOREST= Default above-ground biomass content in forest in the region/country where the A/R CDM project activity is located; t d.m. ha⁻¹, default value of 73 is considered for Forest in India as per table 3A.1.4 of IPCC GPG-LULUCF 2003

CCSHRUB_i= Crown cover of shrubs in shrub biomass estimation stratum i at the time of estimation, expressed as a fraction, default value of 0.5 is considered as per the CDM AR-Tool 14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, version 04.2, para 64, table 2

Rs=Root-shoot ratio for shrubs, default value of 0.40 is considered

Cf=0.47, Carbon Fraction

ADISP, t = Area of land from which agricultural activity is being displaced in year t; ha

(Refer to ex-ante calculation sheet for leakage estimations.)

Estimated GHG Emission Reductions and Carbon Dioxide Removals

The net anthropogenic GHG removals by sinks are calculated as follows in the VCS PDMR^{/01/} and ER sheets^{/02/}, according to the “A/R Large-scale Consolidated Methodology - Afforestation and reforestation of lands except wetlands version 2.0, sectorial scope 14” (equation 5 of AR-ACM0003 methodology):

$$\Delta C_{AR-CDM,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t} - L_{Kt}$$

Where:

$\Delta C_{AR-CDM,t}$ = Net anthropogenic GHG removals by sinks, in year t; tCO_{2-e}

$\Delta C_{ACTUAL,t}$ = Actual net GHG removals by sinks, in year t; tCO_{2-e}

$C_{BSL,t}$ = Baseline net GHG removals by sinks, in year t; tCO_{2-e}

L_{Kt} = GHG emissions due to leakage, in year t; tCO_{2-e}

Since baseline removals and emissions due to leakage were considered zero,

$$L_{Kt} = 0$$

Net anthropogenic removals are expressed according to the formula:

$$\Delta C_{AR-CDM,t} = \Delta C_{ACTUAL,t} - \Delta C_{BSL,t}$$

Project proponent applied a discount reserve of 19% to cover the aspects related to the risk of non-permanence. The complete non-permanence risk analysis can be referred from the non-permanence risk report.

Based on data and parameters monitored detailed under section 6.2 below are the estimated net GHG emission removals for 894.06 of land parcels in First Project Activity Instance.

Calculation of Long-Term Average:

Long Term Average Calculations: for 1st Instance

Long-Term Average (LA) has been calculated by following the VCS Guidelines of Section 3.2.25 of VCS Program Standard v4.4 and AFOLU Guidance: Example for Calculating the Long-Term Average Carbon Stock for ARR Projects with Harvesting

Calculation of LA: According to the standard requirements, for those projects where harvesting practices is contemplated on project activities, the loss of carbon due to harvesting shall be include in the quantification of the project emissions. Due to the project activities contemplating an increment on the project area with different rotation periods per species the long-term average (LA) GHG benefit was calculated as follows according to VCS Standard: Where: LA The long-term average GHG benefit, PE_t = The total to-date GHG emission reductions and removals generated in the project scenario (tCO_2e). Project scenario emission reductions and removals shall also consider project emissions of CO_2 , N_2O , CH_4 and leakage. BE_t = The total to-date GHG emission reductions and removals projected for the baseline scenario (tCO_2e).

Vintage period	Estimated baseline emissions (tCO_2e)	Estimated project emissions (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated buffer pool allocation (tCO_2e)	Estimated reduction VCU (tCO_2e)	Estimated removal VCU (tCO_2e)	Estimated total VCU issuance (tCO_2e)
01-March-2018 to 31-Dec-2018	0	1,284	44	257	0	1,240	984
01-Jan-2019 to 31-Dec-2019	0	3,752	138	750	0	3,614	2,864
01-Jan-2020 to 31-Dec-2020	0	6,393	274	1,279	0	6,120	4,841

01-Jan-2021 to 31-Dec-2021	0	10,117	471	2,023	0	9,646	7,622
01-Jan-2022 to 31-Dec-2022	0	13,115	732	2,623	0	12,384	9,761
01-Jan-2023 to 31-Dec-2023	0	14,627	1,010	2,925	0	13,617	10,692
01-Jan-2024 to 31-Dec-2024	0	13,192	1,290	2,638	0	11,901	9,263
01-Jan-2025 to 31-Dec-2025	0	11,837	1,571	2,367	0	10,266	7,899
01-Jan-2026 to 31-Dec-2026	0	11,888	1,851	2,378	0	10,038	7,660
01-Jan-2027 to 31-Dec-2027	0	11,759	2,131	2,352	0	9,628	7,277
01-Jan-2028 to 31-Dec-2028	0	11,552	2,411	2,310	0	9,141	6,831
01-Jan-2029 to 31-Dec-2029	0	11,414	2,691	2,283	0	8,722	6,440
01-Jan-2030 to 31-Dec-2030	0	11,644	2,971	2,329	0	8,673	6,344
01-Jan-2031 to 31-Dec-2031	0	11,950	3,251	2,390	0	8,699	6,309

01-Jan-2032 to 31-Dec-2032	0	12,396	3,532	2,479	0	8,864	6,385
01-Jan-2033 to 31-Dec-2033	0	9,848	3,812	1,970	0	6,036	4,067
01-Jan-2034 to 31-Dec-2034	0	1,022	4,092	204	0	-3,070	-3,274
01-Jan-2035 to 31-Dec-2035	0	3,930	4,372	786	0	-442	-1,228
01-Jan-2036 to 31-Dec-2036	0	-3,647	4,652	-729	0	-8,299	-7,570
01-Jan-2037 to 31-Dec-2037	0	-3,910	4,932	-782	0	-8,842	-8,060
01-Jan-2038 to 31-Dec-2038	0	12,076	5,212	2,415	0	6,863	4,448
01-Jan-2039 to 31-Dec-2039	0	13,877	5,493	2,775	0	8,384	5,609
01-Jan-2040 to 31-Dec-2040	0	12,507	5,773	2,501	0	6,735	4,233
01-Jan-2041 to 31-Dec-2041	0	12,260	6,053	2,452	0	6,207	3,755
01-Jan-2042 to 31-Dec-2042	0	12,044	6,333	2,409	0	5,711	3,303

01-Jan-2043 to 31-Dec-2043	0	11,991	6,613	2,398	0	5,378	2,979
01-Jan-2044 to 31-Dec-2044	0	12,249	6,893	2,450	0	5,356	2,906
01-Jan-2045 to 31-Dec-2045	0	12,532	7,173	2,506	0	5,359	2,853
01-Jan-2046 to 31-Dec-2046	0	12,818	7,454	2,564	0	5,364	2,801
01-Jan-2047 to 31-Dec-2047	0	13,243	7,734	2,649	0	5,510	2,861
01-Jan-2048 to 29-Feb-2048	0	2,183	1,275	437	0	908	471
Total	0	291,944	112,233	58,389	0	179,711	121,323

Overall, the PP has provided ER spread sheet^{/02/}, the audit team cross checked the same and able to reproduce the estimation as per requirements. VVB confirms that the applied methodology^{/B02/} and the referenced tools^{/B03/} have been applied correctly to calculate baseline emissions and net GHG removals of the project during the crediting period. Based on the above analysis the audit team confirms the following with respect to the project description:

- All relevant assumptions and data are listed in the project description, including their references and sources.
- All data and parameter values used in the project description are considered reasonable in the context of the project and are in conformance with the VCS Program rules.
- All estimates of the baseline emissions can be replicated using the data and parameter values provided in the project description.

The CCIPL validation and verification team has verified these calculations and confirms that the values given are conservative as discussed above and are devoid of any material discrepancies and does not result in any overestimation of emission reductions.

3.4.7 Methodology Deviations

In line with VCS PDMR^{/01/}, ER calculations^{/02/} and applied methodology requirements^{/B02/} there are no deviations from the applied methodology^{/B02/} and related tools^{/B03/}. VVB also confirms that there are no methodology deviations after reviewing the VCS PDMR^{/01/} and ER sheets^{/03/}.

3.4.8 Monitoring Plan

The data and parameters available at validation as per the VCS PDMR^{/01/} along with the VVB Assessment are as follows:

Data/Parameter	Value Applied	VVB Assessment
Location of project area	As per work sheet, field data ^{/21/}	PP has provided the coordinates of each project area in the VCS PDMR ^{/01/} and field data sheet ^{/21/} . VVB after reviewing KML files ^{/03/} and onsite inspection ^{/i1-i22/} confirms that the location of the project area is accurately provided by PP.
Total area of PAI 1	894.06 hectares	Based on the GIS assessment of the project area files ^{/03/} , VVB confirms that the total project area for the first instance is 894.06 hectares.
Collar diameter/Collar Girth/ Diameter/Girth at breast height (DBH/GBH)	Collar diameter (Mango)=28.76 cm (6 th year) Collar diameter (Guava)= 1.37cm (2 nd year), 3.36cm (4 th year), 5.70cm (6 th year), 7.28cm (8 th year), 9.83cm (10 th year).	VVB has reviewed the secondary data sources ^{/23-mmm, nnn,ooo/} used for referring the CD/CG/DBH values for ex ante calculations for both the three species. VVB confirms that the values used are based on the established research and provides a reliable foundation for accurate estimations. The approach used is acceptable under the applied methodology and is considered satisfactory to the VVB.

	DBH (Red sander, m) = Girth (cm)/3.14/100 Girth (cm) values for an initial 15 years (5.0, 16.2, 23.8, 25.9, 28.0, 30.1, 32.4, 34.5, 36.1, 37.7, 39.3, 40.9, 42.5, 44.6, 44.9)	
Allometric Equation	<i>M. indica</i> $Y = 0.20 \times \text{Collar Diameter}^{1.85}$	The allometric equation $Y = 0.20 \times \text{Collar Diameter}^{1.85}$ used for Mango is derived from the study on biomass and carbon stock estimation in mango-based land uses on degraded lands in the Indian Sub-Himalayas^{/23-ppp/}. The study establishes a strong correlation between collar diameter and biomass, making it a reliable predictor for carbon stock estimation. However, given that the study was conducted in the Indian Sub-Himalayas, differences in climatic conditions, soil fertility, and management practices in Andhra Pradesh and Tamil Nadu may introduce some variability in the actual carbon stock accumulation. Nonetheless, the equation remains suitable with appropriate calibration based on field measurements.
	<i>P. guajava</i> $Y = (3.264X^{1.012}) + 3.446$	The allometric equation $Y = (3.264X^{1.012}) + 3.446$ used for Guava is sourced from a study focusing on biomass production and carbon stock in <i>Psidium guajava</i> orchards under a hot and sub-humid climate^{/23-qqq/}. This equation was

		validated using Richard's model, which showed a high adjusted R^2 value, indicating strong predictive accuracy. Since the study was conducted in a similar climatic region, the equation is expected to be reasonably accurate for Guava plantations in Madhya Pradesh.
Volumetric Equation	<i>P. santalinus</i> $v^{1/2} = -0.144504 + 2.943115 \times D$	The volumetric equation $v^{1/2} = -0.144504 + 2.943115 \times D$ used for Red Sander is derived from the Andhra Pradesh Forest Inventory Report ^{/23-rrr/} . Given that Red Sander is native to Andhra Pradesh and the equation is based on regional inventory data, it is highly relevant and appropriate for biomass and carbon stock estimation in the project. The primary consideration should be ensuring that the plantation conditions align with those from which the equation was developed.
Carbon Fraction (CF_{tree})	0.47	In accordance with the VCS PDMR ^{/01/} , a default IPCC (2006) value has been used with appropriate source reference provided by the PP which is deemed valid and appropriate by the VVB.
CO _{2e}	44/12	VVB confirms that the default IPCC value ^{/B04/} applied for the conversion factor is valid and appropriate.
Root-to-Shoot Ratio (R)	0.25	VVB after cross checking the mentioned source" IPCC Good Practice Guidance for LULUCF, 2003 Table 3A.1.8" confirms the default value applied is valid for tropical dry forest.
Wood density	0.44	

Leakage parameters	R _{TR EE}	0.25	BD _{RS F}	0.1	Values are used in accordance with CDM AR tool 15 and IPCC GPG LULUCF report and are acceptable under the applied methodology.
	R _s	0.4	b _{FO RES T}	73	
	C _F	0.47	CC _{SHR UB,i}	0.5	
BEF	1.59				The referenced study (https://scihub.st/https://doi.org/10.1016/S0961-9534(00)00040-4) provides biomass expansion factor value as 1.59 for broad-leaved category which is deemed to be conservative under the applied methodology.
DF _{LI}	1%				The default value has been taken from Table:6 CDM AR-Tool 12 which is acceptable under the applied methodology.
DF _{DW}	1%				The default value has been taken from Table:5 CDM AR-Tool 12 which is acceptable under the applied methodology.
Soil Organic Carbon (SOC)	0.8 t/ha/yr				AR-Tool 16 applied for the SOC calculations and the total area is multiplied with the dSOC value obtain from the tool spreadsheet.VVB considers this approach appropriate and in line with the applied methodology.
Project trees	Year	No. of trees			Upon review of Ex-ante sheet ^{t/02/} provided, VVB confirms that PP has demonstrated the total number of trees planted during 2018 to 2023. Value considered is in line with Calculations provided in ex-ante sheet.
	2018	75,049			
	2019	73,587			
	2020	56,353			
	2021	96,183			
	2022	90,374			
	2023	13,569			

Stratum weight (wi)	Stratum Name	Wi		
	2018 Mangro	0.29		
	2019 Mangro	0.13		
	2020 Mangro	0.09		
	2021 Mangro	0.10		
	2022 Mangro	0.08		
	2023 Mangro	0.08		
	2019 Red Sande r	0.02		
	2020 Red Sande r	0.02		
	2021 Red Sande r	0.01		
	2022 Red	0.03		

	Sander		
	2018 Guava	0.02	
	2019 Guava	0.02	
	2020 Guava	0.02	
	2021 Guava	0.05	
	2022 Guava	0.04	
Permanent Sample Plot (PSP)	47		PP has established PSPs based on A/R Methodological Tool 'Calculation of the number of sample plots for measurements within A/R CDM project activities' (Version 02.1.0).

The data and parameters to be monitored as per the VCS PDMR^{/01/} are:

Data /Parameter	Value Applied	VVB Assessment
Collar Diameter (CD)/Diameter at breast Height (DBH)	Measurements have been performed by the team, following the monitoring	After review of the field data sheets ^{/21/} during onsite inspection ^{/11-i22/} , VVB confirms that the PP has measured and collected data from field monitoring of the permanent sampling plots.
Tree Height (H)	Measurements have been performed by	Based on the review of the PDMR ^{/01/} , it is confirmed that this parameter will be measured with Clinometers. The measurement involves the following:

	the team, following the monitoring		i. Angle/degree percentage observation through clinometers Distance in meter of the observer from point of observation to the tree (measure by using Measuring Tape).
Area, Ai	Stratum	Area (ha)	Based on the review of the PDMR^{/01/} the value for Project Stratification for the first Project Activity phase is based on the year of plantation and species planted. Strata area is selected and mapped in the software as .kml file.
	2018 Mango	258.02	
	2019 Mango	115.32	
	2020 Mango	76.96	
	2021 Mango	93.61	
	2022 Mango	74.86	
	2023 Mango	68.5	
	2019 Red Sander	22.09	
	2020 Red Sander	19	
	2021 Red Sander	12.1	
	2022 Red Sander	27.77	
	2018 Guava	15.79	

	2019 Guava	20	
	2020 Guava	14.63	
	2021 Guava	43.96	
	2022 Guava	31.45	
Standard Deviation	Stratum	Std. dev (t.dm/h a)	Based on the VCS PDMR ^{/01/} For the calculation of PSPs, the std. dev is assumed within the stratum.
	2018 Mango	10.97	
	2019 Mango	11.27	
	2020 Mango	9.02	
	2021 Mango	6.87	
	2022 Mango	4.84	
	2023 Mango	2.95	
	2019 Red Sander	21.36	
	2020 Red Sander	17.62	
	2021 Red Sander	14.24	
	2022 Red Sander	11.23	
	2018 Guava	5.47	

	2019 Guava	4.87	
	2020 Guava	4.27	
	2021 Guava	3.39	
	2022 Guava	2.50	
Land Title Records			VVB has verified land ownership documents ^{/17/} of farmers involved in the Project Activity and First Project Activity phase were verified during the onsite inspections ^{/i1-i22/} .
Contractual Agreement			Agreements ^{/0512//} have been reviewed during the onsite inspections ^{/i1-i22/} by the VVB.
Survival Rate	90%		VVB after reviewing Ex- post sheet ^{/02/} confirms that the value applied is appropriate.
AGB	Calculated Value in Ex-post Calculation Sheet	in	VVB based on review of the VCS PDMR ^{/01/} and carbon calculation spreadsheet ^{/02/} , confirms that the volumetric and allometric equations used to calculate is valid and has been appropriately used in the GHG removals calculation.
BGB	BGB= 0.25* AGB (IPCC, 2006). This value has been calculated and computed in Ex-Post calculation sheet		VVB based on review of the VCS PDMR ^{/01/} and carbon calculation spreadsheet ^{/02/} , confirms that the IPCC equation used to calculate BGB is valid and has been appropriately used in the GHG removals calculation.
TB (Total Biomass)	Stratum	(t.dm/h a)	
	2018 Mango	34.79	
	2019 Mango	32.85	
			Based on the review of VCS PDMR ^{/01/} and Ex post sheet ^{/02/} , VVB confirms that the values applied are consistent and appropriate.

	2020 Mango	30.52	
	2021 Mango	22.98	
	2022 Mango	10.44	
	2023 Mango	10.24	
	2019 Red Sander	143.44	
	2020 Red Sander	180.61	
	2021 Red Sander	80.41	
	2022 Red Sander	106.45	
	2018 Guava	7.91	
	2019 Guava	6.68	
	2020 Guava	15.77	
	2021 Guava	8.53	
	2022 Guava	12.27	
Allometric Equation	<i>M. indica</i>	Y= 30.40 *EXP(- 5.07*EXP(-	VVB Response

0.26*collar
diameter)+ 1.277

VVB has reviewed the allometric equation applied for ex-post estimation of carbon stocks in *Mangifera indica* (Mango) in the VCS PD and EX post sheet under PAI-1, implemented in the states of Andhra Pradesh and Tamil Nadu. The project proponent applied the Gompertz model developed by Naik et al. (2019), expressed as:

$$Y = 30.40 \times \text{EXP}(-5.07 \times \text{EXP}(-0.26 \times \text{collar diameter})) + 1.277$$

This model was derived through destructive sampling of 30 mango trees aged 2–10 years at the ICAR Research Centre for Hill and Plateau Region, Ranchi, Jharkhand, within the same host country (India). The study reports an adjusted $R^2 = 0.973$, which, for a single-predictor model, is equivalent to the coefficient of determination (R^2). This satisfies the AR-TOOL17 (v1) paragraph 6(c) requirement that the allometric equation be based on at least 30 sample trees and achieve an $R^2 \geq 0.85$.

To confirm edapho-climatic similarity between the site where the equation was developed (eastern India) and the project area (southern India), the VVB compared regional parameters as presented below.

Parameter	India – Eastern Region	India – Southern Region
Climate zone	Subtropics to Tropics	Subtropics to Tropics

Latitudes	27° 10' N – 18° 7' N	28° 10' N – 8° 5' N
Distance to equator	2,000 – 3,000 km	900 – 3,100 km
Daytime maximum temperature	32.6 °C	32.1 °C
Daily low temperature	21.9 °C	23.2 °C
Humidity	68 %	72 %
Precipitation	1,511 mm	1,632 mm
Rain days	92.4 days	91.2 days
Hours of sunshine	1,825 hrs	2,263 hrs

Source: Climate comparison – East India / South India, <https://climate-data.org>⁴

The analysis indicates that both regions share similar temperature ranges, rainfall patterns, humidity, and seasonal characteristics. Hence, the edapho-climatic conditions are comparable and representative of similar ecological zones within India.

