GROUPED AGROFORESTRY PROJECT IN VARIOUS STATES OF INDIA

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Project Title	GROUPED AGROFORESTRY PROJECT IN VARIOUS STATES OF INDIA
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Version	5.0
***VCS Standard* Version**	4.7
Client	Infinite Environmental Solutions Limited
Prepared by	Carbon Check (India) Private Limited
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Summary:

Description of the project

Infinite Environmental Solutions Limited has contracted Carbon Check (India) Private Limited to carry out validation and verification of VCS project activity **"Grouped agroforestry project in various states of India"** (hereafter referred to as "The grouped project") with regards to the relevant requirements of **VCS Standard version 4.7 (dated 16 March 2024)**/B01/.

The VCS project **"Grouped agroforestry project in various states of India"** is a grouped Afforestation Reforestation & Revegetation (ARR) agroforestry project The first Project Activity Instance (1st PAI) spans 1,948.41 hectares across districts in Assam, Bihar, Andra Pradesh and Karnataka, and as part of the grouped project activity, the grouped project boundary is defined Assam, Bihar, Andhra Pradesh and Karnataka states in India with future scaling up to 10,000 ha of area.The ARR project activity designed to afforest the small holder croplands with low productivity/fallow lands. Plantation activity is implemented at different locations in the state of Assam, Bihar, Andhra Pradesh and Karnataka of India. The project has been designed with farmers for practicing agroforestry and tree planting on their own farmlands.

In the first PAI, plantations were carried out between 2019 and 2025, covering a total area of 1,948.41 hectares. 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 July 2019, with the ex-ante estimated net GHG removals for the entire 30-year crediting period projected at 725,812 tCO_2e, resulting in an average annual removal of 24,194 tCO_2e (before buffer deduction). For the current monitoring period (01 July 2019 – 01 April 2025), the net anthropogenic GHG removals achieved amount to 85,456 tCO_2e.

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 three carbon pools for carbon accounting are:

- ✓ Above ground biomass
- ✓ Below ground biomass
- ✓ 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 Agroforestry project 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 July2019
Listing of project on VERRA registry for public comments	16 August 2022 to 15 September 2022
Crediting period	01July 2019 – 30 June 2049 (30 years)
First monitoring period	1July 2019 – 30 April 2025
Date of monitoring	27 May 2025 to 31 May 2025

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 August ss2023)
- ✓ VCS Standard (v4.7, dated 16 April 2024)
- ✓ VCS Program Definitions (v4.5, dated 16 April 2023)
- ✓ VCS Registration & Issuance Process (v4.6, dated 16 October 2024)
- ✓ VCS AFOLU Non-Permanence Risk Tool (v4.2, dated 03 May 2024)
- ✓ VCS Validation and Verification Manual (v3.2, dated 19 October 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 that 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 audit, Carbon Check (India) Private Limited (CCIPL hereafter) conducted an assessment including a desk review of the VCS PDMR[/01/] and supporting documents[/1-25/] 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 27 May2025 – 31 May2025.

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

During the joint validation and verification, a total of 30 findings has been raised, which includes 08 Corrective Action Requests (CARs), 21 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 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-x/]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) removal VCUs
01 July 2019 to 01 April 2025	**80,534**	**85,456**

CONTENTS

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 **"Grouped agroforestry project in various states of 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/1-25/ against the VCS requirements and applied methodology/B02/ and tools/BO3/, 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/,
- ✓ Project ownership/05/
- ✓ GHG sources, sinks and/or reservoirs /02/.
- ✓ Growth and yield models/02/,
- ✓ Stakeholder involvement/07/Environmental impacts, Baseline and additionality justification//
- ✓ Sustainable development contributions/B02/
- ✓ 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/BO3/
- ✓ 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 validation assessment has been carried out to evaluate the reasonableness of assumptions, limitations, and methodological choices used by the Project Proponent (PP) in determining ex-ante parameters and carbon stock estimations. The assumptions and fixed values applied for relevant data and parameters have been carefully reviewed against the VCS Project Description and Monitoring Report (PDMR[/01/]), supporting calculation spreadsheets[(02)], peer-reviewed literature[/22/], IPCC default values[/22/B05/], and species-specific scientific studies.

To estimate biomass and carbon stocks, species-specific allometric equations were used for 13 project species, and volumetric equations were employed for 3 additional species. VVB assessed the credibility of the equations based on their scientific basis, applicability to the host country context, and methodological consistency with the applied VCS methodology [(B02)]. A detailed breakdown and justification of these equations are included in Section 3.4.8 of this report.