Based on this review, the VVB concludes that the Naik et al. (2019) equation is species-specific, developed under comparable edapho-climatic conditions within the same host country, and statistically robust ($R^2 = 0.973 > 0.85$, $n = 30$). Therefore, it meets the requirements of AR-TOOL17 (v1), paragraph 6(c) and is appropriate

⁴ [Climate comparison: East-India / South-India](#)

		for use in ex-post estimation of biomass and carbon stocks in <i>Mangifera indica</i> plantations established under the project.
	<i>P. guajava</i> $Y=(3.264X^{1.012}) + 3.446$	The allometric equation $Y = (3.264X^{1.012}) + 3.446$ used for Guava is sourced from a study ^{23-qqq/} focusing on biomass production and carbon stock in <i>Psidium guajava</i> orchards under a hot and sub-humid climate. This equation was validated using Richard's model, which showed a high adjusted R^2 value, indicating strong predictive accuracy. Since the study was conducted in a similar climatic region, the equation is expected to be reasonably accurate for Guava plantations in Madhya Pradesh.
Volumetric Equation	<i>P. santalinus</i> $v^{1/2} = -0.144504 + 2.943115 \times D$	The volumetric equation $v^{1/2} = -0.144504 + 2.943115 \times D$ used for Red Sander is derived from the Andhra Pradesh Forest Inventory Report ^{23-rrr/} . Given that Red Sander is native to Andhra Pradesh and the equation is based on regional inventory data, it is highly relevant and appropriate for biomass and carbon stock estimation in the project. The primary consideration should be ensuring that the plantation conditions align with those from which the equation was developed.
Wood density	0.44	VVB confirms that the applied value has been taken from IPCC Table 3.1.9-2 and is accurate and acceptable under the applied methodology.
BEF	1.59	The referenced study (https://sci-hub.st/https://doi.org/10.1016/S0961-

		9534(00)00040-4) provides biomass expansion factor value as 1.59 for broad-leaved category which is deemed to be conservative under the applied methodology.	
DF _{LI}	1%	VVB confirms that the default value has been taken from Table:6 CDM AR-Tool 12 Hence, the value applied is valid and appropriate.	
DF _{DW}	1%	VVB confirms that the default value has been taken from Table:6 CDM AR-Tool 12 Hence, the value applied is valid and appropriate.	
SOC	0.8 tC/ha/yr for Madhya Pradesh and 0.8 for Andhra Pradesh and Tamil Nadu	VVB confirms that the value has been taken from CDMAR-Tool 16. Hence, value applied is valid and appropriate.	
Size of Each PSPs in the Stratum i (APlot i)	Size of Each PSPs in the Stratum i (APlot i)		VVB confirms that the selection of (0.0625 ha for Mango and Red Sander and 0.0225 ha for Guava) PSP is based on the CDM manual for “Measurements for Estimation of Carbon Stocks”. VVB considers this approach as valid and appropriate.
Wi	Stratum Name	Wi	Based on the review of EX post sheet ^{t/02/} and KML files ^{/03/} , VVB confirms that the values applied are consistent and appropriate.
	2018 Mango	0.29	
	2019 Mango	0.13	
	2020 Mango	0.09	
	2021 Mango	0.10	
	2022 Mango	0.08	
	2023 Mango	0.08	

	2019 Red Sander	0.02	
	2020 Red Sander	0.02	
	2021 Red Sander	0.01	
	2022 Red Sander	0.03	
	2018 Guava	0.02	
	2019 Guava	0.02	
	2020 Guava	0.02	
	2021 Guava	0.05	
	2022 Guava	0.04	

VVB confirms that the given monitoring plan provides information on monitoring procedures for the project activity and First Project Activity phase. As per the requirements of VCS, the Project has described the process and schedule for obtaining, recording, compiling, and analysing the monitored data and parameters. Permanent Sample Plots (PSPs) are used for monitoring carbon stock in the plantation. Each parcel of land is assigned a unique number, geo-referenced, and located inside the Project Area. SOPs are prepared for acquiring credible data for baseline, project leakage, and GHG removal estimations. Purpose of preparation of monitoring plan is to collect the relevant data necessary as follows:

- (a) Verification that the applicability conditions listed under paragraphs 3 and 4 has been met.
- (b) Verification of changes in carbon stocks in the pools selected.
- (c) Verification of project emissions and leakage emissions.

Roles and Responsibilities:

The management structure of the plantation project between Infinite Solutions and MFI.

Organization	Roles	Reporting	Designation
Infinite Solution	Managing the financial components of a project, including budgeting and accounting; establishing in place checks and controls for project monitoring and reporting; and making sure that carbon credit initiatives are monitored in accordance with all legal requirements.	Infinite Solution	Project Proponent
Mangrove foundation of India	Managing project implementation, overseeing general administration duties, coordinating with field staff, and establishing systems for the development and maintenance of data.		Project implementor
Plantation supervisors	Providing comprehensive field assistance to administrators, including tasks such as nursery raising, land development, labor management and allocation, site monitoring, on-site management, and compiling inventory and reports		Project implementor
MRV team	Demarcation of Permanent Sample Plots, Recording Geo coordinates of the Permanent Sample Plots, field measurements such as DBH, Height, Number of Mango trees	Infinite Solution	Project Proponent

Establishment of the project boundary

VVB through GIS assessment of project area files^{/03/} confirms that all land parcels designated for plantations under this project activity are accurately delineated using GPS tracking devices. To ensure precision, extensive training is provided, and up-to-date GPS portable devices such as Garmin eTrex are supplied. A step-by-step guidance on the tracking procedure is detailed in the Standard Operating Procedures (SOPs). Each planting plot is assigned a unique ID and tracked, with the tracks downloaded and recorded as Google Earth Pro.kml files, shape files, and Excel files. This facilitates further processing of the tracks via GIS applications. The following activities enable effective management and monitoring of the project areas as follows:

- Review of all project boundaries to assess potentially on-going afforestation activities, site by site.
- Utilizing GPS technology to geo-reference (latitude and longitude coordinates) each land parcel included in the project
- Periodic verifying a minimum of 10% of recorded boundary tracks to ensure alignment with the designated project boundaries.
- There will be periodic verifications of the project area boundaries, during the crediting period as well as documentation has been maintained for areas where planting efforts fail or where there are changes in land use
- The field information will be analysed using a ArcGIS to calculate the areas covered by *Mangifera indica* (Mango) and the year of planting,

Stratification

Stratification of the areas has been corresponding to the guidelines established by methodology AR -ACM0003 “Afforestation and reforestation of lands except wetlands”. The monitoring of this project activity involves planting of *Mangifera indica* (Mango), necessitates the periodic updating of a comprehensive database. This database captures crucial information including the results of biomass accumulation, planting dates, and any unexpected disturbances that occur during the crediting period, such as fire, pest, or disease outbreaks. Additionally, it accounts for variations in forest management practices, such as cleaning, planting, re-planting, and harvesting, which may occur at different years and areas. Furthermore, the database allows for the identification of different strata, which may be similar enough to be merged into one stratum. The stratification identification procedure considers variables such as species planted, plantation model, and climatic zone, as outlined in the project inventory database, to establish the pre-stratification scenario.

Sampling design, sampling size and random sample point selection

The 1st PAI Activity area of 894.06ha is stratified according to the plantation year and area, according to the A/R Methodological Tool “Calculation of the number of sample plots for measurements within A/R CDM project activities” (Version 02.1.0) Number of PSPs required for estimation of biomass stock is calculated iteratively. In the first iteration, the number of sample plots for the project area is calculated as:

$$n = \frac{N t_{VAL}^2 * (\sum_i w_i * s_i)^2}{N * E^2 + t_{VAL}^2 * \sum_i w_i * s_i}$$

oWhere:

n = Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless

N = Total number of possible sample plots within the project boundary (i.e. the sampling space or the population); dimensionless

t_{VAL} = Two sided Studentist value, at infinite degrees of freedom, for the required confidence level; dimensionless; value of 1.645 is taken from tool

w_i = Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless

s_i = Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha⁻¹)

E = Acceptable margin of error (i.e. one half the confidence interval) in estimation of biomass stock within the project boundary; t d.m. (or t d.m. ha⁻¹), i.e. in the units used for s_i ; default value equal to 10% of mean biomass stock is taken from the tool = 1, 2, 3, biomass stock estimation strata within the project boundary

With above equation the number of PSPs are established. The PSPs are then allocated among the strata using the below equation:

$$n_i = n * \frac{w_i * s_i}{\sum_i w_i * s_i}$$

Where:

n_i = Number of sample plots allocated to stratum i; dimensionless

N = Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless

w_i = Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless

s_i = Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha⁻¹)

i = 1, 2, 3.....biomass stock estimation strata within the project boundary

Number of Permanent Sample Plot (n) established, and allocation of the PSP (n_i) is shown in the below table:

Stratum	Strata Year	Area (ha)	Number of PSPs based on tool
2018 Mango	2018	263.42	14
2019 Mango	2019	120.48	7
2020 Mango	2020	80.65	4
2021 Mango	2021	93.14	4
2022 Mango	2022	76.36	2
2023 Mango	2023	65.96	2
2019 Red Sandal	2019	22.09	2
2020 Red Sandal	2020	19.00	1
2021 Red Sandal	2021	12.12	1
2022 Red Sandal	2022	27.77	1
2018 Guava	2018	13.50	1
2019 Guava	2019	38.33	2

2020 Guava	2020	53.68	4
2021 Guava	2021	18.15	1
2022 Guava	2022	2.56	1
Total		894.06	47

To establish statistical independence, at least one plot will be set for each stratum.

Tree biomass stock is measure by recording the height and DBH of *Mangifera indica* (Mango). DBH and height measurements are made in accordance with the SOP created by PP for the MRV per personnel. Using a Vernier calliper, the diameter at Breast Height (DBH) is measured 1.37 meters above ground to determine the DBH. A reference stick is used to estimate the measuring point, which is located 1.37 meters above the ground. The Clinometer instrument was used to measure the height of the trees. A clinometer is a device that measures angles to the top and base of trees as well as the distance from trees. The surveyor stands for measuring the angle, and the distance between the base of the tree and the surveyor is measured in meters using a measuring tape. To calculate tree height, use the formula below:

$$\text{Height (H)} = \text{Distance between tree and surveyor (m)} * \text{Angle (x)} \\ + \text{Eye level height of the Surveyor}$$

QA/QC for Field Measurements

The PP has established a comprehensive training program to ensure that all participants involved in field data collection and interpretation are well-equipped with the necessary skills. The training covers standardized methodologies, with a strong emphasis on the importance of accurate data gathering. Additionally, Standard Operating Procedures (SOPs)^{06/} have been developed to define required measurements and ensure consistency in field data collection.

VVB confirms that the QA/QC measures for field measurements are appropriately implemented, as training and SOPs play a crucial role in maintaining data accuracy and reliability.

QA/QC for Data Entry

To minimize errors in carbon estimation, the PP has implemented structured data entry protocols that include thorough error-checking mechanisms. The double-checking process

ensures that any typographical or data entry errors are identified and corrected before analysis. Furthermore, any unresolved issues related to monitoring plot data are excluded from analysis, preventing inaccuracies in carbon stock calculations.

VVB confirms that the QA/QC measures for data entry effectively reduce the risk of errors and maintain data integrity, supporting the credibility of carbon estimates.

QA/QC for Data Archiving

The PP has implemented a robust data archiving system, ensuring that all electronic data and reports are duplicated and securely stored on long-lasting media such as External Hard Drives (EHDs). Copies of these EHDs are stored in multiple locations, mitigating risks associated with data loss or corruption.

Based on the onsite inspection and interviews^{/i1-i22/} VVB confirms that the QA/QC procedures for field measurements, data entry, and data archiving have been implemented as described by the PP in the VCS PDMR^{/01/}. These measures effectively support data accuracy, consistency, and security, thereby ensuring the reliability of carbon stock assessments and overall project integrity.

3.5 Non-Permanence Risk Analysis

The VCS AFOLU Non-Permanence Risk Tool v4.2^{/B01/} has been used by the Project Proponent to assess overall project risk. The VVB reviewed the Non-Permanence Risk Report^{/03/} provided with supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool^{/B01/}. Each risk factor has been thoroughly assessed for conformance.

	Risk	VVB Assessment and Justification
—	Project Management	As assessed in section 3.3.4.2 of this report, VVB confirms that the species planted as a part of the VCS project implementation are both native and non-native to the project area. However non-native species has been adopted to ecological region. Therefore, VVB confirms that the requirements of section 2.2.1(3) of AFOLU Non-Permanence Risk Tool v4.2. Since it is the project's 1st validation there are no previously issued credits for the project and no enforcement to prevent encroachment by outside actors is required to protect more than 50 percent of stocks and no loss event was reported.

		However, PP has signed the carbon waiver agreement with farmers^{/06/} which ensures the protection and maintenance of the project carbon stocks. Therefore, VVB confirms that this risk is not applicable. Further based on the onsite inspection/interviews^{/i01-i22/} and through supporting document VVB, confirms that project management team maintain a local presence in the country and located within one day of travel from the project site considering all parcels or polygons in the project and PP has well established local offices in project region . VVB confirms that project management risk score 0 is acceptable. VVB based on the review of management plan in place, confirms that adaptive management is carried out to address the largest risks described in this tool, which are fire, pests and diseases and extreme weather risks. A comprehensive management plan is active to ensure adaptive management. Farmers are also made aware about these risks and most of these practices have been adopted by them in their operations. Further, based on onsite inspections and on review of organisation structure and adaptive management plan in place VVB, confirms that the management team includes individuals with significant experience in AFOLU project. Thus, mitigation score of -2 and overall project management score of “0” is deemed to be appropriate and acceptable.. The evidence provided are acceptable and satisfactory in view of VVB.
	Financial Viability	VVB based on the review of the financial viability cash flow sheet confirms that the project reaches cash flow breakeven point between 7 and up to less than 10 years from the current risk assessment. The risk score is kept as 1 which is deemed to be acceptable by VVB. VVB based on the review of the financial viability sheet confirms Project has secured 80 percent or more of the funding needed to cover the total cash out before the project reaches

		breakeven. Therefore, a risk score of 0 is deemed to be acceptable by VVB. Furthermore, based on the review of the project financial viability sheet, it is confirmed that the project's longevity is covered by management and financial plans. Mitigation: VVB based on the review of the financial viability sheet confirms that the project has available as callable financial resources at least 80% of total cash out before project reaches breakeven. Thus, based on the above assessment mitigation score of -2 and the overall financial viability score of "2" is deemed to be appropriate and acceptable.
	Opportunity Cost	VVB based on review of VCS Non-Permanence risk report provided by PP, PRA reports and on-site inspection, confirms that the baseline activities are subsistence driven since the baseline agricultural practices are mainly to fulfill the farmer needs with no significant income and net positive impacts are also demonstrated in the PDMR^{/01/} Thus, Q.3 is applicable for the proposed project activity and NPV demonstration is not required and not applicable as per the requirements of the AFOLU NPRT requirements.. The risk score of 0 is applicable and deemed to be acceptable by the VVB. <i>/i1-i22/</i> Mitigation: Farmers' agreements^{/05/} have been provided to VVB. On the basis of review of these agreements VVB confirms that the project is protected by a legally binding agreement to continue management practices that protect the credited carbon stocks over the duration of the project crediting period. Thus, based on the above assessment mitigation score of -2 and the overall Opportunity Cost score of "0" is deemed to be appropriate and acceptable..

	Project Longevity	In line with VCS PDMR ^{/01/} , the length of the VCS project activity is 40 years. Based on the review of farmers agreements ^{/11/} and project management plan ^{/06/} VVB concludes that clause 3 of the agreements clearly states that the farmers have signed to maintain project trees for a period of 40 years. Thus, risk score of 15 is acceptable to VVB.
	Total Internal Risk (PM + FV + OC + PL)	In conclusion, VVB confirms that the total internal risk for the VCS project gives 17, which is deemed appropriate and valid.
EXTERNAL RISK	Land Tenure and Resource Access/Impacts	VVB based on the review of Land titles^{/17/}, farmers' agreements^{/05/} and onsite inspection/ interviews^{/11-122/} confirm that the participating farmers have legal land titles over their lands where they will do the plantation activities. Thus, ownership and resource rights held by same entities and no disputes exists over land tenure or ownership user rights. Furthermore, based on the onsite inspection/interviews^{/11-122/} VVB confirms that no instances of government intervention in the past 20 years or specific instances of expropriation and government intervention in land rights in the project area have been conclusively resolved against the government in a court of competent jurisdiction. Mitigation: VVB confirms that the project area is protected by legally binding farmers' agreements^{/05/} to continue management practices that protect carbon stocks for the duration of the project crediting period. Thus, the mitigation score of -2 applies to the project. Based on the above assessment VVB confirms that the total score of 0 for the land tenure and source access/impacts is satisfactory to the VVB.

	Stakeholder Engagement	VVB based on the LSC documents ^{/07/} and onsite interviews ^{/11-i22/} confirms that more or less than 50 percent of stakeholders living within and reliant on the project area have been consulted. Furthermore, less than 20 percent of stakeholders living outside the project area within 20km of the project area and are reliant on the project area have been consulted. Thus the risk score is 0 is deemed to appropriate by the VVB..
	Political Risk	As per the VCS Non-Permanence Risk Report^{/03/}, the country's calculated governance score is -0.13. hence risk rating is 2. This has been further confirmed by reviewing the World Bank Institute Worldwide Governance Indicators score for India (2022) with the value for all 6 governance indicators, averaged over the last 5 year 2017, 2018, 2019, 2020, and 2021, available at: https://www.worldbank.org/en/publication/worldwide-governance-indicators Mitigation: The project is in a country that: 1) Is party to the Paris Agreement and has submitted an NDC to the UNFCCC Secretariat in the last five years. 2)Includes AFOLU commitments (conditional or unconditional) in its NDC. 3) Has a documented and active climate change plan that includes the project activity. Hence the risk rating is -2. VVB confirms that overall risk score of 0 for political risk is acceptable..
	Total External Risk (LT + CE +PC)	In conclusion, VVB confirms that the total external risk for the VCS project gives 0, which is deemed appropriate and valid.

NATURAL RISK	Fire (F)	VVB based on the Fire report^{/04-v-a/} provided by PP confirms that the project involves areas located around homes and on farms and are less likely to be affected by fires. Most of the plots are active farm plots and thus lack fuel density around them. Moreover, the management plan^{/06/} puts forward measures to for fire precautions. Therefore, a risk score of 0.75 is acceptable to VVB as Historical records^{/04/} indicate only minor, scattered fire incidents over the past two decades, with negligible impact on plantation areas. The dispersed spatial distribution of the project sites further reduces the potential for large-scale fire spread. Given the insignificant incidence (corresponding to <5% loss of carbon stocks) and a historical likelihood between once every 10 years and less than once every 25 years Mitigation: Additionally, VVB based on on-site interviews^{/18/}, with the farmers and implementation partners, confirms that a Fire Monitoring System is followed. Moreover, the risk of fire is greatly mitigated by the project design. Hence the total risk score for the risk of fire after calculation with mitigation, i.e., 0.75 is acceptable.
	Pest and Disease Outbreaks (PD)	Based on the review of supporting evidence provided (pests and disease)^{/04-v-d/} VVB confirms that the that the risk of pests in the-project region is de minimus, hence risk score 3 is acceptable as no significant pest or disease outbreaks affecting the project plantation areas have been recorded during the historical reference period^{/04/}. The preventive management measures and routine monitoring practices implemented by the Project Proponent further support the conclusion that the risk remains low. Based on the insignificant incidence (corresponding to <5% potential loss of carbon stocks) and a historical likelihood between once every 10 years and less than once every 25 years After calculation with mitigation the total risk score is 0.75.

	Extreme Weather (W)	VVB, based on the review of PDMR ^{/01/} , project management manual ^{/06/} , confirms that the risk of extreme weather in the project region is <i>de minimus</i> . Further, mitigation measures, as stated in the VCS Non-Permanence Risk Report, has been deemed appropriate by the VVB, hence risk score 1 is acceptable as heavy rainfall events in the project regions primarily affect agricultural fields and urban areas, with minimal documented impact on plantation systems. Historical records indicate no significant losses in tree biomass attributable to such events. Given the insignificant incidence ^{/04/} (corresponding to <5% potential loss of carbon stocks) and a historical likelihood between once every 50 years and less than once every 100 years. After taking mitigations into consideration risk score is 0.25.
	Geological Risk (G)	VVB based on the review of provided evidence (geological report) ^{/04-v-b/} confirms that the risk score of 1 is valid and appropriate as project areas fall within low-to-moderate seismic zones ^{/04/} , with no historical records of seismic events causing damage to plantation systems. Based on the revised assessment, the significance and likelihood of geological risks are considered low or insignificant. Given the insignificant incidence (corresponding to <5% potential loss of carbon stocks) and a historical likelihood between once every 50 years and less than once every 100 years. After taking mitigations into consideration risk score is 0.25.
	Total Natural Risk (F + PD + W + G + ON)	In conclusion, VVB confirms that the total natural risk for the VCS project gives 2.21, which is deemed appropriate and valid.

Table XIII: Overall Non-Permanence Risk Rating and Buffer Determination

	Risk Category	Rating
a)	Internal risk	17

b)	External risk	0
c)	Natural Risk	2.21
Overall risk rating (a + b + c)		20.00

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Implementation Status	Assessment steps, evidence checked, & conclusion:
Project implementation	VVB, based on the on-site inspection^{/11-122/} and supporting documents^{/1-21/} confirms that there is no material misstatements between the project implementation and the Project Description. The implementation of the proposed project activity is that all the plantation activities undertaken from 2018 to 2023 have been considered. The total project area is 894.06 for the first project activity instance in the state of Andhra Pradesh, Madhya Pradesh and Tamil Nadu. PP has outlined the project implementation activities including the supply of tree saplings, training on land preparation and tree management, site selection, species selection, transplanting of tree saplings, engagement of local youth, stakeholder engagement, farmer onboarding, risk mitigation, adaptive management protocols, and regular field inspections. Additionally, the management manual and SOPs^{/06/} provide details regarding the involvement of implementation partners in these activities.
Monitoring plan	The monitoring plan has been defined against the requirements of section 6.1 of Methodology AR-ACM0003 (version 2.0). VVB has assessed all parameters (fixed and to be monitored) from VCS PD MR^{/01/}.

	VVB based on the review of monitoring plan in PD MR^{/01/}, the monitoring team consists of competent professionals for collection of data, monitoring and verifying the data. The QA/QC procedures mentioned sound reasonable and valid. Overall, the monitoring is done in adherence to the monitoring plan and in compliance with the requirements of the applied methodology^{/B02/} and referenced tools^{/B03/}. Through the review of the VCS PDMR^{/01/} and Project management manual^{/06/}, VVB confirms that PP has provided detailed monitoring plan. VVB, based on the review of all the monitoring plan confirms that there are no material misstatements between the actual monitoring system, and the monitoring plan set out in the project description and monitoring report^{/01/} and the applied methodology^{/B02/}.
AFOLU-specific project implementation	VVB, based on the on-site inspection^{/i1-i22/} and review of the Remote Sensing Shapefiles^{/03/} & KML Files^{/03/}, VCS PDMR^{/01/}, confirms that the implementation of the proposed project activity is all the plantation activities undertaken from 2018 to 2023 have been considered. The total project area is 894.06 hectares which is distributed in the three states Andhra Pradesh, Madhya Pradesh and Tamil Nadu. The trees were planted in agroforestry model with different spacing. The project activities are carried out on privately-owned lands belonging to farmers registered. VVB, based on the on-site inspection^{/i1-i22/} and through the review of the Remote Sensing GIS and Shapefiles^{/03/}, confirms that no new activities were implemented in the current monitoring period, the previously implemented project activities have been continued in the current monitoring period. VVB, based on the on-site inspection^{/i1-i22/} and remote sensing GIS^{/03/}, confirms that there is no loss of carbon stock that occurred during the 1st periodic verification

4.2 Accuracy of Reduction and Removal Calculations

Data and parameters used to calculate GHG emission removals for this verification period are as follows:

Parameter	Source	VVB assessment
Collar Diameter (CD)/Diameter at breast Height (DBH)	Raw data sheets	VVB has reviewed measurement approach followed by MRVs for measuring collar diameter and DBH of the trees as given in the VS PDMR ^{/01/} during onsite inspections ^{/i1-i22/} . The approach applied is taken from documented literature and is considered valid to the VVB. Moreover no discrepancy was found between raw data sheets and VVB's own field measurements for the visited plots.
Tree Height (H)	Sunto Clinometer	VVB confirms that Sunto clinometer is a reliable device which can be used for measuring tree heights accurately.
Area, Ai	GIS	VVB based on the review of Ex post sheets ^{/02/} and KML files ^{/03/} provided confirms that the project area is accurately defined.
Standard Deviation	Field measurements	VVB based on the review of EX post sheets ^{/02/} confirms that the values of standard deviation applied are accurate.
Survival Rate	Field measurements	VVB based on the review VCS PDMR ^{/01/} of EX Post sheets ^{/02/} confirms that the survival rate of 10% was derived based on frequent monitoring of plantations.
AGB	Allometric and Volumetric equations	VVB based on the review of equations used both allometric and volumetric for the planted species

		confirms that the equations use are species specific and have been taken from published studies ^{/22/} . Therefore, there use for biomass measurements is acceptable to VVB.
BGB (Root-to-Shoot Ratio)	AR Tool 14- Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities	A default value of 0.25 is applied as per tool 14. VVB considers this value acceptable under the applied methodology.
Allometric Equation	Mango: <u>Biomass production and carbon stocks estimate in mango orchards of hot and sub-humid climate in east</u> Guava: <u>https://www.currentscience.ac.in/Volumes/120/10/1627.pdf</u>	Allometric equations used for Mango and Guava are as follows: M. indica - $Y = 30.40 * EXP(-5.07 * EXP(-0.26 * collar diameter) + 1.277^{/22/})$ P. guajava - $Y = (3.264X^{1.012}) + 3.446$ VVB has reviewed the referenced literature and considers the equations suitable for measuring biomass for the given species.
Volumetric Equation	Andhra Pradesh forest Inventory Report, 2010	P. santalinus $-v^{1/2} = 0.144504 + 2.943115 * D$ VVB has reviewed the referenced literature for the used equation and considers the equation suitable for measuring volume for the given species.
Wood density	IPPC default value, Tale 3.1.9-2	VVB confirms that PP has an applied default value of 0.44 for wood density as per the IPPC default value, Tale 3.1.9-2 which is suitable for the given species and

		could be accepted under the applied methodology.
BEF	https://scihub.st/https://doi.org/10.1016/S0961-9534(00)00040-4	VVB confirms that PP has an applied value of 1.59 referenced from a published study. VVB has reviewed the sourced literature and confirms the value applied is accurate and acceptable.
DF _{LI}	Table:6 CDM AR-Tool 12	VVB confirms that the default value of 1 % applied is valid and appropriate.
DF _{DW}	Table:6 CDM AR-Tool 12	VVB confirms that the default value of 1 % applied is valid and appropriate
SOC	CDM AR-Tool 16	VVB confirms that the value applied 0.8 tC/ha/yr for Madhya Pradesh and 0.8 for Andhra Pradesh and Tamil Nadu is valid and acceptable to VVB.
Wi	Field measurements	Based on the review of EX post sheets ^{/02/} VVB confirms that the relative of stratum is accurately calculated by PP.
A _{Burn,i,t}	CDM AR-Tool 16	VVB based on the onsite interviews ^{/i1-i22/} and fire assessment report ^{/xx/} provided by PP confirms that value applied as 0 is acceptable to VVB as there was n fire incidence in the project region. Moreover, the management manual ^{/06/} of the project clearly specified that no fire was or will not be used for land preparation.
Leakage	CDM AR-Tool15	VVB confirms that PP has appropriately calculated the leakage for current monitoring



period in accordance with CDM AR-Tool15. The leakage value of current monitoring period is 1336tCO₂e.

VVB conducted a thorough review of the Ex-post calculation sheet^{/02/} to verify formula accuracy, manually replicating key calculations to confirm the absence of computational errors. Baseline and project emissions values were cross-checked to ensure consistency, while conversion factors, including biomass-to-carbon ratio and CO₂ equivalency, were validated against IPCC guidelines. Aggregated carbon stock data was also examined to confirm accuracy. Additionally, monitoring records, field logs, and reported values were compared, with key parameters such as collar diameter, diameter at breast height, and tree height verified against raw field data^{/21/}. The assessment confirmed that all calculations, conversions, and data applications were accurate, with no material discrepancies identified.

VVB further verified that all calculations aligned with the VCS PDMR^{/01/} and the applied methodology AR-ACM0003 v2.0. Baseline emissions were estimated using site-specific carbon stock data, with applied equations cross-checked for consistency with the approved methodology. Carbon removals were quantified using species-specific allometric equations for Mango and Guava, and a volumetric equation for Red Sandalwood. Leakage assessment followed Tool AR0015, and as the project was implemented on marginal land with minimal pre-existing agricultural activity, leakage was determined to be zero.

The appropriateness of default values applied in the quantification of carbon removals was assessed for compliance with VCS Program rules. The carbon fraction of biomass (0.47) and root-to-shoot ratio for belowground biomass estimation were cross-checked against IPCC 2006 guidelines. Additionally, DF_{LI}, DF_{DW} and SOC default values were reviewed against CDM AR Tool 12 and CDM AR Tool 16. Furthermore, the Biomass Expansion Factor (BEF) of 1.59 was confirmed to be conservative and accurately applied. The review established that all default values were scientifically justified, correctly implemented, and in alignment with recognized standards, with no deviations or inconsistencies observed.

To ensure accuracy in data transfer, the VVB conducted an assessment of data handling and quality assurance. Field measurement logs^{/21/} were reviewed to confirm the completeness and accuracy of recorded data. Carbon removal calculations were re-aggregated and compared against final reported totals to verify correctness. QA/QC procedures were reviewed to ensure that effective controls were in place to prevent manual data entry errors.

Following a comprehensive evaluation of data accuracy, calculation methodologies, applied parameters, and transposition processes, the VVB confirms that:

- The GHG removals and reductions stated in the project's GHG assertion are materially accurate and fully aligned with VCS requirements.
- The applied calculation methods, formulae, and default values conform to VCS Standard v4.7 and AR-ACM0003 v2.0.
- The project's baseline, project, and leakage emissions were quantified correctly, with no deviations from the approved methodology.
- The spreadsheet calculations, parameter consistency, and data handling processes demonstrate a high level of accuracy and reliability.

4.3 Quality of Evidence to Determine Reductions and Removals

VVB during the course of verification has checked the information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report. This assessment reveals that there are various raw data sources (both external and internal) for the preparation of monitoring report, namely default values from methodology^{/B02/}, tools^{/B03/}, IPCC^{/B04/}, FAO^{/B04/}, India State Forest Report, data from state forest department, field data for the permanent sampling plots, KML/Shape files (for area)^{/03/}. This raw data is then recorded and transferred in the carbon calculation sheet^{/02/} and then finally to the monitoring report. The quality of supporting documents that are provided by the PP as evidence is adequate. Field data sheets^{/21/} have been provided by the PP, which tallies with the data provided in the carbon calculation spreadsheet^{/02/}. The detailed assessment of the documents used during the assessment process has been provided below:

Table XVI: Evidence and their pertinence with respect to the VCS project

S.No.	Documents	Pertinence
i.	Carbon calculation spreadsheets ^{/02/}	To demonstrate the carbon sequestration calculation as per section 3.15 VCS Standard v4.7 ^{/B01/}
ii.	Forest/non-Forest analysis with Land Use Distribution map ^{/07/}	To demonstrate project eligibility in line with requirements stated in section 3.2. of VCS Standard v4.7 ^{/B01/}
iii.	Project planting/management plan	To demonstrate compliance with VCS ARR requirement section 3.2 & 3.6 of the VCS Standard v4.7 ^{/B01/}
iv.	Proof of title and right of carbon credits ^{/05/12/19/}	To demonstrate compliance in line with Section 3.7 of VCS Standard v4.7 ^{/B01/}

v.	Proof of project start date ^{/10/}	To demonstrate the start date of plantation and crediting period
vi.	Shapefiles/KML files ^{/03/}	To demonstrate compliance of project boundary, area and ownership of project area as per section 3.11 of VCS Standard v4.7 ^{/B01/}
viii.	Standard operating procedures/Monitoring manual ^{/06/}	Written procedures for plantation, monitoring and field data collection for personnel involved.
ix.	Sample plot monitoring Field data ^{/2/}	Field data sheet ^{/21/} with height, DBH and other data pertaining to each sample plot selected by the PP.

Competent employees^{/18/} are recruited for the management and operation of the project. The quality of supporting evidence^{/1-21/} submitted to VVB for verification is adequate and found to be verifiable.

Field data sheets^{/21/}, KML files^{/03/} and other supporting documents related to monitoring SOPs^{/06/} were checked by the assessment team to confirm the authenticity of the documents and to check the correctness of the calculations. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been discussed and found to be appropriate.

Based on the above, the VVB confirms the sufficiency and appropriateness of the quality of evidence provided by the PP to determine the GHG removals and further deems them to be acceptable.

5 VALIDATION AND VERIFICATION OPINION

5.1 Validation and Verification Summary

CC IPL has performed the joint validation & verification of the proposed VCS grouped project “IMPROVING LIVELIHOODS THROUGH AGROFORESTRY PLANTATIONS IN INDIA”. The GHG statement provided is the responsibility of the project participant.

This assessment has been performed based on all guidance and criteria as provided in VCS Standard version 4.7, VCS Program Guide version 4.6, VCS Validation and Verification Manual version 3.2 and Registration & Issuance Process version 4.3, the updated project documentation, the carbon sequestration calculation spreadsheets^{/02/}, PSP’s raw data-sheet^{/04/} provided by the PP and on-site inspection^{/18/}, observation by the VVB. The project specific information has been provided in the VCS PD as required by the VCS Standard and meets the requirements of the applied baseline and methodology. The monitoring plans described in the proposed project documentation is assessed along with verification activities. VVB gives an unmodified opinion as there is enough evidence to support the claims in the project activities.

The joint validation & verification has been conducted in a reasonable level of assurance as there is enough evidence provided by project proponent. VVB also confirms that the validation and verification of the GHG statement was conducted in accordance with ISO 14064-3.

5.2 Validation Conclusion

The validation assessment has been conducted to indicate the reasonableness of assumptions, limitations, and methods supporting the statement made by project proponent regarding the ex-ante i.e., constant values for the relevant data and parameters. Based on the review of the Joint VCS PD MR^{/01/}, carbon calculation spreadsheet^{/02/}, and relevant supporting evidence (i.e., peer review literature, IPCC default values, species specific research studies), VVB confirms that all the assumptions and statements made by PP are valid and appropriate with the possible reasonableness. Further, VVB assessed the relevant data and parameters in section 4.2 of this report.

The estimated GHG statement is the responsibility of the project. The project activity provides the information in VCS PD^{/01/} as required by the VCS Standard^{/B01/} and Validation and Verification Manual and in Carbon Check's opinion meets the requirements of the applied baseline and monitoring methodologies and is likely to achieve the estimated emission reductions.

VVB, at conclusion, confirms the reasonableness of the assumptions, limitations and methods, used to forecast information, and based on the evaluation (as detailed in this report), confirms that sufficient and appropriate information has been provided in the VCS PD^{/01/} for future estimate, any limitation and methods, used for the forecast.

The validation has been performed using a risk- based approach, as described above. VVB, during the validation, a total of 24 findings have been raised, which includes eight (08) Corrective Action Requests (CARs), Fifteen (15) Clarification Requests (CLs) which have been satisfactorily closed, and 01 Forward Action request (FAR) has been raised. All findings raised by VVB are addressed by PP. Revised PDMR and supporting documents were submitted to VVB by PP for review. As per opinion of VVB the documents and Joint PDMR, were found to be in compliance with VCS requirements.

The validation has been performed using a risk-based approach, as described above. The total ex-ante GHG emission removals over the 30-year crediting period are **179,711 tCO₂e** with annual removals of **5,990 t CO₂e/year**.

Crediting Period: 01-March-2018 to 29-February-2048

The non-permanence risk rating (%)	20%
If applicable, the Long-term Average (LTA), whether it has been properly updated, and if it has been reached.	1,69,623 tCO ₂ e (LTA cap for ex-post calculations). The LTA cap will reach on 21 st year (2037) from the start date.

Validated estimated GHG emission reductions and carbon dioxide removals for the project crediting period:

Vintage period	Estimated baseline emissions	Estimated project emissions (tCO ₂ e)	Estimated leakage emissions	Estimated buffer pool allocation	Estimated reduction VCU (tCO ₂ e)	Estimated removal VCU (tCO ₂ e)	Estimated total VCU issuance (tCO ₂ e)
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	ons (tCO2e)		ons (tCO2e)	on (tCO2e)			
01-March-2018 to 31-Dec-2018	0	1,284	44	257	0	1,240	984
01-Jan-2019 to 31-Dec-2019	0	3,752	138	750	0	3,614	2,864
01-Jan-2020 to 31-Dec-2020	0	6,393	274	1,279	0	6,120	4,841
01-Jan-2021 to 31-Dec-2021	0	10,117	471	2,023	0	9,646	7,622
01-Jan-2022 to 31-Dec-2022	0	13,115	732	2,623	0	12,384	9,761
01-Jan-2023 to 31-Dec-2023	0	14,627	1,010	2,925	0	13,617	10,692
01-Jan-2024 to	0	13,192	1,290	2,638	0	11,901	9,263

31-Dec-2024							
01-Jan-2025 to 31-Dec-2025	0	11,837	1,571	2,367	0	10,266	7,899
01-Jan-2026 to 31-Dec-2026	0	11,888	1,851	2,378	0	10,038	7,660
01-Jan-2027 to 31-Dec-2027	0	11,759	2,131	2,352	0	9,628	7,277
01-Jan-2028 to 31-Dec-2028	0	11,552	2,411	2,310	0	9,141	6,831
01-Jan-2029 to 31-Dec-2029	0	11,414	2,691	2,283	0	8,722	6,440
01-Jan-2030 to 31-Dec-2030	0	11,644	2,971	2,329	0	8,673	6,344
01-Jan-2031 to	0	11,950	3,251	2,390	0	8,699	6,309

31-Dec-2031							
01-Jan-2032 to 31-Dec-2032	0	12,396	3,532	2,479	0	8,864	6,385
01-Jan-2033 to 31-Dec-2033	0	9,848	3,812	1,970	0	6,036	4,067
01-Jan-2034 to 31-Dec-2034	0	1,022	4,092	204	0	-3,070	-3,274
01-Jan-2035 to 31-Dec-2035	0	3,930	4,372	786	0	-442	-1,228
01-Jan-2036 to 31-Dec-2036	0	-3,647	4,652	-729	0	-8,299	-7,570
01-Jan-2037 to 31-Dec-2037	0	-3,910	4,932	-782	0	-8,842	-8,060
01-Jan-2038 to	0	12,076	5,212	2,415	0	6,863	4,448

31-Dec-2038							
01-Jan-2039 to 31-Dec-2039	0	13,877	5,493	2,775	0	8,384	5,609
01-Jan-2040 to 31-Dec-2040	0	12,507	5,773	2,501	0	6,735	4,233
01-Jan-2041 to 31-Dec-2041	0	12,260	6,053	2,452	0	6,207	3,755
01-Jan-2042 to 31-Dec-2042	0	12,044	6,333	2,409	0	5,711	3,303
01-Jan-2043 to 31-Dec-2043	0	11,991	6,613	2,398	0	5,378	2,979
01-Jan-2044 to 31-Dec-2044	0	12,249	6,893	2,450	0	5,356	2,906
01-Jan-2045 to	0	12,532	7,173	2,506	0	5,359	2,853

31-Dec-2045							
01-Jan-2046 to 31-Dec-2046	0	12,818	7,454	2,564	0	5,364	2,801
01-Jan-2047 to 31-Dec-2047	0	13,243	7,734	2,649	0	5,510	2,861
01-Jan-2048 to 29-Feb-2048	0	2,183	1,275	437	0	908	471
Total	0	291,944	112,233	58,389	0	179,711	121,323

5.3 Verification conclusion

The verification activities conducted by CCIPL included:

- Assessment of the grouped project (including 1st PAI) compliance with VCS rules/requirements and the applied baseline and monitoring methodology to confirm all the requirements of validation (including eligibility of AFOLU projects and grouped project, applicability of the applied baseline and monitoring methodology, baseline scenario, additionality, permanence risk, data and parameters at validation, monitoring plan including parameters, ex-post carbon removal calculation, global and local stakeholders consultation and addressal of comments, environmental analysis, SDG benefits from the project) .
- Collection of information, documents and data supporting the reported GHG removals.
- Assessment of biomass inventory and GHG calculation spreadsheets^{02/}.
- Assessment of monitoring practices on the field^{14/}.
- Assessment of information management system.

- Assessment of whether the project has been implemented in accordance with the VCS Joint PD & MR; and
- Assessment of whether the provisions made in the monitoring plan were consistently and appropriately applied.

VVB has raised 15 clarification requests (CLs) and 08 corrective action requests (CARs) for the 1st Periodic Verification, all of which have been successfully closed.–Zero (00) Forward Action Request (FAR) has been raised during this joint validation and 1st verification.

The total achieved GHG removals for this monitoring period as per the ex-post carbon calculation spreadsheet^{t/02/} is **65,813** tCO₂e. The non-permanence risk rating is kept at 20%. So, the VCUs eligible for issuance after deduction of buffer pool credits is **52,381** tCO₂e (Round down value). Since $LTA > C_{AR-CDM,t}$, the credits can be issued.

Verification Period: 01-March 2018 to 30 - September-2024

Verified GHG emission reductions and carbon dioxide removals in the above verification period:

For projects required to assess permanence risk:

The non-permanence risk rating (%)	20%
If applicable, the Long-term Average (LTA), whether it has been properly updated, and if it has been reached.	1,69,623 tCO₂e. VVB confirms that the PP has correctly updated the Long-Term Average (LTA) values based on ex-post calculations. Upon review of the ex-post carbon calculation sheet^{t/02/}, VVB confirms that the LTA has not yet been reached. According to the updated LTA calculations, the LTA is projected to be reached in the year 2037, which corresponds to the 21st year from the project start date.
Whether a loss has been appropriately accounted for, in accordance with the VCS Program rules, if applicable.	N/A

Verified achieved GHG emission reductions and carbon dioxide removals for the project crediting period:

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Buffer pool allocation (tCO ₂ e)	Reductions VCUs (tCO ₂ e)	Removals VCUs (tCO ₂ e)	Total VCU issuance (tCO ₂ e)
01-Mar-2018 to 31-Dec-2018	0	8,741	174	1,748	0	8,567	6,819
01-Jan-2019 to 31-Dec-2019	0	10,461	208	2,092	0	10,253	8,160
01-Jan-2020 to 31-Dec-2020	0	10,461	208	2,092	0	10,253	8,160
01-Jan-2021 to 31-Dec-2021	0	10,461	208	2,092	0	10,253	8,160
01-Jan-2022 to 31-Dec-2022	0	10,461	208	2,092	0	10,253	8,160
01-Jan-2023 to 31-Dec-2023	0	10,461	208	2,092	0	10,253	8,160
01-Jan-2024 to 30-Sep-2024	0	6,104	121	1,221	0	5,983	4,762
Total	0	67,149	1,336	13,340	0	65,813	52,381

5.4 Ex-ante vs Ex-post ERR Comparison

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-Mar-2018 to 31-Dec -2018	1,240	8,567	(+)18.61	Based on the review of VCS PDMR ^{/01/} , ER sheets ^{/02/} and onsite inspections ^{/i-1-i-22 /} VVB concludes that the percent difference in total achieved reduction/removal and Ex post estimated reduction/removals might be due to following reason: First, the actual emission reduction achieved might be more or less similar compared to the estimate demission reduction due to less difference in plantation density. Second, difference in growth parameter (DBH and height) is based on the secondary data and actual recorded data in the field.
1-Jan-2019 to 31-Dec- 2019	3,614	10,253		
1-Jan-2020 to 31-Dec-2020	6,120	10,253		
1-Jan-2021 to 31-Dec-2021	9,646	10,253		
1-Jan-2022 to 31-Dec-2022	12,384	10,253		
1-Jan-2023 to 31-Dec-2023	13,617	10,253		
1-Jan-2024 to 30-Sep-2024	6,945	5,983		
Total	53,566	65,813		

APPENDIX 1: ABBREVIATIONS

AGB	Above Ground Biomass
AFOLU	Agriculture, Forest and other Land Use
ARR	Afforestation, Reforestation and Revegetation
BEF	Biomass Expansion Factor
BGB	Below Ground Biomass
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Limited
CO₂e	Carbon Dioxide Equivalent
CL	Clarification Request
DBH	Diameter at breast height
DW	Dead Wood
GIS	Geographical Information System
KML	Keyhole Markup Language
LULC	Land Use Land Cover
LULUCF	Land use, Land-use Change, and Forestry
FA	Final Approval
FAR	Forward Action Request
FVR	Final verification Report
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
IR	Internal resource
MP	Monitoring Period
MR	Monitoring Report
PAI	Project Activity Instance
PD	Project Design

PP	Project Proponent
QC/QA	Quality control /Quality assurance
SOC	Soil Organic Carbon
TA	Technical Area
TR	Technical Review
VVB	Validation & Verification Body
VVS	Validation and Verification Standard
VCS	Verified Carbon Standard
VCU	Verified Carbon Unit

APPENDIX 2: COMMERCIALLY SENSITIVE INFORMATION

VVB confirms that certain commercially sensitive information—such as land ownership documents, agreements between farmers and Project Participants, and details of the benefit-sharing mechanism—was excluded from the public version of the PDMR. These documents were made available to the audit team during the on-site visit and were also provided during the VVB desk review. VVB further confirms that the exclusion of these documents from public disclosure is valid and acceptable, as these items do not fall within the scope of Section 3.5.4 of the VCS Standard v4.7^{B01}.