Allometric equation for the Spp.			
Species	**Equation**	**Source**	**Growth model source**
Som Tree/ *Persia bombycinia*	Y=exp (-1.996 + 2.32 ln DBH)	Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134 *http://www.fao.org/docrep/W4095E/W4095E00.htm*	The growth model of Som tree is developed basis ex-post values observed for 4 years and 6 years old plantation.
Mango/ *Mangifera Indica*	Y = 0.20 × Collar Diameter^1.85	Biomass, carbon stocks estimation and predictive modelling in mango-based land uses on degraded lands in the Indian Sub-Himalayas	https://krishikosh.egranth.ac.in/assets/pdfjs/web/viewer.html?file=https%3A%2F%2Fkrishikosh.egranth.ac.in%2Fserver%2Fapi%2Fcore%2Fbitstreams%2F3471dde7-11cf-482c-801f-9cb015a8aa0e%2Fcontent
Guava/ *Psidium guajava*	Y = (3.264X^1.012) + 3.446	Biomass production and carbon stock in Psidium guajava orchards under hot	https://www.currentscience.ac.in/Volumes/120/10/1627.pdf

		and sub-humid climate* by Sushanta Kumar Naik et al.	
Tamarind/ *Tamarindus indica*	Y=exp (-1.996 + 2.32 ln DBH)	Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134	https://www.researchgate.net/profile/S-J-Patil/publication/266492722_Performance_of_soybean_-safflower_under_different_tree_species_in_black_soils/links/5b6d2fbf92851ca65053fa46/Performance-of-soybean-safflower-under-different-tree-species-in-black-soils.pdf
Eucalyptus spp.	AGB=0.493*DBH^1.81	https://epubs.icar.org.in/index.php/IJAgS/article/view/91649/37213	https://www.researchgate.net/publication/376701140_Variation_in_growth_and_Wood_Properties_of_four_Eucalyptus_species_their_Hybrids_and_Clones_in_Vidarbha_Region_Maharashtra_India
Jamun/ *Syzigium cumini*	Y=exp (-1.996 + 2.32 ln DBH)	Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134	https://www.researchgate.net/profile/Gopal-Narkhede/publication/298073892_Carbon_sequestration_potential_of_some_fruit_trees_in_Satara_District_of_Maharashtra_India/links/5d3f14554585153e592bc021/Carbon-sequestration-potential-of-some-fruit-trees-in-Satara-District-of-Maharashtra-India.pdf
Areca nut/ *Areca catechu*	AGB=exp((LN(-1.853+0.728*LN(DBH^2*H))	Rico Kongsager, Jonas Napier, Ole Mertz. (2013). The carbon sequestration potential of tree crop plantations. Where,	https://registry.verra.org/app/projectDetail/VCS/3892

		BA is basal area in cm2	
Gamhar/ *Gmelina arborea*	AGB=0.18*D^2.16*1.32	*https://doi.org/10.3390/land10040387*	https://www.mpsfri.org/files/TB_30.pdf
Teak / *Tectona grandis*	Y=0.4989X^2-0.202X-21.971	*https://www.researchgate.net/profile/KaushalendraJha/publication/276139353*	https://www.fao.org/4/ac773e/ac773e08.htm
Cashew/ *Anacardium occidentale*	AGB=0.8450 × (dbh^2)^0.8873	*https://www.discoveryjournals.org/discovery/current_issue/v55/n285/A4.pdf*	(PDF) PERFORMANCE OF HIGH YIELDING VARIETIES OF CASHEW (ANACARDIUM OCCIDENTALE L.) UNDER DIFFERENT PLANTING DENSITIES
Mahogony/ *Swietenia macrophylla*	Y= exp (-2.302+0.894 Ln(D^2*H)	Development and Evaluation of Species-Specific Biomass Models for Most Common Timber and Fuelwood Species of Bangladesh (scirp.org)	https://registry.verra.org/app/projectDetail/VCS/2479
Citrus limon and *Citrus sinensis*	Y=10^(-0.535+log10*(BA))	https://www.fao.org/4/W4095E/w4095e06.htm#3.1.1%20general%20equation	Sci-Hub | Soil nutrient status, yield and quality of lemon (Citrus limon Burm.) cv. “Assam lemon” as influenced by bio-fertilizers, organics and inorganic fertilizers. Journal of Plant Nutrition, 1–11 |10.1080/01904167.2019.1584213
Shisham/ *Dalbergia sissoo*	TB=0.904*DBH^1.760	*https://www.researchgate.net/publication/305905765*	https://www.researchgate.net/publication/305905765_BIOMASS_AND_CARBON_STORAGE_IN_TREES_GROWN_UN