APPENDIX 3: LIST OF DOCUMENTS

S.N O.	Document Name	Version
01	VCS PDMR	v1.0 25 th October 2024 v1.1, 26 th November 2024 v1.1, 19 th December 2024 v3.0 29 th April 2025 v4.0 21 st November 2025 v5.0 06 th January 2026
02	ER Ex ante 4000 ha ER Ex ante PAI-1 ER Ex post PAI-1	CO ₂ e Calculation Sheets (ex-ante and ex-post sheets)
03	KML files i. Forest Non-Forest Shapefile ii. Land Use and Land cover Shapefile iii. Project Boundary KML File iv. Geoteg Final 3560 KML.kml	
04	NPRT i. AFOLU-Non-Permanence-Risk-Report-Calculation-Tool-v4.2-Draft 15102024 ii. VCS_NPR_REP_3560_3_1_2023_9_30_2024 iii. AFOLU_NPRT_Notes_3560 iv. Financial Viability a) Finacial Viability_3560	

	b) Nursery Bills v. NPRT External Risks - a). Fire risks - b). Geological Risks - c). Impact Assessment Report - d). Pest and disease risk - Extreme Weather - Fire risks - Geological risk - Pest and disease risk	
05	Agreements i. MFI Farmer Agreements (for spp. – Mango) ii. Greenmile Agroforestry Private Limited Farmer's Agreements (for spp. – Red Sander) iii. Outreach Agreement (for spp.- Guava) iv. Service agreement Board of directors' meetings: v. Board Meeting discussion MFI vi. Board meeting Photo 10-01-2018	
06	Management manual and SOPs i. Management Manual 3560_19122024 ii. Resources Management Manual 3560 iii. SOP_3560 iv. Standard Operating Procedure for New PAIs v. Management Manual 3560_(26112024)	
07	Stakeholder Consultations i. Invitation Letter (Greenmile Agroforestry private limited, MFI and Outreach) ii. MOM (Greenmile Agroforestry private limited, MFI and Outreach) iii. LSC Attendance Sheet (MFI and Outreach)	

	iv. Feedback (Greenmile Agroforestry Private limited, MFI and Outreach)	
	v. 26.01.2018 GD nellore full detail-1	
	vi. LSC Carbon Minutes of Meeting - MFI _ 2018 - 1st meeting	
08	Grievance Mechanism Grievance logbook Greenmile grievance Grievance Outreach Grievance pictures Naren Resume	
09	Governing Policies Policy_on_Prevention_of_Sexual_Harassment_of_Women(Posh) Code_of_Conduct Constitution of India Code+of+Conduct Policy+on+Prevention+of+Sexual+Harassment+of+Women+(Posh)	
10	Project Start Date proof Nursery Bills Time and date stamped photographic evidence (Lakshamma and Murugan farmers) of Chittor district of Andhra Pradesh	
11	Double Counting Declaration	
12	Service Agreements Carbon_Consulting_Service Agreement for Outreach Projects Submitted to DOE Carbon_Revenue sharing_Service A_Agroforestry 3560 MFI Red Sander_ Greenmile Agroforestry Private Ltd. -Infinite	
13	Sapling Distribution Records	
14	Employment and Salary slip	
15	PRA Report	
16	Soil Evidence Andhra Pradesh: https://apenvis.nic.in/soil.html	

	Tamil Nadu: https://agritech.tnau.ac.in/agriculture/agri_soilgroups.html#:~:text=The%20major%20soil%20groups%20of,soils%20(3%20per%20cent)%20and Madhya Pradesh: Kullu, A., Mohanty, A., Prasad, B., Rajasmita, R., Dehury, P. P., Pani, P., ... & Paital, B. (2021). Soil Type as One of the Major Contributing Factors for Top Ten Agri-Producing States of India. Journal ISSN, 2766, 2276	
17	Land Titles	
18	CVs of Management Team	
19	Training Records	
20	Incorporation Development Document	
21	Raw data sheets	
22	Equations/Data Source Used/growth model a). Collar diameter/Collar Girth/ Diameter/Girth at breast height (DBH/GBH : i. Mango- https://krishikosh.egranth.ac.in/assets/pdfjs/web/viewer.html?file=htps%3A%2F%2Fkrishikosh.egranth.ac.in%2Fserver%2Fapi%2Fcore%2Fbitstreams%2F3471dde7-11cf-482c-801f-9cb015a8aa0e%2Fcontent ii. Guava - https://www.currentscience.ac.in/Volumes/120/10/1627.pdf iii. Red Sander- 172774.pdf b). Allometric Equations used: i. Mango: $Y = 30.40 * EXP(-5.07 * EXP(-0.26 * \text{collar diameter}) + 1.277$ ii. <u>Biomass production and carbon stocks estimate in mango orchards of hot and sub-humid climate in east</u> iii. Guava: $Y = (3.264X^{1.012}) + 3.446$ https://www.currentscience.ac.in/Volumes/120/10/1627.pdf c). Volumetric Equations Used: iii. Red Sander: $v^{1/2} = -0.144504 + 2.943115 * D$	

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	Madhya Pradesh State Forest Policy (2005)- https://mpforest.gov.in/ecotourism/pdf/forestpolicy.pdf	
25	State Government Websites for Legal Land titles https://meebhoomi.in/ (Andhra Pradesh) https://eservices.tn.gov.in/eservicesnew/index.html (Tamil Nadu) https://mpbhulekh.gov.in/mpbhulekh.do (Madhya Pradesh)	
B01	VCS and CDM requirements/guidelines - VCS Program Guide (v4.4, dated 29/08/2023) - VCS Standard (v4.7, dated 16/04/2024) - Program Definitions (v4.5, dated 16/04/2024) - Registration & Issuance Process (v4.5, dated 10/14/2024) - AFOLU Non-Permanence Risk Tool (v4.2, dated 03/05/2024) - VCS Validation and Verification Manual (v3.2, dated 19/10/2016) - Sampling and Surveys for CDM Project Activities and Programmes of Activities v09.0	
B02	Methodology applied: AR ACM0003: Afforestation and reforestation of lands except wetlands v2.0	
B03	Tool applied: - ar-am-tool-02-v1.pdf - ar-am-tool-03.pdf - ar-am-tool-08-v4.0.0.pdf - ar-am-tool-12-v3.1.pdf - ar-am-tool-14-v4.2.pdf - ar-am-tool-15-v2.0.pdf - ar-am-tool-16-v1.1.0.pdf	
B04	Other GHG Program CDM: CDM: Project Activities (unfccc.int) GSF: GSF Registry (goldstandard.org) Plan Vivo: Projects Plan Vivo Foundation VCS Project Page: https://registry.terra.org/app/projectDetail/VCS/3560	
B05	State government websites for verifying land titles. Madhya Pradesh - https://mpbhulekh.gov.in/mpbhulekh.do	

	Tamil Nadu- Andhra Pradesh -	
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APPENDIX 4: FINDING LOGS

• Table 1. FAR from this Validation and Verification

FAR	01	Section no.	Baseline and additionality applicability demonstration for future instance	Date: 13/11/2025
Description of FAR				
In response PRR comments, since the Project Proponent has stated that future Project Activity Instances (PAIs) will follow the same baseline scenario and additionality demonstration established for the initial PAI, the verifying VVB shall assess each newly added geographic area to confirm consistency with or greater conservativeness than the original justification as per the VCS requirements. Thus, VVB raised a FAR01 to the next verification to check that the same baseline and additionality (as initial PAI) applicability demonstration for the future PAIs within the grouped area as per section 3.6.10–3.6.17 of VCS standard requirements.				
Project participant response				Date:
Documentation provided by Project participant				
VVB assessment				Date:

Table 2: CL from this Validation and Verification

CL	01	Section no.	1.1, 1.5 VCS PDMR & Ex-ante calculation sheet	Date: 11/11/2024
Description of CL				
Under section 1.5.1 of the VCS PDMR, it has been stated that, <i>“The project consists of plantation of Mango to establish green cover in private land.”</i> However, as stated in section 1.1 of the VCS PD and ex-ante carbon calculation sheet, the project involves plantation of three species: Mango, Red Sanders and Guava. PP shall provide the clarification on the tree species included in the project activity.				
Project proponent response				Date: 25/11/2024

The three species mentioned above—Mango, Red Sander, and Guava—are integral to the project area and will play a significant role in enhancing the overall green cover of the region. Suggested changes have been made in Section 1.1 and 1.5 of VCS PDMR.	
Documentation provided by Project proponent	
Revised VCS PDMR	
VVB assessment	Date: 05/12/2024
Based on the review of revised VCS PDMR, VVB confirms that the PP has rectified the issue by revising the PDMR to make more transparent on tree species planted as part of project activities i.e., Mango, Guava and Red Sanders and same has been confirmed through on-site inspection/interviews by visiting plantation sites. However, PP shall clarify on the term bamboo in section 6.2 and 7.3 of VCS PDMR <i>“All the bamboo are counted in the sample land parcel by the MRV personnel for calculating the exact survival rate”</i> <i>“Estimation of bamboo above ground biomass”</i> CL is still open.	
Project proponent response	Date: 09/11/2024
PP has rectified the term in section 6.2 and 7.3 of VCS PDMR. <i>“All the trees (mango, guava and red sander) are counted in the sample land parcel by the MRV personnel for calculating the exact survival rate”</i> <i>“Estimation of tree above ground biomass”</i>	
Documentation provided by Project proponent	
1. VCS PDMR	
VVB Assessment	Date: 25/12/2024
VVB based on the review of VCS PDMR confirms that only Mango, Guava and Red Sander are the species that have been planted and counted in the sample land parcel.	

CL has been closed.

CL	02	Section no.	1.1, 1.5 & 1.13 VCS PDMR [Project Location]	Date: 11/11/2024
Description of CL				
According to section 3.11 of VCS Standard v4.7, <i>“The project location must be provided to accurately describe project characteristics and to demonstrate a project’s conformance with other requirements, such as project ownership and regulatory compliance”</i> Upon reviewing the VCS PDMR, it has been observed that multiple sections describe project location inconsistently: • Section 1.1 states that <i>“The project initially implemented in various district of <u>Andhra Pradesh, Tamil Nadu and Madhya Pradesh</u> on multiple small and marginal land parcels of farmers.”</i> • Section 1.5 states that <i>“The project activity includes <u>Andhra Pradesh and Tamil Nadu</u> states of India.”</i> • Section 1.5.1 states that <i>“The Project Participant confirms that the new project activity instances will be among the designated geographical areas (<u>Gujarat and Rajasthan states of India</u>) as specified in the project description”</i> and the same section describes that <i>“Initially, the project has been implemented in <u>Andhra Pradesh and Tamil Nadu</u>, and further may extend to other states of India”</i>. • Section 2.1 states that <i>“The project has been implemented in the states of <u>Rajasthan and Gujarat</u>, with plans to expand to other states in India”</i> In view of the above inconsistencies PP shall clarify on the accurate location of the project 1st Instance. While doing so, PP shall clearly describe the grouped project boundary in the relevant sections of PDMR in compliance with section 3.11.1 & 3.11.2 of VCS Standard v4.7.				
Project proponent response				Date: 25/11/2024

- In response to CL-02, PP has updated the project locations for the 1st Instance (i.e., Andhra Pradesh, Tamil Nadu, and Madhya Pradesh) and rectified other inconsistencies in Sections 1.1, 1.5, 1.5.1, and 2.1 of the VCS PDMR. These updates describe the grouped project boundary in compliance with Sections 3.11.1 and 3.11.2 of the VCS Standard v4.7. KML files have been revised as per the requirement of section 3.11.1 and 3.11.2 of VCS standard 4.7. - It was identified that Gujarat and Rajasthan were erroneously included in Section 1.5.1 of the PDMR. The current project activities for the 1st Instance (PAI-1) are being implemented in the states of Andhra Pradesh, Tamil Nadu, and Madhya Pradesh.	
Documentation provided by Project proponent	
Revised VCS PDMR, revised KML files	
VVB assessment	Date: 05/12/2024
Based on the review of the revised VCS PDMR, VVB confirms that the PP has resolved the issue by updating the PDMR to include accurate 1st PAI locations where the project has been implemented, namely Andhra Pradesh, Madhya Pradesh, and Tamil Nadu and the same was validated through a review of GIS KML files. Additionally, during on-site inspections and interviews, VVB visited randomly selected plots within Andhra Pradesh and Madhya Pradesh to further confirm the implementation. CL has been closed.	

CL	03	Section no.	1.4.2 VCS PDMR [Harvesting & LTA]	Date: 11/11/2024
Description of CL				
Section 1.4.2 of the VCS PD states that the project does not include the harvesting of tree species. However, section 1.4 (Q5) of NPR report mentions that harvesting is included in the project. Furthermore, LTA calculations has been provided in Ex ante and Ex posts sheets and in section 7.5 of VCS PDMR and Project management plan also includes harvesting plan for the project. Therefore, PP shall provide a clear demonstration of whether the project includes harvesting or not. While doing so, PP shall ensure that the harvesting cycles and replanting plans are transparently detailed in the relevant sections of the PD as well as the SOPs in accordance with the requirements of section 3.2.12 & 3.2.20 of the VCS Standard, v4.7.				

Project participant response		Date: 25/11/2024
- The erroneous statement has been rectified. - The project activity involves the harvesting of tree species in accordance with the project implementation and management plan and required changes have been made in section 1.12 of VCS PDMR. - Necessary changes have been incorporated throughout the relevant sections of the project SOP. - In response to CL-03, the Project Proponent (PP) has addressed the inconsistency by specifying the harvesting timelines for Red Sander at 15 years and Guava at 15 years. These updates have been made in Section 1.4.2, aligned with Section 1.4 (Q5) of the NPR report, Ex-ante and Ex-post calculations, LTA and Section 7.5 of the VCS PDMR and Project Management Plan. - Supporting documentation has been provided by the project participant.		
Documentation provided by project participant		
Revised VCS PDMR, NPR report, ex-ante and ex-post with LTA calculation, Project implementation and management plan, SOP.		
VVB assessment		Date: 05/12/2024
Based on the review of revised VCS PDMR, VVB confirms that the PP has addressed the issue as per raised CL and the proposed activity includes the harvesting of tree species i.e., Red Sanders and Guava at 15 years for both species. The same has been confirmed through reviewing the project management plan, SOPs. Furthermore, during on-site inspection/interviews, VVB has reviewed the agreements and confirms that these agreements are legally binding, they are structured in a manner that requires the landowners (farmers) involved in the project to maintain the project for the entire project longevity. These agreements have been signed by the project implementor and farmers, and during on-site inspections/interviews with farmers and the PP, it was confirmed that farmers are aware of their obligation to sustain project activities until the end of the project activity. CL is closed.		

CL	04	Section no.	1.9 VCS PDMR [Ownership]	Date: 11/11/2024
Description of CL				

As per section 3.7 of the VCS standard v4.7,

“Project and jurisdictional proponents must demonstrate that they have the legal right to control and operate project or program activities.”

Section 1.7 of the VCS PDMR describes that *“The project proponent, Infinite Environmental Solutions Limited, along with Implementation partner i.e. Mangrove Foundation of India (MFI) through detailed in Section 1.6 and 1.7 above holds the contractual right to the land within the project boundary for the Mango, Guava and Red Sander to be planted, and the associated GHG emission removals (carbon credit agreement). Farmers have vested rights to carbon credits with NGOs under a carbon credit contractual agreement. PP is allowed to validate, issue, and trade carbon credits”*.

The above statement is not consistent with farmer agreement which states that farmers have been assigned project management rights and carbon credits with Mangrove Foundation.

It remains unclear to VVB how PP (Infinite solutions) holds project management rights and carbon credit rights. Therefore, PP shall clearly demonstrate its ownership of the project activities and carbon credits, substantiated with relevant supporting evidence.

Project proponent response

Date: 25/11/2024

- Section 1.7 of the VCS PDMR has been revised in accordance with Section 3.7 of the VCS Standard v4.7. The Project Proponent (PP), Infinite Environmental Solutions Limited, along with its implementation partners—Mangrove Foundation of India, Outreach Private Limited, and Greenmile Agroforestry Private Limited—has been granted the legal rights to carbon credits.
- According to the carbon credit agreement between the farmers and the project implementer, the project implementer holds full rights to the carbon credits and commits to providing technical support throughout the project’s implementation and management phases.

Ownership Documentation:

- Ownership is demonstrated through signed agreements between the project implementer and farmer landowners.

The agreement also specifies the following:

- Farmers have consented to cultivate Mango, Guava, and Red Sander on their land for a project duration of 40 years.
- Income distribution from the project will allocate 30% of revenue to the institution and 70% to the farmers.
- Funds will be disbursed directly to farmers through institutional channels based on their banking details.
- Farmers have provided their explicit consent to these terms.
- This updated documentation ensures alignment with the required standards and reinforces the transparency and equity of the project framework.

Documentation provided by Project proponent

Copies of agreements for the rights of ownership of the project activities between PP and the three other entities are provided, Farmers agreements, Revised VCS PDMR

VVB assessment

Date: 05/12/2024

Apropos to this finding, PP has addressed the issue by revising Section 1.8 of the VCS PDMR to provide transparency regarding the ownership of land and carbon credits. As per the revised section, the lands are privately owned by farmers, while the carbon credits are held by PP Infinite Solutions.

Through on-site inspections and interviews, VVB confirmed that other implementation partners have entered into agreements with farmers to implement the proposed activities. In these agreements, farmers have assigned management and carbon rights to the implementation partners. Subsequently, these implementation partners have entered into service agreements with PP Infinite Solutions, wherein the carbon rights have been transferred to PP (as specified in Section 8.3 of the service agreements). This arrangement complies with Section 3.8(6) of the VCS Standard v4.7.

However, this finding remains unresolved due to the following reasons:

- Section 2.1.1 of the VCS PDMR states that carbon rights are held by other implementation partners, which contradicts the information in Section 1.8.
- Section 1.1 of the PDMR indicates that the first PAI will be scaled up to 4,000 ha. This is not in compliance with Section 3.11.4 (2 & 3) of the VCS Standard v4.7.

Section 3.11.4 of VCS Standard v4.7:

- *Projects where the proponent does not yet control the entire area at validation must ensure that the entire project area (as specified in Section 3.11.2) is validated as if it were under control and ready for implementation.*
- *If less than 80% of the total proposed project area is under control at validation, the following conditions apply:*

- a) *The additionality test must apply to both the current and future project areas.*
- b) *The monitoring plan must be adaptable to changes in the project's size.*
- c) *The project must be verified within five years of validation, at which point the project size becomes fixed.*

VVB noted that the project is undergoing joint validation and verification at this stage, with plans to scale the first PAI to 4,000 ha in the upcoming years. This scaling is inconsistent with Clause (c), which requires the project area to be under control and ready for implementation at validation.

Therefore, PP shall ensure control over the project area and demonstrate that the project is ready for implementation, as required by the above clauses. Additionally, the PP shall resolve inconsistencies in carbon rights ownership within the VCS PDMR to ensure alignment across all sections.

CL is still open.

Project proponent response

Date: 09/12/2024

- Section 2.1.1 of VCS PDMR has been aligned with section 1.8 of VCS PDMR regarding the carbon credit agreement

"Farmers have vested rights to carbon credits with project implementer under a carbon credit contractual agreement. PP is allowed to validate, issue, and trade carbon credits. As well as PP will allocate carbon credit sales earnings to farmers in accordance with the contractual arrangement (carbon credit agreement)."

- Section 1.1 of VCS PDMR has been revised as per the section 3.11.4 of VCS standard 4.7v.

"The project proponent has validated the project area of PAI-1 (894.06 ha) in accordance with Section 3.11.4 of the VCS Standard 4.7v, as outlined in Section 3.11.2 of the same standard." As it is grouped project, project activity will be implemented over 4000 ha area in future instances. 100% of the area of PAI-1 is under control of PP through contractual agreement.

Moreover, PP has demonstrated the future instance plan in implementation and monitoring plan for furthers plantation activity as per requirement of section 3.11.4 of VCS standard 4.7.

Documentation provided by Project proponent

1. VCS PDMR
2. Implementation and management plan

VVB Assessment

Date: 25/12/2024

1. Based on the review of section 2.1.1 of revised VCS PDMR, VVB confirms that the holder of rights of carbon credits have been made consistent with the information provided in section 1.8 of the PDMR i.e. Project Proponent (Infinite Solutions) .The rights has been transferred from farmers to Implementation

partners via agreements and subsequently implementation partners transferred carbon rights with PP.

2. Based on the review of the PP response and the VCS PDMR, VVB confirms that the total area validated for the first Project Activity Instance (PAI) is 894.06 ha, for which both validation and the first verification have been completed. Contractual agreements and KML files for the same have also been provided. Therefore, the VVB concludes that 100% of the area for the first PAI is under the control of the PP. Furthermore, as this is a grouped project, the PP plans to expand the project up to 4,000 ha by adding further instances. This approach is deemed valid and in compliance with Section 3.11 of the VCS Standard v4.7.

CL has been closed.

CL	05	Section no.	1.9 VCS PDMR [Start Date]	Date: 11/11/2024
Description of CL				
As per section 3.8 of the VCS standard v4.7,				
<i>“The project start date of an AFOLU project is the date on which activities that led to the generation of GHG emission reductions or removals are implemented (e.g., preparing land for seeding, planting, changing agricultural or forestry practices, rewetting, restoring hydrological functions, or implementing management or protection plans).”</i>				
In Section 1.8 of the VCS PD the start date is mentioned as 1 st March 2018. However, no evidence has been provided to verify the start date of 01/03/2018, as required by Section 3.8 of the VCS Standard v4.7.				
Project proponent response				Date: 23/11/2024
The PP is submitting supporting documents to evidence the plantation date:				
A nursery bill is enclosed as proof of the plantation activity carried out within the project area, confirming the project start date for emission reductions or removals implemented in Andhra Pradesh. Since the planting activities commenced on March 1, 2018, this date is considered the official project start date.				
Documentation provided by Project proponent				
Nursery Bill and Project Implementation and management Plan				
VVB assessment				Date: 05/12/2024

Based on the review of the supporting evidence “Nursery Bill Guava 01-03-2018”, “Nursery bill MFI 10-03-2018” and “Red sander Greenmile Bill (2)” confirms that the start of the project is 01/03/2018. The same was verified during the on-site inspection/interviews by visiting the first plantation site. In the opinion of VVB, the start date is in compliance with the requirement of VCS standards v4.7 as this is the date when GHG removal from the first plantation took place.

CL has been closed

CL	06	Section no.	2.1.2 VCS PDMR [LSC]	Date: 11/11/2024
Description of CL				
According to section 3.18.3 of the VCS Standard v4.7, <i>“The project proponent shall take due account of all input received during the stakeholder consultation and through ongoing communications. The input from stakeholders may require updates to project design which shall be reported as a project description deviation. Where the project proponent does not update the project design, the project proponent shall justify why updates are not appropriate. The project proponent shall demonstrate to the validation/verification body what action it has taken in respect of the stakeholder consultation as part of validation, and in respect of ongoing communications as part of each subsequent verification”.</i> Section 2.1.2 of VCS PD states, <i>“Regardless of whether changes were made, the rationale behind the feedback collection process, the review of stakeholder input, the team’s engagement, and the regular updates were communicated clearly”.</i> The above statement is unclear and appears anecdotal. Therefore, PP shall provide details of all stakeholder comments received and how they were addressed.				
Project participant response				Date: 25/11/2024
There was an editorial error in section 2.1.2, that has now been corrected. The inputs/feedback received during the LSC have already been incorporated in the same section. Additionally, the section has now been revised in compliance with the section 3.18.3 of the VCS standard v4.7.				
Documentation provided by project proponent				

1. VCS PDMR

2. LSC Feedback

3. MoM

VVB assessment
Date: 05/12/2024

Apropos to this finding, PP has resolved the issue by removing inconsistent statements in Section 2.1.2 of the PDMR to provide greater clarity on the LSC meeting and associated feedback. Furthermore, VVB has reviewed the supporting evidence, including the "LSC feedback" and "MoM," and confirms that all feedback received from farmers is positive regarding the implementation of the proposed activities. Therefore, in the opinion of VVB the proposed project design is valid and compliance with AFOLU safeguards of VCS Standard v4.7.

CL has been closed

CL	07	Section no.	3.2 VCS PDMR, [Applicability of Methodology]	Date: 11/11/2024
Description of CL				
PP shall clarify on the following i. According to the UNFCCC CDM, <i>projects with net anthropogenic GHG removals by sinks of less than 16,000 tons of CO₂ per year are classified as small-scale, while projects with removals exceeding 16,000 tons per year are classified as large-scale</i> (https://cdm.unfccc.int/methodologies/documentation/meth_booklet.pdf) Section 3.2 of the VCS PDMR states that the applied methodology is CDM AR-ACM0003 v2.0 which is large scale. However, VVB has observed that the ex-ante estimates of project activity are 9,533 tCO₂e/year. As a result, it is unclear how the AR-ACM0003 methodology is applicable to the project. Therefore, PP is required to provide clarification on the application of this methodology. ii. According to the paragraph 3 (a) of applied methodology, <i>"The land subject to the project activity does not fall in wetland category"</i> Section 3.4 of the VCS PDMR clearly states that the baseline scenario consists of agricultural lands where rice is cultivated in states of Andhra Pradesh, Madhya Pradesh and Tamil Nadu.				

VVB is unclear whether rice plots are included in these AR project activities. If so, PP shall clarify how the areas previously used for rice cultivation were prepared for the project activities. Furthermore, PP shall provide wetland analysis to demonstrate that the project areas under 1st PAI do not fall under the wetland category.	
Project proponent response	Date: 25/11/2024
i. Project activity covers total 894.06 ha of area which is implemented during 2018-2023. Project is planned to be implemented over 4000 ha area which will qualify the applicability conditions of >16000tCO₂/yr estimated removals. ii. Project does not involve the land parcels which are classified as wetlands or where rice cultivation was being practiced. Necessary changes have been made in the PDMR also. LULC maps are being provided as a proof for the land use land cover classes which clearly depicts that land parcels involved in the project were not wetlands in the baseline scenario.	
Documentation provided by Project proponent	
<i>Revised PDMR</i>	
VVB assessment	Date: 05/12/2024
i. This finding is subjected to the closure of Finding CL04 in this report. Additionally, PP has not sufficiently justified how the project meets the eligibility criteria for the statement, <i>"This tool is not applicable to small-scale afforestation and reforestation project activities,"</i> as per CDM AR-Tool 02. ii. After verifying the KML/shapefiles of the 1st project instance, VVB confirms that none of the plots overlap with water bodies or wetlands. This ensures compliance with the requirements of the applied methodology. Furthermore, Under the first project activity instance, there are no areas included having rice cultivation pre or post project activity. This was confirmed during the on-site inspection and interviews. For the future PAIs, PP has incorporated in the SOP that the farmers practicing Rice cultivation through puddle or flooding techniques will be excluded and in compliance with para 3(a) of applied methodology. CL is open.	
Project proponent response	Date: 16/12/2024
iii. This project is not a small-scale afforestation and reforestation project. As project is a grouped project and will be implemented over 4000 ha area which will lead to annual GHGs removal more than 16,000 tons of CO₂e. As per CDM	

methodology booklet, it is a large-scale Afforestation and Reforestation project activity.	
Documentation provided by Project proponent	
Revised PDMR	
VVB Assessment	Date:25/12/2024
Apropos to this finding, PP has addressed the issue by justifying the project compliance with CDM AR-Tool 02 in section 3.2 of the VCS PDMR. VVB based on the review of PP response, VCS PDMR and ER sheet confirms that the current annual ERs from the 1st PALare 9730tCOe. Since the project is grouped project and will be implemented in area up to 4000ha with inclusion of future instances and the annual ERs from this grouped project will cross the threshold of 16000tCO₂/yr. Therefore, the project could be considered as a large scale project and fulfills the applicability requirements of the applied methodology AR-ACM0003. CL has been closed.	

CL	08	Section no.	3.4 VCS PDMR, [Baseline Scenario]	Date: 11/11/2024
Description of CL				
According to section 3.13 of VCS Standard v4.7, <i>“The baseline scenario represents the activities and GHG emissions that would occur in the absence of the project activity. The baseline scenario must be accurately determined so that an accurate comparison can be made between the GHG emissions that would have occurred under the baseline scenario and the GHG emission reductions and/or removals that were achieved by project activities” and</i> According to section 3.6.13 of VCS Standard v4.7, <i>“The baseline scenario for a project activity shall be determined for each designated geographic area, in accordance with the methodology applied to the project. Where a single baseline scenario cannot be determined for a project activity over the entirety of a geographic area, the geographic area shall be redefined or divided such that a single baseline scenario can be determined for the revised geographic area or areas” and</i> Furthermore, according to section 3.6.16 (4) of the VCS Standard v4.7,				

“Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area” and

Upon reviewing the VCS PD, it has been observed that multiple sections describe the baseline land use scenario inconsistently:

- Section 1.1 states that *“activity that involves carbon sequestration on small and low productive agriculture land through *Mangifera indica* L. (Mango), *Psidium guajava* L. (Guava) and *Pterocarpus santalinus* Linn.f. (Red Sander) plantation activities in multiple states of India”*.
- Section 1.5 states that *“The land parcels which have been utilized for plantations were identified as degraded or continue to be degraded in the baseline with negligible vegetative cover”*
- Section 1.14 states that *“Prior to the implementation of the project activity, the lands in Phase-1 of the project activity were in a degraded or degrading state in Andhra Pradesh.*
- Section 3.4 states that *“it is evident that the project areas primarily consist of degraded and agricultural lands used for subsistence farming”*.

In view of above inconsistencies, PP shall clarify whether low-output agriculture is part of the baseline. While doing so, PP must ensure that the PD consistently describes the baseline scenario.

Furthermore, VVB has noted that the project activity is grouped project, and section 1.5.1 of the VCS PDMR specifies that land parcels included in the project activity must be cropland, degrading land, or low-productive lands. Therefore, PP shall clearly redefine the geographic areas so that a single baseline scenario can be determined, in compliance with Section 3.6.13 of the VCS Standard v4.7.

Additionally, PP shall provide a transparent demonstration of the land-use and management practices, as well as the inputs received in the project area prior to the project start, in accordance with appendix 1 of the applied methodology.

Project participant response	Date: 26/11/2024
• As suggested in accordance with 3.6.13, PP has described the baseline scenario for each state involved in the project. • Baseline scenario determined in the project description for the specified project activity and geographic area has been explained for each state involved in the project in section 3.4 of the revised VCS PDMR.	

- Inconsistency related to land condition before project implementation has been addressed. The land parcels which have been utilized for plantations were identified as degraded and continued to be degraded. - Land use and management practices has been demonstrated as agriculture (long-term agriculture cropland) with full tillage since decades in the section 3.4 of the revised PDMR and it fulfills the condition of appendix 1 of AR-ACM0003.	
Documentation provided by project participant	
Revised VCS PDMR, PRA surveys report.	
VVB assessment	Date: 05/12/2024
Apropos to this review finding, PP has addressed the issue by revising the PDMR, VB confirms that the baseline land scenario defined as degraded land, this refers to areas where agricultural activity is low-yielding, unproductive, and primarily practiced for basic survival involves Additionally, the VVB has reviewed the PRA response report, which indicates that the lands used for the proposed activities were subjected to high organic fertilizer usage, leading to low productivity and subsequent degradation. This was further verified through GIS KML file analysis and on-site inspections/interviews, which confirmed that farmers are no longer using the same lands for agricultural activities. In the opinion of VVB, the baseline land-use scenario of degraded and degrading lands is valid and represents a credible baseline scenario for the proposed activity. Despite the above, this finding cannot be closed due to the following reasons: - The PP must provide a complete and detailed PRA report. - The PP shall substantiate, with evidence, that the project lands are degraded and degrading, in accordance with the <i>CDM Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities</i>. - The PP has not adequately justified project compliance with Paragraph 3(b.ii) of applied methodology in Section 3.2 of the PDMR. CL is still open	
Project participant response	Date: 09/12/2024
- Detailed PRA report has been attached. - The demonstration and identification of land degradation were carried out by following the steps outlined in the AR-AM Tool “Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities” which provides a systematic approach for identifying land degradation. According to Procedure III of the tool it has been demonstrated that crop productivity and the use of inorganic fertilizers as key land drivers in the assessment of land degradation. The	

result of PRA survey indicates that chemical degradation, primarily driven by the excessive use of inorganic fertilizers, and biological degradation, manifested through a reduction in crop productivity, are significant factors contributing to the ongoing land degradation issues faced by the project area.	
Documentation provided by project participant	
1. VCS PDMR 2. PRA report	
VVB Assessment:	Date: 25/12/2024
1. VVB confirms that the detailed PRA report has been provided. 2. VVB confirms that PRA report has been provided as an evidence for the project area in accordance with the <i>CDM Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities</i>. However, this finding cannot be closed for following issues: The Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities outlines multiple scenarios under Sub-Clause C of Section C. However, VVB has observed that the PDMR unclear in demonstrating which specific scenario was selected to substantiate the claim that the lands are degraded or degrading. Therefore, the PP shall clearly demonstrate and justify the claim of degraded lands in compliance with the referenced tool. The acceptability of the provided evidence depends on the transparency and proper identification of the selected scenario. 3. Based on VCS PDMR, VVB confirms that PP has adequately justified project compliance with Paragraph 3(b.ii) of applied methodology in Section 3.2 of the PDMR i.e. “Soil disturbance attributable to the project activity does not cover more than 10 per cent of area in each of the following types of land, when these lands are included within the project boundary: (i) Land containing organic soils; (ii) Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to this methodology.	

As per implementation plan, dimensions of pits have been fixed at 0.3 x 0.3m. Plantation density remained less than 1666 plants per hectare throughout the project area. Activity results total $0.3 \times 0.3 \text{ m} \times 1666 = 149.94 \text{ m}^2$ soil disturbance per hectare. It concludes that total soil disturbance occurred due to project activity is 1.5% which is less than 10% and complies with applied methodology requirement.

CL is still open.

Project participant response

Date: 07/01/2025

PP has improved the section 3.4 of VCS PDMR. In which demonstration and identification of land degradation were carried out by following the steps outlined in the AR-AM Tool "Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities". According to scenario IV i.e. "A reduction in plant cover or productivity due to overgrazing or other land management practices" outlined in sub section C in section C for Procedure III consist with the result of PRA survey. It is concluded that use of inorganic fertilizers as key land drivers in the assessment of land degradation resultant to decrease the crop productivity. It is seen that there was decrease in the overall crop yield due to extreme weather events like temperature and precipitation also contributed in the land degradation.

Documentation provided by project participant

1. VCS PDMR

VVB Assessment

Date: 16/01/2025

VVB based on the review of revised VCS PDMR, VVB concludes that the demonstration of land degradation is carried out in accordance with *CDM Tool "Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities"*. According to the demonstration provided by PP, a reduction in plant cover or productivity has occurred in the project area due to excessive use of synthetic fertilizer. PRA report has been provided to VVB for the same which has been reviewed by VVB and found appropriate.

CL has been closed.

CL	09	Section no.	3.4 VCS PDMR [Baseline KMLs]	Date: 11/11/2024
Description of CL				
According to section 3.4 of VCS PDMR states that <i>"it is evident that the project areas primarily consist of degraded and agricultural lands used for subsistence farming"</i> and multiple sections of the PDMR describe the lands as degraded prior to project				

implementation. However, GIS analysis of the KML files for the project area shows presence of agriculture, vegetation cover, tree cover, or partial tree cover in the ten years prior to the project start date (refer to the figures below).

Therefore, it is unclear to the VVB how PP determined that the entire project ecosystem was degraded at least ten years before the proposed project start date. While doing so, PP shall provide evidence to demonstrate the project area is degraded in compliance with section 3.19.29 of VCS Standard v4.7.

Please refer to examples for reference below:

Doraswami



P Saraswati



Project participant response	Date: 26/11/2024
According to section 3.19.29 of VCS Standard v4.7 PDMR and KML files has been revised inline with the subsistence agriculture with low productivity degraded land. KML files has also been revised, additionally plots with tree present in the boundary has been removed from the project area.	
Documentation provided by project participant	
Revised PDMR and KML	
VVB assessment	Date: 05/12/2024

Based on the review of KML files provided by PP, VVB confirms that the plots have been updated accordingly aligned with PDMR, VCS program rules and methodology requirements. Furthermore, VVB confirms that the baseline land scenario defined as degraded land, this refers to areas where agricultural activity is low-yielding, unproductive, and primarily practiced for basic survival.

CL has been closed.

CL	10	Section no.	5.3 & 7.4 VCS PDMR [Leakage]	Date: 11/11/2024
Description of CL				
In section 1.19 of the PDMR, it has been stated that, <i><u>“This project is implemented to increase the vegetation cover on degraded or degrading land. The project plantation establishment did not result in displacement of agriculture activity or grassland. The project will economically sustain the community groups around the project region and at the same time contribute to the removals /reductions of the GHG emissions, thus aiding in climate change mitigation of the area. There is no displacement of agriculture activities and leakages are considered to be nil.”</u></i> Furthermore, in section 5.3 of the PD, it has been stated as, <i><u>“According to the baseline Study, prior to the project implementation, the project area is degraded land with subsistential agriculture, there are no grazing activities, so leakage emission attributable to the displacement of grazing activities is accounted as zero.”</u></i> The absence of leakage is insufficiently justified by the PP, as the above statement clearly indicates that subsistence agriculture is part of the baseline and also low-productive agricultural lands. Additionally, during the GIS analysis review, VVB observed that some project plots showed agricultural activities have been taken place at the project start date, which may classify them as <i>agricultural lands</i> (refer to figures below). P Saraswati				



M viswanadha naidu



Shankar Reddy



Therefore, PP shall account for and transparently demonstrate leakage resulting from the shifting of agricultural activities outside the project area in compliance CDM AR-Tool 15.

Project proponent response

Date: 26/11/2024

As suggested, Leakage has been accounted for the area which is being displaced due to tree circumference (0.5 m radius around each tree). Which results total 336 tCO ₂ as leakage.	
Documentation provided by Project proponent	
Ex-ante, Ex-post ER sheets, Revised VCS PDMR	
VVB assessment	Date: 05/12/2024
PP is requested to clearly demonstrate along with the evidence how the 0.5-meter radius was considered in the leakage calculations around each tree. Additionally, upon reviewing the Ex-ante and Ex-post sheets, VVB observed that the leakage values are hardcoded. Therefore, the PP is required to provide a detailed explanation and demonstration of the methodology used to estimate leakage in the ex-ante and ex-post sheet.	
CL is open.	
Project proponent response	Date: 16/12/2024
As per the study titled 'PERFORMANCE OF MANGO BASED AGROFORESTRY SYSTEM WITH DIFFERENT SUMMER VEGETABLES COMBINATIONS', the Full shade condition was considered as 0m to 0.5m (conservatively 0.5m) distance from the mango tree base. In this condition, land did not get full sunlight from 10pm to 3pm. Which is not suitable for agriculture. Hence, 0.5 m radius spherical area around each tree stem is considered displaced due to implementation of the project.	
Approach adopted for calculation of leakage has been demonstrated in PDMR, ex-ante and ex-post ER sheets.	
No. of trees planted in leakage tab has been taken from field-based primary excel data which is hardcoded. Rest of the hardcoded values have references in the comment of its cell.	
Documentation provided by Project proponent	
Revised PDMR, Revised ex-ante, ex-post ER	
Research paper link: PERFORMANCE OF MANGO BASED AGROFORESTRY SYSTEM WITH DIFFERENT SUMMER VEGETABLES COMBINATIONS by MST. SHUBA.pdf ,	
VVB Assessment	Date: 25/12/2024
PP has now estimated leakage for the displacement of activities by applying a 0.5-meter radius buffer on both sides of the trees. This 0.5-meter buffer represents the full shade condition, where complete sunlight does not reach between 10 a.m. and 3 p.m., as this period is the most critical for growth underneath the Mango trees in the agroforestry model. The PP has provided supporting evidence (PERFORMANCE OF MANGO BASED AGROFORESTRY SYSTEM WITH DIFFERENT SUMMER VEGETABLES COMBINATIONS by MST. SHUBA.pdf) to justify the application of this approach. The VVB has reviewed the provided evidence and confirms that the approach used for leakage estimations is valid, appropriate, and conservative.	

Furthermore, as Mango spp. exhibits more vigorous growth compared to the other two species, using the same 0.5-meter radius buffer for these species is considered conservative and satisfactory for calculating the displaced area.

In conclusion, the VVB deems the approach applied for leakage estimations to be valid, appropriate, and in compliance with CDM AR-Tool 15

CL has been closed.

CL	11	Section no.	NPR Report v4.2	Date: 09/11/2024
Description of CL				
According to section 1.1.3 of VCS NPR v4.2, <i>“Project participants shall clearly document and substantiate the risk score selected for the project. Supporting records shall include all relevant assumptions, parameters, and data sources so that the reader can reproduce the results”</i> PP is requested to provide sufficient evidence for the following items to substantiate the risk chosen in the NPR report, as per the requirement above: a. Upon reviewing Sections 1.6 and 1.7 of the VCS PDMR, VVB has noted that PP (Infinite Solutions) and other entity (Mangrove Foundation) have office locations in the Indian states of Madhya Pradesh and Tamil Nadu, where the project area (1st PAI) is located. However, it is unclear to the VVB how the risk score for sub-clause d under Section 1.1 is applicable for the project activity. PP shall provide a clarification of this claim along with relevant supporting evidence. b. Management team competency and experience document for sub-clause c under section 1.1 shall be provided. c. Financial viability analysis document to support the risk score for sub-clauses c and h under section 1.2 shall be provided. d. PP is requested to provide documentary evidence of social assessments, such as <u>household surveys</u> and <u>participatory rural appraisals</u>, following best practices to substantiate that the baseline activities are subsistence-driven for Q1 of Section 1.3 and section 2.2 of the NPR report.				

e. VVB has observed that the PP has opted “yes” for Q1 under section 1.4 of NPR report (Did the project request registration on or after 1 January 2024?). Additionally, VVB initiated the audit process (kick-off call) on October 25, 2024. Therefore, PP is requested to clarify how the project request for registration is not after January 2024. f. Upon reviewing the agreements between the farmer and the Mangrove Foundation of India, VVB has observed that the agreements are signed for a 40-year duration. However, it is unclear to the VVB how Question 2 under Section 1.4 of the NPR Report, which states, “<i>Does the project have a legally binding agreement that covers at least a 100-year period from the project's start date?</i>”, applies to this project. If applicable, PP is requested to provide supporting evidence to substantiate the claim of a zero-risk score for project longevity. g. VVB observed that PP has claimed the risk for sub-clause j under section 2.1 of NPR Report which states “<i>Disputes exist in up to and including 5 percent of the project area.</i>” However, it remains unclear to the VVB whether PP has conducted due diligence to identify any disputes related to ownership, land, resource access, or use rights. If so, PP is requested to provide supporting evidence to substantiate this claim in compliance with section 2.3 (6) of VCS NPR Tool v4.2. Additionally, PP shall demonstrate the actions being taken to resolve these disputes. h. PP shall clarify how the risk selected for sub-clause l (<i>WRC Projects</i>) under Section 2.1 is applicable, considering that the project involves the plantation of trees on croplands, and the applied methodology is designed for non-wetlands. i. Justification, along with evidence, to support the risk selected for natural risk under section 3.1 shall be provided. j. NPRT Notes and NPR Report from verra hub shall be provided.	
Project participant response	Date: 26/11/2024
a. In the section 1.6 and 1.7 of VCS PDMR the information of PP and project implementer has been mentioned, which is clearly demonstrate that MFI and Greenmile located in the Tamil Nadu and Andhra Pradesh respectively, while outreached project Pvt Ltd situated in the Madhya Pradesh. All the project implementer location the project areas state. And VVB has review the all the document during the field inspection for mitigation the risk related to the project of project implementer. b. Management team information has been updated in the SOP. c. Financial viability sheet has been attached.	

d. For baseline assessment, PRA t report form has been attached. e. Particular section has been updated as per the standard requirement and NPRT sheet has been attached. f. NPRT sheet has been updated, and project longevity is updated for 40 years as per the farmer carbon credit agreement g. The farmer who are participating in the project comes with legal agreement, therefore there is no conflict or dispute regarding the ownership, land, resource access, or use rights. h. The project boundary file is attached which is demonstrate that project area is situated in the upland area. i. All the natural risk which is identified in the project is provide with suitable evidence. j. NPRT notes and NPR report has been attached.	
Documentation provided by project participant	
<i>SOP</i> <i>Financial viability</i> <i>Carbon agreement</i> <i>Project boundary shapefile</i> <i>NPRT report</i>	
VVB assessment	Date: 03/12/2024
a. VVB confirms that the PP has resolved the issue as per the raised CL. After reviewing the incorporation documents of the PP, the VVB confirms that the PP and its management team either maintain a presence in the country or are situated within a travel distance of no more than one day from the project site, considering all parcels or polygons in the project area. b. VVB confirms that the PP has rectified the issue as per raised CL. Furthermore, VVB verifies that the management team possesses the necessary experience and skills to successfully implement the project activities, as confirmed through on-site inspections and interviews. c. VVB confirms that the PP has addressed the issue as per the raised CL. After reviewing the financial viability, VVB verifies that the PP has accurately calculated the project's income and expenses. It is confirmed that the payback period ranges from greater than seven to up to ten years based on the current risk assessment. Additionally, the project has more than 80% callable financial resources.	

- d. PP shall provide appropriate and valid PRA report following the best practice following best practices to substantiate that the baseline activities.(CL point is still open)
- e. PP has addressed the issue as raised and risk has been considered appropriately.
- f. Based on its review of farmer agreements, the VVB confirms that agreements have been signed for a duration of 40 years, and the PP has selected an appropriate and valid score accordingly. Additionally, the VVB confirms that the risk score of 15 is accurate and satisfactory.
- g. Based on its review of farmer agreements, the VVB confirms that the agreements have been signed for a duration of 40 years. The VVB has also verified the ownership of the project area through relevant state government websites. Additionally, on-site inspections and interviews confirm that the lands involved are privately owned, with no disputes or conflicts regarding ownership or resources.
- h. Based on the review of the supporting evidence i.e. project boundary files VVB confirms ht the project is located in upland area.
- i. Based on the review of supporting evidences VVB confirms that the evidence provided for natural risks are satisfactory to the VVB.
- j. VVB confirms that NPRT notes and NPRR report has now been provided to the VVB

Project participant response

Date: 16/12/2024

PRA report is being shared.

Documentation provided by project participant

PRA report

VVB assessment

Date: 25/12/2024

VVB confirms that a detailed PRA report has now been provided. Based on the review of this PRA report, VVB confirms that the baseline activities are subsistence driven.

CL has been closed.

CL	12	Section no.	Ex-ante & Ex-post Calculation sheet	Date: 09/11/2024
Description of CL				
PP shall provide a clarify on the following observations: 1. According to cited literature (<i>section 1 & 2.4 of Ganeshamurthy et al., 2016</i>) for ex-ante allometric equation, <i>“The general equations available/developed for forest/wild mango is trees based on the measurement of DBH for trees/poly embryonic varieties grown from seeds. This equation cannot be used for mango orchards as commercial mango orchards are established with grafted seedlings and in section 2.4 & 3.5, the researchers stated that they used DBGU (diameter below graft union) for developing the equations.</i> a) Upon reviewing the ex-ante calculation sheet, VVB identified that PP applied an equation from the cited literature [Table 4, Sl. No. 1(1)], developed for grafted mango plantations, to estimate ex-ante carbon for mango species in the project. Since the project involves an agroforestry design with forest trees planted on croplands, PP shall clarify how this equation, which was developed for grafted mango plantations, is applicable to the mango species in the project activity. b) VVB also observed that the cited literature relates to DBGU measurements and noted that PP estimated the ex-ante carbon for mango species by applying collar diameter. Therefore, PP shall provide clarification regarding the approach taken for these ex-ante estimates of mango species. 2. VVB has noted that the PP has estimated the carbon stock in leaf litter by applying a conservative default-factor-based method, as per section 7.2 of CDM AR-Tool 12. According to Paragraph 45 of the mentioned tool, Equation 15 ($C_{LI,i,t} = C_{Tree,i,t} \times D_{FLI}$) indicates that the carbon stock in leaf litter should be estimated by multiplying the default factor with the carbon stock in tree biomass (in t CO₂e). However, upon reviewing the ex-ante carbon sheet, VVB observed that PP estimated the carbon in litter by multiplying the default factor (1%) with tree biomass (t.d.m.), the carbon fraction for litter (0.37), and the C to CO₂ fraction (3.67), which refers to Equation 12 of the mentioned tool, not Equation 15. Therefore, PP shall clarify how the estimates for leaf litter were derived in compliance with CDM AR-Tool 12.				

3. Furthermore, a similar approach, as mentioned above, has been applied for estimating the carbon stock in dead wood, which does not comply with Equation 9 (Paragraph 34) of CDM AR-Tool 12. Therefore, PP shall clarify how the estimates for dead wood were derived in compliance with AR-Tool 12.
4. Upon reviewing the ex-ante carbon sheet, VVB observed that PP has applied different default C to CO₂ fractions, i.e., 3.67 for tree carbon estimates and 3.667 for SOC carbon estimates. Both of these defaults are acceptable to the VVB. However, PP shall ensure consistency in the application of these defaults in accordance with section 2.2.1 of the VCS Standard v4.7 (Principle of Consistency).
5. Upon reviewing the ex-ante carbon sheet, VVB noted that the PP has estimated zero leakage (in column E of the "Leakage" tab) and also provided total leakage emissions (in column E of the same tab). However, VVB observed that the values for total leakage emissions appear to reflect the annual average after baseline deductions. Therefore, the PP shall provide clarification on the same.
6. VVB has observed that the PP applied a commercial volume calculation with a BEF of 3.4 for red sander carbon estimates, resulting in an inflation of aboveground and consequently belowground biomass by more than double compared to values derived using direct biomass equations. Therefore, PP shall ensure the application of conservative values in accordance with Section 2.2.1 of the VCS Standard v4.7.
7. PP shall include the last harvest cycle in the ex-ante calculation sheet as per 3.2.30 (1a) of VCS standard v4.7
8. Ex-post sheet does not include deadwood and leaf litter carbon calculations.

Project proponent response
Date: 24/11/2024

1. Equation for mango species has been changes. Selected equation ($Y=0.20 \times \text{Collar Diameter}^{1.85}$) estimates biomass on the basis of monitored parameter (collar diameter)

Source: 0

2. Equation 15 ($C_{LI,i,t} = C_{Tree,i,t} \times D_{FLI}$) of AR tool 12 have been applied and suggested changes have been made in ex-ante calculations for litter using default factor based method.

3. Equation 09 ($C_{DW,i,t} = C_{Tree,i,t} \times D_{FDW}$) of AR tool 12 have been applied and suggested changes have been made in ex-ante calculations for litter using default factor based method.

4. Suggested changes have been made and consistent value of C/CO₂ as 3.67 has been considered throughout the ex- ante ER calculation sheet.
5. Leakage calculations have been incorporated as suggested which results into total 1298 tCO₂e as leakage.
6. In line with the suggested changes, BEF value has been considered conservatively as 1.59 which is taken from [Sci-Hub | Estimates of biomass in Indian forests. Biomass and Bioenergy, 19\(4\), 245–258 | 10.1016/s0961-9534\(00\)00040-4](#).
7. Suggested changes have been made. Harvesting cycle has been included in the ex-ante ER sheet as per the project management plan and calculation have been revised.
8. Suggested changes have been made. Deadwood and litter calculation have been calculated and incorporated as per default factor-based method.

Documentation provided by Project proponent

Revised ER

Revised PDMR

VVB assessment

Date: 05/12/2024

1. Based on the review of the revised ex-ante sheet, the VVB confirms that the PP has applied the equation $Y=0.20 \times (\text{Collar Diameter})^{1.85}$ for ex-ante estimations of mango, using collar diameter as the parameter, as developed by Rathore et al., 2021. The VVB considers this equation valid, as Rathore et al., 2021 reported it to be highly effective for estimating mango biomass and carbon stocks in both intercropped and non-intercropped standing scenarios.
- 2 & 3. Based on the revised ex-ante sheet, VVB confirms that the PP has resolved the issue by appropriately revising the ex-ante estimates for deadwood and litter in accordance with Equations 9 and 15 of CDM AR-Tool 12.
4. Based on the review of revised ex-ante sheet, VVB observed that PP has applied different default C to CO₂ fractions, i.e., 3.67 for tree carbon estimates and 3.667 for SOC carbon estimates. PP is requested to revise the fractions to make it consistent throughout the document.

5. The VVB has reviewed the leakage estimations for the project activity and observed that the values in cells O12 to O17 are hardcoded. Additionally, the calculations in cells E19 to E37 are incorrect, as they reference rows J and O, which do not contain any values.
6. Based on the review of the revised ex-ante sheet, VVB confirms that the PP has addressed the issue by revising the BEF value. PP has now applied a conservative factor of 1.59, which is deemed valid and conservative.
7. Based on the review of revised ex-ante sheet, VVB confirms that the PP has included last cut harvest cycle as required by section 3.2.30 (1a) of VCS standard v4.7.
8. Based on the review of ex-post sheet, VVB confirms that the PP has revised the ex-post sheet and now included calculations for deadwood and litter.

CL is still open

Project proponent response

Date: 16/12/2024

4. Corrections have been made.

5. O12 to O17 values (no. of trees planted) are hardcoded as these values are taken from field-based primary excel data.

Correction have been made and leakage after 2023 (ex-ante in PAI-1) and 2028 (ex-ante: total 4000ha implementation) has been considered 0 as there is no leakage expected post that.

Documentation provided by Project proponent

Ex-ante, Ex-post ER sheets, Revised VCS PDMR

VVB Assessment

Date: 25 /12/2024

4. Based on the review of EX- ante sheet VVB confirms that now the conversion factor C to CO2 has been made consistent, i.e. 3.67 for estimating values of tree and SOC carbon.
5.
 - a. VVB observed that the no. of tress provided in cells O13 to O18 are not in consistent with the survival trees given in tabs "*Mangifera indica*", "*Guava*", *Red sanders*".

- b. Based on the review leakage estimations, VVB has observed that the calculations have been made annually without considering leakage from previous years. PP is requested to clarify why the calculations were not done cumulatively considering the surviving trees from previous years as well.
- c. Similarly, VVB has also observed that the leakage has been considered as zero from 2024, however as the surviving trees will be present on the same croplands and there will be shifting of agriculture activity every year as a result of trees present in that area for the entire duration of the crediting period, PP is requested to clarify how the leakage estimate will amount to zero from 2024.

CL is still open.

Project proponent response

Date: 06/01/2025

5.

a. PP has make the number of tree consist in O13 to O18 and in leakage sheet for ER Ex ante sheet of PAI-1 and ER-ex ante sheet (4000 ha) with respect to Mango, Guava, Red sanders for respective years.

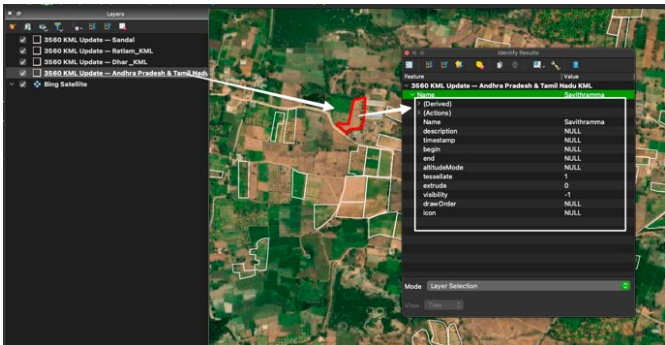
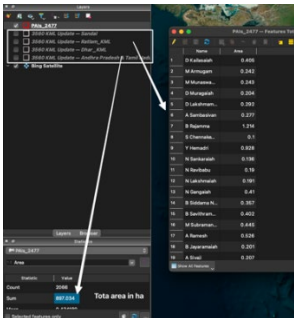
b. As per the ACM0003 methodology and CDM tool-15 "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity" leakage is accounted as follow:

$$LK_t = LK_{AGRIC,t}$$

That means leakage is accounted for based on the specific year, rather than being calculated using a cumulative value. This means that the leakage for each year is calculated independently, reflecting the leakage that occurs within that particular year. Therefore, PP calculates annual leakage on an individual basis, rather than cumulative basis.

c. PAI-1 is implemented between 2018-2023 therefore Leakage is considered 0 after 2023. However, the project will be implemented till 2028 as per project implementation and management plan, and there is no plantation activity planned to be implemented after 2028, hence leakage is estimated as 0 for further years.

Documentation provided by Project proponent	
1. ER Ex- ante PAI-1 2. ER Ex-post PAI-1 3. ER-Ex ante (4000ha)	
VVB Assessment	Date:02/04/2025
PP has provided leakage estimations in accordance with CDM AR-Tool 15 as per raised finding CL has been closed	

CL	13	Section no.	GIS-Shapefiles/KML File	Date: 09/11/2024
Description of CL				
PP shall provide a clarification on the following observations:				
a. The KML file for the first project instance provided does not contain the detailed information required by Sections 3.11.1 and 3.11.2 of the VCS v4.7. Please see figure below for an example farm for better reference of this point: 				
b. The total area of 1st PAI from GIS review i.e., 897.034 ha is not consistent with area mentioned in the section 1.1 of VCS PDMR 				

In the 10 years prior to the project start date, there is evidence of exist plantation partial or total within the plot from 2010-17, some plots exhibit infrastructure within:

Doraswami



Subramanyam reddy



Amaravathi



Dilli babu



P Saraswati



Eswari



Kumari



K. Narasimha reddy

		
		
Project participant response		Date: 24/11/2024
(a): PP has revised the KML files, and the clarifications have been addressed. The updated KML files are being shared. (b): According to the KML data from Google Earth, the total area is 894.06 hectares. However, when calculated in QGIS software, the area is found to be 889.03 hectares. This 5-hectare difference is since Google Earth rounds numbers to two decimal places, while Q GIS software considers more decimal points, leading to this variation in area measurement. Therefore, the actual total area can be considered approximately 894.06 hectares. 1. Farm 1: Doraswami, this plot has been updated accordingly. 2. Farm 2: Subramanyam Reddy, this plot has been updated accordingly. 3. Farm 3: Amaravathi, this plot has been updated accordingly. 4. Farm 4: Dilli Babu, this plot has been updated accordingly. 5. Farm 5: P. Saraswati, this plot has been updated accordingly. 6. Farm 6: Eswari, this plot has been removed from the KML accordingly. 7. Farm 7: Kumari, this plot has been removed from the KML accordingly.		

8. Farm 8: K. Narasimha Reddy, this plot has been removed from the KML accordingly.	
Documentation provided by project participant	
VCS PDMR, KML file	
VVB assessment	Date: 05/12/2024
Based on the review of kml files provided by PP, VVB confirms that: a) The kml was updated according to the raised point above and now is aligned with sections 3.11.1 and 3.11.2 of the VCS v4.7 accordingly. b) The kml provided was updated and now the total area shown is coherent with the area shown in section 1.1 of VCS PDMR. For the kml files of the PAIs: -Doraswami, this plot has been updated accordingly. -Subramanyam reddy, this plot has been relocated and updated accordingly. -Amaravati, this plot has been relocated and updated accordingly. -Dilli babu, this plot has been relocated and updated accordingly. - P Saraswati, this plot has been updated accordingly. - Eswari, this plot has been deleted from kml accordingly. -Kumari, this plot has been deleted from kml accordingly. -K. Narasimha reddy, this plot has been deleted from kml accordingly. CL has been closed	

CL	14	Section no.	AFOLU Safeguards	Date: 11/11/2024
Description of CL				

In accordance with section 3.19 of the VCS Standard v4.7, PP is requested to provide evidence demonstrating how the project design and implementation comply with all AFOLU-specific safeguard requirements, including:

- Risk to Stakeholder and Environment
- Respect for Human Rights and Equity
- Indigenous Peoples and cultural heritage
- Benefit sharing mechanism
- Ecosystem Health

Project participant response

Date: 24/11/2024

- Risk to Stakeholder and Environment (section 2.2): Section 2.2 of VCS PDMR has been updated by including the information working condition, woman safety, safety of marginalized and minor groups information, as per the section 3.19 of VCS standard 4.7

The Project Proponent has highlighted a crucial aspect of the project by introducing native tree agroforestry system, Native species are adapted to local biotic and abiotic conditions and thus support native biodiversity and ecosystem function to a greater degree than exotics.

A comprehensive Risk Management Strategy in the carbon credit sharing agreement can help mitigate potential issues related to financial, environmental, social, and operational risks that minimize risk to stakeholder.

- Respect for Human Rights and Equity (section 2.3):

The Project Proponent has developed a comprehensive Human Rights and Equal Opportunity Policy to guide project activities. Which also ensure women to participates in decision-making, implementation and creation of gender-friendly work environments and promote leadership roles for women.

- Indigenous Peoples and cultural heritage (section 2.3.3):

The project proponent fully recognized the rights of Indigenous Peoples in the project area and is committed to implementing activities in line with FPIC principles and the traditional knowledge to enhance sustainability and cultural relevance.

PP has developed a valid code of conduct to prevent any form of gender discrimination, sexual harassment and related issue in the workplace.

- Benefit sharing mechanism (2.3.5):

To ensure transparency and mutual consent, an agreement between project proponent and farmer on carbon credit sharing that clearly outline the distribution of carbon credit revenues, the roles of the farmers, and how benefits will be shared equitably.

- Ecosystem Health (section 2.4):

The integration of trees with crops into an agroforestry system has the potential to reduce soil erosion, increase soil fertility, improve water quality and biodiversity conservation,

combat climate change through carbon sequestration and improve the aesthetics of the surrounding area (Nair, P.R., Nair, V.D., Kumar, B.M., Showalter, J.M., 2010. Carbon sequestration in agroforestry systems. Adv. Agron. 108, 237–307.).	
Documentation provided by project participant	
Infinite POSH policy and code of conduct	
VVB assessment	Date: 05/12/2024
VVB based on the review of supporting evidence provided by PP confirms that the demonstration provided in VCS PD is in line with section 3.19 of the VCS Standard v4.7 and satisfactory to the VVB.	
CL is closed.	

CL	15	Section no.	Documents	Date: 11/11/2024
Description of CL				
PP shall provide the below mentioned documents				
• PRA Reports. • Grievance Records. • Benefit sharing mechanism. • Document related to SDG contributions • Farmer agreements for other two spp.- Red Sander and Guava. • Double counting letter • Certificate of incorporation of the project proponent and other entity. • Evidence of soil type. • Evidence pertaining to stratification of project area.				
Project participant response				Date: 24/11/2024
All the documents mentioned in description of CL are being provided.				
Documentation provided by project participant				
• PRA Reports. • Grievance Records. • Benefit sharing mechanism. • Document related to SDG contributions				

- Farmer agreements for other two spp.- Red Sander and Guava. - Double counting letter - Certificate of incorporation of the project proponent and other entity. - Evidence of soil type. Andhra Pradesh: https://apenviis.nic.in/soil.html Tamil Nadu: https://agritech.tnau.ac.in/agriculture/agri_soilgroups.html#:~:text=The%20major%20soil%20groups%20of,soils%20(3%20per%20cent)%20and Madhya Pradesh: Kullu, A., Mohanty, A., Prasad, B., Rajasmita, R., Dehury, P. P., Pani, P., ... & Paital, B. (2021). Soil Type as One of the Major Contributing Factors for Top Ten Agri-Producing States of India. Journal ISSN, 2766, 2276. - Evidence pertaining to stratification of project area.	
VVB assessment	Date: 05/12/2024
VVB, based on its review of the provided documents, confirms that the following documents have been submitted and are deemed satisfactory: - Benefit Sharing Mechanism (Farmer's Agreement) - Farmer Agreements for the other two species—Red Sander and Guava - Double Counting Letter - Certificate of Incorporation for the Project Proponent and other relevant entity - Evidence of Soil Type However, regarding PRA reports, only Excel sheets demonstrating PRA responses have been provided, rather than the complete reports. PP is requested to provide the same. PP is requested to provide Grievance records also. For SDG contributions it is mentioned in the VCS PD, “under this grouped project, in PAI-1, approximately 2,500 employment opportunities were generated for plantation and management activities during the current monitoring period (Indicator 8.5.1)”.PP is therefore requested to provide employment agreements for the 2,500 individuals as indicated in the VCS PD. Additionally, PP is requested to provide the “Adaptive management plan” in relevance to NPRR. CL is still open	
Project participant response	Date: 09/12/2024
PRA summary report has now been shared with VVB.	

Grievance records have also been shared with VVB.

PP has recorded the employment generated through plantation and management activity including the farmers involved under this grouped project activity during the current monitoring period in PAI-1. The employment generated through this project activity is around 2,500, including both direct (farmers involved) and indirect (local community) beneficiaries. Also, PP has revised SDG and mentioned SDG 8.3.1 in place of SDG 8.5.1. PP has shared the employment generation records with VVB as evidence for SDG 8.3.1, as mentioned in the table “Sustainable Development Contributions” in section 1.18.2 of the VCS PDMR.

Moreover, adaptive management plan has been shared with VVB in relevance to NPRR.

Documentation provided by project participant

PRA summary report, Grievance records, Employment generation records and Adaptive management plan.

VVB Assessment

Date: 25/12/2024

VVB confirms that PRA report, grievance records and adaptive management manual (Management Manual) has been shared with VVB. In addition to that employment records have also been provided confirming project’s impact under SDG Indicator 8.5.1.

CL has been closed.

Table 3. CAR from this Validation and Verification

CAR	01	Section no.	Template Instructions	Date: 11/11/2024
Description of CAR				
PP shall correct the following as per template instructions:				
a. In section 1.4.1 of the PDMR, PP shall demonstrate that the project is <i>not a fragmented part of a larger project or activity that would otherwise exceed such limits</i> as per template instructions. b. In section 1.10 of the PDMR, PP shall provide justification for <i>how the selected crediting period conforms with the VCS Program requirements</i>. c. PP shall provide current project contributions for SDG 8 in section 1.18.2 of PDMR d. PP shall complete section 2.1.4 of VCS PDMR to describe any grievances that were raised during the monitoring period according to the template instructions.				

- e. In section 2.4.2 of the PDMR, the PP shall provide an explanation of potential adverse effects resulting from project activities and describe how the project will mitigate these risks and has addressed them during the monitoring period.
- f. In section 4.1 of the PDMR, PP shall demonstrate that *“where no new project activities have been implemented during the current monitoring period, demonstrate that previously implemented project activities continued to be implemented during the current monitoring period.”*
- g. In Section 5.2 of the PDMR, the demonstration for estimating changes in carbon stock in dead wood and leaf litter is not clear and lacks transparency. PP shall address this issue in response to finding CL 11 (b & c) of this report.
- h. Section 7.3 of the PDMR lacks a clear demonstration of the procedures for CO₂ monitoring from deadwood and leaf litter, despite these components being included within the project boundary scenario. PP is requested to detail the procedures applied for CO₂ monitoring of deadwood and leaf litter during the monitoring period in accordance with applied methodology.
- i. The LTA value mentioned in Section 7.5 of the PDMR (i.e., 267480) is not consistent with the ex-ante sheet (184647). The PP shall revise the value to ensure consistency across the documents

Project participant response
Date: 26/11/2024

PP has now corrected all in the required sections as per template instructions:

- a. The project activity is a grouped project activity and has already covers 894.06 hectare of area in PAI-1 (from 2018 to 2023). PP intends to scale up the project up to 4,000 ha area which will lead to annual GHGs removal more than 16,000 tons of CO₂, as per CDM methodology booklet large scale methodology applicable. ER sheet for grouped project activity has been shared with VVB.
- b. PP has selected 30 years of the crediting period for this project activity that is in line with the sections 3.9.3 of the VCS standard v4.7, the selected crediting period for this grouped AFOLU projects is more than 20 years, as per section 3.9.4, project having a credible and robust plan for managing and implementing the project over the project crediting period, as per section 3.9.5 of the VCS standard v4.7, the project activity is involved in the harvesting and included two harvesting cycles (harvesting in 15 years) in its crediting period, and in line with the section 3.9.6 of the VCS standard, the start date of the crediting period is 01-March-2018 i.e., after 01-January-2002. However, PP has

provided a clear justification for the selected crediting period for this project activity in the section 1.10 of the VCS PDMR.

Hence, the selected crediting period for this project activity matches all the requirements set out in the VCS program.

- c. PP has provided the current project contributions and expected contributions over project lifetime for SDG 8 in section 1.18.2 of PDMR. Quantitative matrix data is being provided in terms of salary slip of the workers involved in the project.
- d. There has been no grievance received on the grievance mechanism during this monitoring period. The same has been mentioned in the section 2.1.4 of the VCS PDMR.
- e. The project activity is not involved in the invasive species, three species (*Mangifera indica*, *Pterocarpus santalinus*, and *Psidium guajava*) have been planted in this project during PAI-1. There has no invasive species been planted under this project activity. Hence, there is no potential adverse effects and risk resulting from project activities. Therefore, no mitigation measures are required to prevent spread or continued existence of invasive species. these risks and has addressed them during the monitoring period. However, PP has now mentioned the same in section 2.4.2 of the VCS PDMR.
- f. This project activity involves plantations in PAI-1 on 894.06 hectares in the first/current monitoring period. These plantations were carried out between 2018 and 2023. And this is a new plantation project, and there are no previously implemented activities that will continue during the current monitoring period. Currently PP has collected data till 2023 and monitoring period is considered till September 30, 2024. Project is being implemented after 2023 also. Further implemented project activity will be considered in the next instances.

However, PP has mentioned the same in section 4.1 of VCS PDMR.

- g. Project activity involved both the pools (deadwood and litter) and revised the ER calculation sheets using default values for deadwood and litter and the same has been transparently mentioned in section 5.2 of the VCS PDMR. Moreover, the response has been made for CL11 of this report.
- h. As stated above, PP has used methodological default values for CO₂ monitoring of the deadwood and leaf litter during the monitoring period in accordance with applied methodology.

There was an editorial error in section 7.5 in the table for LTA that has now been mentioned correctly in line with Ex-Ante sheet and is now consistent all over the VCS PDMR.

Documentation provided by project participant

Kml files, ER sheet for grouped project, employment generation records, salary slips, Ex-Ante calculation sheet

VVB assessment

Date: 05/12/2024

- a. This finding is subjected to closure of CL04 of this report.
- b. Based on the review of revised VCS PDMR, VVB confirms that the PP has addressed the issue by providing justification for selection of crediting period and in compliance with section 3.9.3 of VCS Standard v4.7.
- c. **For SDG 8:** PP shall provide employment contracts for all personnel to substantiate project contribution for SDG 8.

For SDG 1.4: The PP has stated that all 2,096 farmers involved in the grouped plantation project activity have signed agreements. However, the PP has not sufficiently demonstrated any contribution to SDG 1.4 during the current monitoring period.

- d. Based on the review of the revised PDMR, VVB confirms that the PP has provided information on grievances received during the current monitoring period in accordance with the template instructions. Additionally, the VVB confirms that no grievances were reported during this period.
- e. PP has successfully addressed the raised CAR by providing information in the VCS PDMR regarding the nativity of species, as per the template instructions. Additionally, the VVB conducted independent web research and confirms that Mango and Red Sanders are native to India, while Guava, though non-native, is well-adapted to the local ecological conditions of India. Therefore, there are no potential adverse effects on the ecosystem.
- f. PP has successfully resolved the issue by providing the required information in Section 4.1 of the revised VCS PDMR, in accordance with the template instructions.
- g. PP has addressed the issue by providing the calculation approach for deadwood and litter in Section 5.2 of the VCS PDMR. However, this finding cannot be closed, as

Section 5.2 does not clearly specify which equation used to estimate CO₂ in deadwood and litter. Additionally, Section 7.3 lacks clarity on the estimation approach for deadwood and litter during the current monitoring period and 7.1 lacks clarity on baseline emissions.

- h. VVB based on the review of VCS PDMR and ER sheets confirms that the values applied are in compliance with the applied methodology.

CAR 01 is still open.

Project participant response

Date: 09/12/2024

- a. CI 04 has been addressed and closed. This finding considered as closed.

- c. **For SDG 8:** PP has provided samples records of the employment generated as evidence for the SDG 8 mentioned in the table, section 1.18.2 of VCS PDMR.

For SDG 1.4: The PP has stated total no of the farmers involved in the grouped plantation project activity during the PAI-1, have signed agreements. There was an editorial error in the total no of farmers involved in this project during current monitoring period and PAI-1. The same has now been revised in the table as well all over the VCS PDMR. The PP has now demonstrated the contribution to SDG 1.4 during the current monitoring period as well as contributions over project lifetime.

- g. PP has taken default-factor based method for the estimation of the CO₂ in deadwood and litter. Equation 9 and 15 of the AR-CDM Tool 12 v03.1 have been used to estimate CO₂ in deadwood and litter respectively. The same has now been clearly mentioned in the section 5.2 of the VCS PDMR. Also, PP has now clearly elaborated the estimation approach for deadwood and litter during the current monitoring period in the section 7.3 of the VCS PDMR. Clarifications on the baseline emissions has now been provided in the Section 7.2 of the VCS PDMR.

Documentation provided by project participant

Employment records, VCS PDMR, Carbon calculation sheets (Ex-Ante and Ex-post)

VVB Assessment

Date: 25/12/2024

VVB confirms that the employment records have now been shared with the VVB. Also, the contribution has been provided too for SDG 1.4, for the current monitoring period.

In addition to that the approach for estimation of the CO₂ in deadwood and litter has been clearly demonstrated in VCS PDMR and deemed satisfactory to the VVB.

CAR has been closed.

CAR	02	Section no.	2.1.2 VCS PDMR [LSC]	Date: 11/11/2024
Description of CAR				
Description of the stakeholder consultation and engagement process in Section 2.1.2 of the PD is incomplete. PP shall revise the section 2.1.2 as per following observations in compliance with section 3.18.1 -3.18.6 of VCS Standard v4.7, • Demonstration of expected changes in well-being in section 2.1.2 of PDMR is anecdotal and unclear. PP shall revise the PDMR to clearly include the expected changes in well-being and other stakeholder characteristics relative to the baseline scenario, including changes to ecosystem services identified as important to stakeholders as per template instructions and in compliance with section 3.18.1 (4&5) of VCS Standard v4.7. • PP shall demonstrate any barriers to stakeholder engagement such as literacy and location or connection to electricity and how the project participant will address such barriers in relevant sections of PDMR in compliance with section 3.18.1 (8) of VCS Standard 4.7. • Section 2.1.2 of the PDMR shall revise to include the date of the first meeting, as per the template instructions. While doing so, PP shall ensure the requirements of section 3.18.2 of VCS Standard v4.7 are met. • PP shall include all dates of announcements and meetings for all three states up to the present date. • PP shall include details on any updates to the project design or justify why updates were not necessary or appropriate in stakeholder input under section 2.1.2 of PDMR as per template instructions (<i>Refer to finding CL06 of this report</i>). • PP shall provide all LSC documentation for the project activity.				
Project proponent response				Date: 25/11/2024
PP has now revised the section 2.1.2 of the VCS PDMR in compliance with section 3.18.1 - 3.18.6 of VCS Standard v4.7, • PP has displayed invitation at the Gram Sabha's office in local, Hindi and English language, as well as verbal communication among the farmer groups (farmers, who already connected with project implementors, were requested to communicate about				

the LSC). Hence, in accordance with section 3.18.1. (8) of the VCS standard v4.7, no such barriers were identified for the LSC under this project activity.

- There was an editorial error in the section 2.1.2 of the VCS PDMR, PP has now computed the date of the first meeting as well as meetings conducted during the project implementation as per the requirement of the section 3.18.2 of VCS standard v4.7. Attendance sheets and LSC photographs have now been shared with VVB as evidence for the same.
- PP has included all the dates of the announcements and meetings for all the three states till the present date. Evidence for the same has now been shared with VVB. Photographs of the invitation letter has now been shared with the VVB as evidence for the same.
- As stated above in CL06, there was an editorial error in the section 2.1.2 of PDMR, there were no comments received during the LCS meetings. However, some feedbacks have been received. The feedback/inputs received have been incorporated in the same section. PP has shared the feedback received during LSC with VVB as evidence.

PP has now provided all the required documents or evidence for the section 2.1.2 of the VCS PDMR.

Documentation provided by Project proponent

Attendance sheet, LSC photographs, invitation letter, and feedback form

VVB assessment

Date: 05/12/2024

a. Necessary changes regarding stakeholder consultation and engagement process have been incorporated in PDMR and in compliance with 3.18.1 -3.18.6 of VCS standard v4.7.

b. Based on the PP's response and as confirmed through on-site inspections and interviews, there have been no issues regarding stakeholder engagement, such as literacy or access to electricity. PP has conducted all LSC meetings in both the local language and English, incorporating traditional customs. Therefore, the VVB confirms that stakeholders face no barriers related to literacy, connectivity, or similar issues.

c. PP has successfully addressed the issue by providing the date of the first LSC meeting, i.e., 26/01/2018, in accordance with the template instructions. This has been further validated through a review of stakeholder attendance sheets. Additionally, the VVB confirms that the PP conducted a stakeholder consultation prior to the implementation of project activities, in compliance with Section 3.18.2 of the VCS Standard v4.7.

d. PP has successfully addressed the issue by providing all dates of the first LSC meetings in accordance with the template instructions. This was further confirmed by reviewing all the LSC associated documents.

- e. Refer VVB assessment to CL06 of this report. This finding has been closed.
- f. PP has provided all LSC related documentation as per raised CAR. Furthermore, VVB has reviewed all original LSC documentation during on-site inspection/interviews.

However, this finding cannot be closed for following reasons:

- PP shall revise Section 2.1.2 of VCS PDMR in compliance with requirements of section 3.18.2 of VCS Standard v4.7.

CAR 02 is still open

Project proponent response

Date: 10/12/2024

- Made updates related to PP's legal and sole ownership of the carbon rights in the Table 2.1.1.
- Made updates to the detail requirements to the "Date of stakeholder consultation and Stakeholder engagement process" in the Table 2.1.2.
- Made updates in the table 2.1.3 related to ongoing or unresolved conflicts for the "Obtaining consent."

Documentation provided by Project proponent

VVB Assessment

Date: 25/12/2024

VVB based on the review of VCS PDMR confirms that the relevant sections (2.1.2 and 2.1.3) have been updated with the required information.

CAR has been closed.

CAR	03	Section no.	2.1.3 & 2.1.4 VCS PDMR [FPIC & Grievance]	Date: 11/11/2024
Description of CAR				
Description of the FPIC and Grievance mechanism in Section 2.1.3 & 2.1.4 of the PD is incomplete.				

- PP shall describe any ongoing or unresolved conflicts and demonstrate that the project does not exacerbate nor influence the outcomes of unresolved conflicts in section 2.1.3 of PDMR as per template instructions.
- Demonstration of outcome of FPIC in section 2.1.3 of PDMR is not clear or transparent. PP shall ensure PDMR is revised to include the outcome of the FPIC process, the transparent agreement, and the information disclosed prior to establishing a transparent agreement with those concerned, IPs, LCs, and customary rights holders
- PP shall provide assurance that the project has not encroached on land, relocated people without consent, and forced physical or economic displacement as per template instructions.
- Section 2.1.4 of PD is unclear who constitutes the neutral third party in the grievance redress mechanism and demonstrate the procedure for grievances that are not resolved through mediation as per template instructions.

Project proponent response
Date: 26/11/2024

PP has now updated FPIC and Grievance mechanism in Section 2.1.3 & 2.1.4 of the VCS PDMR.

- There is no any ongoing or unresolved conflicts in this project activity. FPIC process was briefed during stakeholders' consultation, on the potential impact to property rights, ensuring they were fully informed and empowered to make decisions. PP has described and demonstrated all the required processes in the section 2.1.3 of the VCS PDMR.
- The FPIC has very good outcomes in terms of transparent understanding of the concept of the project, process of the implementation of the project, establishment of grievance redress mechanism and process initiated for conservation of Ips and LCs for define the long-term intellectual property rights. PP has now clearly demonstrated the same in section 2.1.3 of PDMR.
- The project adheres strictly to land ownership boundaries, ensuring no encroachment or displacement. PP ensured that the project has not encroached on land, relocated people, and forced physical or economic displacement in line with the template instructions.
- PP has now revised the section 2.1.4 of VCS PDMR, grievance mechanism in compliance with the requirements of section 3.18.4 of the VCS Standard 4.7.

If there is a query or question that cannot be resolved through cooperative discussions, it will be referred to a neutral third party, such as agricultural experts, environmental consultants, or academics, for mediation. The same has now been mentioned in the section 2.1.4 of the VCS PDMR.

Documentation provided by Project proponent

VCS PDMR, Grievance Redressal Contact Sheet,

VVB assessment

Date: 05/12/2024

Necessary changes regarding FPIC and Grievance mechanism have been incorporated in section 2.1.3 & 2.1.4 of revised PDMR and in compliance with 3.18.4,7 & 8 of VCS Standard v4.7.

CAR 03 has been closed.

CAR	04	Section no.	2.2.2 VCS PDMR [Risk Assessment]	Date: 11/11/2024
Description of CAR				
Upon reviewing the document <i>Implementation Management Manual 3560 (10172024)</i>, VVB has observed that the use of inorganic fertilizers is included in the project. However, section 2.2.2 of PDMR does not include risk assessment for the pollutants (usage of chemical pesticides and fertilizers) In compliance with section 3.19.10 of VCS Standard 4.7, PP shall clearly identify, minimize, and mitigate any impacts caused by chemical pesticides and fertilizers as a result of project activities While doing so, PP shall ensure section 2.2.2 of the PDMR is revised to include this information.				
Project participant response				Date: 25/11/2024
Use of inorganic fertilizer is not a part of project implementation and management activity. Necessary changes have been made.				
Documentation provided by Project participant				
Implementation Plan				
VVB assessment				Date: 05/12/2024
As confirmed through on-site inspections and interviews, the use of inorganic fertilizers prior to the implementation of project activities contributed to land degradation. However, the PP is now promoting the use of organic fertilizers, such as cow dung and neem oil, as well as organic pesticides, through the proposed activities. Therefore, the VVB confirms that the use				

of organic fertilizers and pesticides does not pose any risk to ecosystem and in compliance with AFOLU safeguards of VCS Standard v4.7.

Furthermore, the PP has incorporated the necessary updates in the PDMR and the Implementation Management Manual (3560) as per the raised CAR.

CAR has been closed.

CAR	05	Section no.	3.3 VCS PDMR [Project Boundary]	Date: 11/11/2024
Description of CAR				
PP shall complete section 3.3 of PDMR as per template instructions, a. In section 3.3 of VCS PD, PP shall include emissions from burning woody biomass in the project boundary in compliance with paragraph 10 of applied methodology. b. PP shall provide a diagram or map of the project boundary as per template instructions and in compliance with section 3.12.1 of VCS Standard v4.7.				
Project participant response				Date: 26/11/2024
a. Suggested changes related to non-CO₂ GHGs emission due to burning of woody biomass have been made in section 3.3 of PDMR. b. Updated diagram of all the sources of GHGs for baseline and project is provided in section 3.3 of the PDMR.				
Documentation provided by Project participant				
VVB assessment				Date: 05/12/2024

As per the applied methodology, PP shall include emissions from burning woody biomass in the project boundary. PP has mentioned about CH₄ and N₂O, however the table remains incomplete and no mentioning of CO₂.

Also, PP shall provide a diagram or map of the project boundary as per template instructions and in compliance with section 3.12.1 of VCS Standard v4.7.

CAR is still open.

Project proponent response

Date: 24/11/2024

- In response to the CAR-5, the PP has updated the required details related to the “emissions from burning woody biomass in the project boundary” and added a table as required for the same in the 3.4 section. As per Table 2, paragraph 10 of AR-ACM0003, CO₂ emission due to burning of woody biomass is counted as a change in carbon stock, however, in the current project boundary, there is no burning of biomass taken place as a part of site preparation or as a plantation management activity.
- PP has also added the map of the project boundary as per the requirement of section 3.12.1 of VCS Standard v4.7.

Documentation provided by Project proponent

VCS PDMR

Implementation and management plan

VVB Assessment

Date: 25/12/2024

Based on the review of section 3.4 of VCS PDMR, VVB confirms that the emissions from burning woody biomass in the project boundary are included as per raised CAR and in compliance with paragraph 10 of applied methodology. In addition to this VVB has reviewed land preparation technique in Management manual and confirms that no burning of biomass has taken place during site preparation.

Furthermore, VVB confirms that PP has established appropriate management plan to mitigate the effects from force majeure (fire etc) events in future. Hence, VVB confirms that there will be no burning biomass in project area.

CAR has been closed.

CAR	06	Section no.	3.5 VCS PD [Additionality]	Date: 11/11/2024
Description of CAR				

Section 3.5 of the PDMR does not clearly demonstrate additionality, and the demonstration that the project activity is not a common practice in the area is insufficient according to the AR-Tool02. Additionally, VVB has noted that the additionality demonstration is limited to mango species and the states of Andhra Pradesh and Tamil Nadu. Since the project involves three different species across three different states, PP shall conduct a transparent common practice analysis in the PDMR, considering the relevant geographical area, in compliance with Step 4 of CDM AR-Tool 02 (Paragraphs 33 & 34).

Project proponent response	Date: 24/11/2024
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Suggested changes have been made in PDMR.

Documentation provided by Project proponent

Revised VCS PDMR

VVB assessment	Date: 05/12/2024
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PP shall provide evidence to substantiate the technological barrier.

Furthermore, PP has not provided sufficient evidence to support the common practice analysis (i.e., a robust comparison of tree planting initiatives of a similar scale and in the geographical region that are financed through mechanisms other than the carbon market).

CAR is still open.

Project proponent response	Date: 10/12/2024
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PP has removed the technological barrier from section 3.5 of VCS PDMR.

PP has provided detailed explanation of common practice analysis in section 3.5 of VCS PDMR by explain the similar scale policies of tree planting with geographical domain.

Documentation provided by Project proponent

Revised VCS PDMR

VVB Assessment	Date: 25/11/2024
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VVB based on the review of VCS PDMR confirms that the common practice analysis has been provided transparently in the PDMR. PP has provided a clear demonstration of regulatory frameworks prevalent in the three states regarding the forest and agroforestry plantations and how they are not like present project activity which VVB has reviewed and found appropriate. Therefore, VVB confirms that the PP has provided common practice analysis in line with the requirement of applied tool CDM AR-Tool 02 (Paragraphs 33 & 34) and project is additional.

However, PP is requested to provide evidence to substantiate the technological barrier.

CAR is still open

Project proponent response

Date: 08/01/2025

PP has provided the scientific evidence in the section 3.5 of VCS PDMR for technological barrier.

1. Sowmya, R. B., kishore, N. K., Lakshmi, T., & Umar, S. N (2022). A study on export growth of chittoor mango and constraints faced by different actors in mango value chain. *Agricultural sciences*, 223.
2. Singh, V. K., & Tyagi, P. K. (2017). Constraints faced by farmers in adoption of guava production technology in Tikamgarh District of Madhya Pradesh. *Indian Journal of Extension Education*, 53(1), 128-130.

Documentation provided by Project proponent

VCS PDMR

VVB Assessment

Date: 21/01/2025

Based on the review of the PP's response and supporting literature, VVB confirms that the PP has appropriately provided scientific studies relevant to the locations where the project activities have been implemented. These studies effectively demonstrate the technological barriers associated with the project activity if it is not registered under the A/R VCS project, in line with the CDM A/R Tool 02, and are deemed valid and satisfactory by VVB.

CAR has been closed

CAR	07	Section no.	6 VCS PDMR [Data and Parameters]	Date: 11/11/2024
Description of CAR				
PP shall complete the following as per template instructions and in consistent with ex-ante calculation carbon sheet: a. In Section 6.1 of the VCS PDMR, PP shall provide value for the parameter: "Collar diameter/Collar Girth/ Diameter/Girth at breast height (DBH/GBH)" in consistent with ex-ante calculation sheet. b. In Section 6.1 of the VCS PDMR, PP shall provide the equation for the parameter "<i>Allometric equation</i>" applied to mango and guava species, as well as the <i>volumetric equation</i> for Red Sanders, consistent with the ex-ante calculation sheet. c. In Section 6.1 of the PDMR, PP shall correct the value for wood density, as it currently states that the First Project Activity Instance Area is 165.41 ha, which is inconsistent with the ex-ante sheet where the value of wood density is stated as 0.44. d. In Section 6.1 of the PDMR, the PP shall provide the default factor applied for dead wood and leaf litter CO2 estimates, consistent with the ex-ante calculation sheet. e. In Section 6.2 of the VCS PD, PP shall provide data and parameters to be monitored for allometric equations and/or default factors used for monitoring GHG information during verification activities including SOC, DW, LL factors.				
Project proponent response				Date: 25/11/2024
a. DBH/GBH/CD values have been incorporated as suggested. Collar diameter (Mango)=28.76 cm (6th year) Collar diameter (Guava)= 1.37cm (2nd year), 3.36cm (4th year), 5.70cm (6th year), 7.28cm (8th year), 9.83cm (10th year). DBH (Red sander, m) = Girth (m)/3.14 Girth (cm) values for initial 15 years (5.0, 16.2, 23.8, 25.9, 28.0, 30.1, 32.4, 34.5, 36.1, 37.7, 39.3, 40.9, 42.5, 44.6, 44.9) b.				

Species	Botanical name	Allometric equation	Reference
Mango	Mangifera indica	$Y = 0.20 * C_{\text{collar}} \text{Diameter}^{1.85}$	https://www.researchgate.net/profile/A-Raizada/publication/365489423_Biomass_carbon_stocks_estimation_and_predictive_modeling_in_mango_based_land_uses_on_degraded_lands_in_Indian_Sub-Himalayas/links/63774b081766b34c54363701/Biomass-carbon-stocks-estimation-and-predictive-modeling-in-mango-based-land-uses-on-degraded-lands-in-Indian-Sub-Himalayas.pdf
Gauva	Psidium guajava	$Y = (3.264 X^{1.012}) + 3.446$	https://www.currentscience.ac.in/Volumes/120/10/1627.pdf

Species	Botanical name	Volume Equation	Reference
Red Sander	<i>Pterocarpus santalinus</i>	$v^{1/2} = -0.144504 + 2.943115 * D$	Andhra Pradesh forest Inventory Report, 2010

c. Suggested correction have been incorporated

d. Suggested parameters table has been incorporated for litter and deadwood.

e. Data and parameters to be monitored for allometric equations and/or default factors used for monitoring GHG information during verification activities have been provided in section 6.2 of the PDMR.

Documentation provided by Project proponent

Revised PDMR, Ex-ante, Ex-post ER sheets

VVB assessment

Date:
05/12/2024

Apropos to this finding, PP has addressed the issue by providing detailed information regarding parameters of allometric equations, collar diameter etc as per raised CAR.

However, this finding cannot be closed due to following reasons:

- PP shall provide information of application of BEF parameter in consistent with ex-ante sheet in section 6.1 of VCS PDMR.
- PP shall provide information on leakage default values in consistent with ex-ante sheet in section 6.1 of VCS PDMR.

CAR is still open.

Project proponent response

Date: 16/12/2024

Parameters table for BEF and leakage have been incorporated in section 6.1 of revised PDMR.

Documentation provided by Project proponent

Revised VCS PDMR

VVB Assessment

Date: 25/12/2024

Based on the review of revised section 6 of the VCS PDMR, VVB confirms that parameter table for BEF and leakage default values have been transparently included as per raised CAR.

CAR has been closed.

CAR	08	Section no.	6.3 VCS PDMR [Monitoring Plan]	Date: 11/11/2024
Description of CAR				
1. According to paragraph 12 of the applied methodology AR-ACM0003, <i>“If biomass distribution over the project area is not homogeneous, stratification should be carried out to improve the precision of biomass estimation. Different stratifications may be appropriate for the baseline and project scenarios in order to achieve optimal precision of estimation of net GHG removals by sinks”.</i> VVB observed that no stratification procedure has been demonstrated in Section 6.3 of the PDMR. Therefore, PP shall provide a clear demonstration of the stratification procedure applied for monitoring GHG data and information during verification activities. This should include details on plot size and its validity, particularly considering the project's significant				

differences in planting designs (e.g., species mix, different spacing models, and intercropping), in compliance with paragraph 12 of the applied methodology.

2. Section 5.1 of the VCS PDMR justifies that the baseline emissions are zero based on requirements of paragraph 11 of CDM AR-Tool 14. However, it remains unclear how baseline trees will be monitored throughout the crediting period of the project activity. Therefore, PP shall provide the plan for monitoring pre-project trees in compliance with the section 3.16.3 of VCS Standard v4.7.
3. PP shall describe the procedures for handling non-conformances with the validated monitoring plan in section 6.3 of PDMR.

Project proponent response

Date: 26/11/2024

1. As per section 6.3 of VCS PD MR, project stratification for first Project Activity Instance is based on the plantation year and project location. The area of the land parcels involved in the Project Activity and First Project Activity Instance is initially mapped by the PPs representative visiting each land parcels and verifying the land title records. The land title records contain the information of area in of Andhra Pradesh, Tamil Nadu and Madhya Pradesh. The following procedure is followed for stratification:

Pilot survey: Pilot survey is a process of preliminary sampling strategy in which information is gathered on an implemented project. In the present project, information is collected from such as plantation date, species information, location etc. Apart from that, baseline information namely species presented in project area, alternative land use scenario etc. on project area. Additionally, land parcels undergo remote sensing analysis to ensure the absence of native ecosystems within the ten-year period preceding the plantation date. This information is used for accounting the stratification.

Pre-sampling strategy: To determine each stratum's standard deviation in biomass, pre-sampling is required. Ten percent of each stratum's area is considered during the pre-sampling process in order to account for the biomass in the major carbon pool (AGB).

Sampling design and size, number of permanent sample point: The sampling design is first of all driven by the precision requirements as outlined as per project methodology. Generally, targeted precision level for biomass estimation shall be $\pm 10\%$ of the mean at a 90% confidence level. The survey sample size is determined by the variability of biomass within the samples and the precision level required as per methodology of the project The tool "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0)" as well as the sampling Calculator (Walker et al. 2007) is used to estimate the number of permanent sample plots needed. Based on the these mentioned criteria stratification is carried out as below:

Stratification

Species: The growth rates and structural variations of different species influence the distribution of biomass as well competition also play important biomass distribution.

Planation date/ Year: Larger or older species often contain more biomass, with their stems and trunks accounting for a considerable proportion of this biomass.

Project location: The distribution of biomass is influenced by abiotic factors including temperature, sunlight, water availability, and soil nutrients etc.

Furthermore, the following step was follows for accounting the biomass of permanent sample plot

- Sample plot location
- Plot size
- Measurement of species within the plot

Therefore, total fifteen strata were prepared based on location and plantation year. Single species was planted in each location therefore species is not use as stratification criteria.

2. As per the monitoring plan, baseline tree were identified basis their growth/species type/age and were not accounted during the monitoring activity

3. Section 6.3 of the VCS PDMR has been modified by the PP to give an extensive overview of project information handling. The process for handling non-conformances is now covered in full in this section. In particular, a non-conformity report detailing the underlying cause of the problem is produced when non-conformities are found during internal audits. Following the reporting of a non-conformity, the Carbon Credit Manager develops and implements corrective action plans in consultation with the Carbon Credit Head, Plantation Head, MRV Personnel, and Forestry Expert. The Internal Audit team evaluates the non-conformity after these steps are taken. The Internal Audit team will formally close the non-conformity if the evaluation finds that the issue has been successfully fixed.

Documentation provided by Project proponent

Revised PDMR

Management Plan

VVB assessment

Date: 05/12/2024

Apropos to this finding, the PP has addressed the issue by providing detailed information on the stratification of the project activity, including stratification based on planting year and species planted, as well as the calculation methods and the number of selected PSPs for monitoring activities and PDMR is revised to include the procedures for handling non-conformances as per template instructions.

However, this finding remains unresolved for the following reasons:

- PDMR does not clearly specify the size of the strata used to calculate CO₂ or provide supporting evidence.
- PP shall provide detailed information on the monitoring plan, particularly regarding measurements at collar diameter and procedures for forked trees.
- PP shall include the monitoring plan for monitoring baseline trees.

CAR is still open

Project proponent response

Date: 10/12/2024

- PP as already provided the size of the strata in section 7.1. The total number of PSPs for this project activity is 47 and each PSP quadrat size is 25-meter x 25-meter (0.0625 ha) size for Mango and Red sander and 15-meter x 15-meter for Guava (0.0225 ha). All the tree within the quadrat is measured and marked within each sample land parcel. However, PP has now elaborated the same in the section 6.3 of the VCS PDMR.
- PP has provided detailed information on the monitoring plan, for the measurements at DBH and collar diameter and procedure for the forked trees in section 6.3 of the VCS PDMR.
- The project implementation and management activities did not impact the growth of baseline trees. The project involves plantations of selected tree species, which are easily *distinguishable from baseline trees based on their growth patterns, species characteristics, and their distinct placement within the project area. Baseline trees, including those existing along boundaries, have been preserved and carefully monitored to ensure no adverse effects from project activities.

Stakeholders are advised of the regular monitoring of the baseline trees to ensure that any issues impacting are promptly identified and addressed. Farmers, involvement will aid in the protection and preservation of the trees.

However, PP has now included the same in section 6.3 of VCS PDMR for the monitoring of the baseline trees.

Documentation provided by Project proponent

PDMR and Implementation and management plan	
VVB Assessment	Date: 25/12/2025
Based on the review of VCS PDMR and Implementation VVB confirms the following:	
1. Specifications on the size of the strata used to calculate CO₂ has now been provided in the VCS PDMR. PP has reviewed the references and found it appropriate. 2. Detailed information on the monitoring plan and regarding measurements at collar diameter and procedures for forked trees has also been updated in the PDMR along with supporting evidence. VVB has reviewed this information and supporting evidence and confirms the approach is valid and appropriate. 3. Monitoring plan for baseline trees has also been provided in the VCS PDMR and management manual as well.	
CAR has been closed.	

Table 3. FAR from this Validation and Verification

FAR	01	Section no.	Baseline and additionality applicability demonstration for future instance	Date: 29/11/2025
Description of FAR				
In response PRR comments, since the Project Proponent has stated that future Project Activity Instances (PAIs) will follow the same baseline scenario and additionality demonstration established for the initial PAI, the verifying VVB shall assess each newly added geographic area to confirm consistency with or greater conservativeness than the original justification as per the VCS requirements. Thus, VVB raised a FAR01 to the next verification to verify that the same baseline and additionality (as initial PAI) applicability demonstration for the future PAIs within the grouped area as per section 3.6.10–3.6.17 of VCS standard requirements.				
Project participant response				Date: DD/MM/YYYY
Documentation provided by project participant				

VVB assessment	Date: DD/MM/YYYY

APPENDIX 5: COMPETENCY CERTIFICATES

Carbon Check (India) Private Limited

Certificate of Competency

Vempally Prashanth

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:
for the following functions and requirements:

- | | | | |
|--|---|--|---|
| ☐ Management Function | ☐ Administrative | ☒ Validator/Verifier | ☒ Team Leader |
| ☐ Acting Team Leader | ☒ Technical Expert | ☐ Technical Reviewer | ☐ Trainee Assessor |
| ☒ Assessor | ☒ Regional Expert | ☐ Gender Expert | ☐ Financial Expert |
| India | | | |
| ☐ Plastic Waste Expert | ☐ Health Expert | ☐ CCB Expert | ☒ SDG Expert |
| ☒ Expert Social Aspect | ☒ Expert Environmental Aspect | ☐ Internal Auditor | ☐ Legal Expert |
| ☐ FOEN Approved Technical Expert | ☐ FOEN Approved Quality Officer | | |

in the following Technical Areas:

- ☐ PWRP 2 - Plastic Waste Collection & Recycling
- ☐ TA 1.1 - Thermal energy generation
- ☐ TA 1.2 - Renewable Energy generation
- ☐ TA 10.1 - Fugitive emissions from oil and gas
- ☐ TA 13.1 - Solid waste and Wastewater
- ☐ TA 13.2 - Manure
- ☒ TA 14.1 - Afforestation and reforestation (except REDD & REDD+)

- ☒ TA 14.1 - Afforestation and reforestation (only REDD & REDD+)
- ☐ TA 15.1 - Agriculture (With Model Validation)
- ☐ TA 15.1 - Agriculture (Without Model Validation)
- ☐ TA 16.1 Carbon Capture and Storage ☐ TA 2.1 - Energy Distribution
- ☐ TA 3.1 - Demand Side Energy Efficiency
- ☐ TA 4.1 - Cement and Lime Production
- ☐ TA 4.n - Waste Heat Recovery & Fuel Switch ☐ TA 5.1 - Chemical Industry
- ☐ TA 5.2 - Caprolactam, Nitric and Adipic Acid ☐ TA 7.1 - Transport
- ☐ TA 8.1 - Mining/Mineral Production
- ☐ TA 9.1 - Aluminium and magnesium production
- ☐ TA 9.2 - Iron, Steel and Ferro-alloy Production
- ☐ TA PWRP 1 - Plastic Waste Collection & Recycling

Issue Date 27-11-2025 **Expiry Date** 27-11-2026

Vikash Kumar Singh
Director - Compliance

Carbon Check (India) Private Limited

Certificate of Competency

Jyoti Thapliyal

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|--|---|
| ☐ Management Function | ☐ Administrative | ☒ Validator/Verifier | ☐ Team Leader |
| ☐ Acting Team Leader | ☒ Technical Expert | ☐ Technical Reviewer | ☐ Trainee Assessor |
| ☒ Assessor | ☒ Regional Expert | ☐ Gender Expert | ☐ Financial Expert |
| <div style="border: 1px solid black; padding: 2px; display: inline-block;">India</div> | | | |
| ☐ Plastic Waste Expert | ☐ Health Expert | ☐ CCB Expert | ☐ SDG Expert |
| ☐ Expert Social Aspect | ☐ Expert Environmental Aspect | ☐ Internal Auditor | ☐ Legal Expert |
| ☐ FOEN Approved Technical Expert | ☐ FOEN Approved Quality Officer | | |

in the following Technical Areas:

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- ☐ TA 13.1 - Solid waste and Wastewater
- ☐ TA 13.2 - Manure
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- ☐ TA 5.2 - Caprolactam, Nitric and Adipic Acid ☐ TA 7.1 - Transport
- ☐ TA 8.1 - Mining/Mineral Production
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- ☐ TA PWRP 1 - Plastic Waste Collection & Recycling

Issue Date 27-11-2025 **Expiry Date** 27-11-2026

Vikash Kumar Singh
Director - Compliance

Carbon Check (India) Private Limited

Certificate of Competency

Vikash Kumar Singh

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other

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for the following functions and requirements:

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| ☒ Assessor | ☒ Regional Expert | ☐ Gender Expert | ☒ Financial Expert |
| India, South A | | | |
| ☒ Plastic Waste Expert | ☐ Health Expert | ☒ CCB Expert | ☒ SDG Expert |
| ☒ Expert Social Aspect | ☒ Expert Environmental Aspect | ☐ Internal Auditor | ☐ Legal Expert |
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- ☐ TA 5.2 - Caprolactam, Nitric and Adipic Acid ☒ TA 7.1 - Transport
- ☐ TA 8.1 - Mining/Mineral Production
- ☐ TA 9.1 - Aluminium and magnesium production
- ☐ TA 9.2 - Iron, Steel and Ferro-alloy Production
- ☐ TA PWRP 1 - Plastic Waste Collection & Recycling

Issue Date 26-11-2025 Expiry Date 26-11-2026

Vikash Kumar Singh
Director - Compliance

Carbon Check (India) Private Limited

Certificate of Competency

Isha Kapoor

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS, A 6.4 AS/ ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|---|--|---|
| ☐ Management Function | ☐ Administrative | ☒ Validator/Verifier | ☒ Team Leader |
| ☐ Acting Team Leader | ☒ Technical Expert | ☒ Technical Reviewer | ☐ Trainee Assessor |
| ☒ Assessor | ☒ Regional Expert | ☐ Gender Expert | ☐ Financial Expert |
| <div style="border: 1px solid #ccc; padding: 2px 10px; display: inline-block;">India</div> | | | |
| ☐ Plastic Waste Expert | ☐ Health Expert | ☐ CCB Expert | ☒ SDG Expert |
| ☒ Expert Social Aspect | ☒ Expert Environmental Aspect | ☐ Internal Auditor | ☐ Legal Expert |
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- ☐ TA 13.1 - Solid waste and Wastewater ☐ TA 13.2 - Manure
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Issue Date 26-11-2025

Expiry Date

26-11-2026

Vikash Kumar Singh
Director - Compliance