			DER_DIFFERENT_AGROFORESTRY_SYSTEMS_IN_SEMI_ARID_REGION_OF_CENTRAL_INDIA?enrichId=rgreq-8112f807ee5d6a14ab0c0f6760387827-XXX&enrichSource=Y292ZXJQYWdlOzMwNTkwNTc2NTtBUzozOTE5NDAzNDU0ODMyNjVAMTQ3MDQ1NzI2ODYyNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf
Katurai/ *Sesbania grandiflora*	Y=exp(-1.996+2.32* lnD)	Th-6877.pdf	For growth modelling data was extrapolated based on measurements from observed field data.
Volumetric equation and Wood Density			
Species	**Equation**	**Source**	**Growth model source**
Red sander/ *Pterocarpus santalinus*	v^1/2=-0.144504+2.943115*D	Andhra Pradesh forest Inventory Report,2010	https://krishikosh.egranth.ac.in/assets/pdfjs/web/viewer.html?file=https%3A%2F%2Fkrishikosh.egranth.ac.in%2Fserver%2Fapi%2Fcore%2Fbitstreams%2Fad5f5982-8fc8-445d-b889-59fecc51074b%2Fcontent
Wood density	0.44	As per the IPPC default value, Tale 3.19.	
Coconut / *Cocus nucifera*	V = 0.2138 - 2.949*D + 12.258*(D^2)	A study of estimation of growing stock in TOF of Tamil Nadu	https://raskisimani.files.wordpress.com/2013/01/cocos-nucifera-coconut.pdf
Wood density	0.50	*https://www.fao.org/4/w4095e/w4095e0c.htm*	
Asan/*Terminalia tomentosa*:	V=-0.00012+0.29302*D^2*H	https://fsi.nic.in/uploads/documents/volume-equations-for-forests-of-india-	*https://krishikosh.egranth.ac.in/assets/pdfjs/web/viewer.html?file=https%3A%2F%2Fkrishiko*

		nepal-and-bhutan-2803-2023.pdf	*sh.egranth.ac.in%2Fserver%2Fapi%2Fcore%2Fbitstreams%2Fa543b5aa-f883-4a54-afdf-8e347dfac714%2Fcontent*
Wood density	0.73		https://www.fao.org/3/w4095e/w4095e0c.htm

The selection of conservative growth models and the application of default values (e.g., carbon fraction: 0.47, root-to-shoot ratio: 0.25, BEF: 1.57) are in line with IPCC and AR CDM Tool 14 guidelines. SOC-related parameters, such as reference SOC, land use, management, and input factors, have been applied as per Tool 16 (V01.1.0), with supporting evidence drawn from HAC soils and long-term cultivation data (e.g., SOCREF,i = 38, fLU,i = 0.58).

Based on the above, VVB concludes that the assumptions used for the estimation of carbon stocks and removals are scientifically sound, conservative, and appropriate, and thus support a reasonable representation of expected outcomes under future project activities.

Verification – Level of Assurance:

For verification, the VVB performed a detailed assessment of the project data, monitoring methodology, and removal calculations to provide a reasonable level of assurance. The audit followed the defined materiality thresholds and conformance requirements.

Species-wise growth models and allometric equations were re-evaluated for consistency and alignment with field measurement protocols. Based on this review, VVB confirms that the carbon calculations yield plausible and defendable values. The removal rates derived from the applied models are within expected ranges for tropical agroforestry systems and consistent with regional forestry data.

S.No.	Species	Allometric Equation	Source
1.	Mango / *Mangifera indica*	Y= 30.40 *EXP(-5.07*EXP(-0.26*collar diameter)+ 1.277	https://www.tandfonline.com/doi/pdf/10.1080/17583004.2019.1642043
2.	Guava/ *Psidium guajava*	Y = 0.069 × CD^2.456	Rathore, A. C., Kumar, A., Tomar, J. M. S., Jayaprakash, J., Mehta, H., Kaushal, R., ... & Chaturvedi, O. P. (2018). Predictive models for biomass and carbon stock estimation in Psidium

			guajava on bouldery riverbed lands in North-Western Himalayas, India. Agroforestry systems, 92, 171-182
3.	Mahogany/ *Swietenia macrophylla*	Y= exp (-2.302+0.894 Ln(D^2*H)	Development and Evaluation of Species-Specific Biomass Models for Most Common Timber and Fuelwood Species of Bangladesh (scirp.org)
4.	Som tree/ *Persia bombycinia*	Y=exp (-1.996 + 2.32 ln DBH)	Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134 http://www.fao.org/docrep/W4095E/W4095E00.htm
5.	Tamarind/ *Tamarindus indica*	Y=exp (-1.996 + 2.32 ln DBH)	Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134 http://www.fao.org/docrep/W4095E/W4095E00.htm
6.	Cashew Nut/ *Anacardium occidentale*	Y =10^{-0.535+$\log_{10}$ (BA)}	https://www.fao.org/4/W4095E/w4095e06.htm#3.1.1%20general%20equation
7.	Citrus Spp. – *C. limon* and *C. sinenis*	Y=10^(-0.535+$\log_{10}$*(BA))	https://www.fao.org/4/W4095E/w4095e06.htm#3.1.1%20general%20equation
8.	Areca nut/ *Areca catechu*	AGB=exp((LN(-1.853+0.728*LN(DBH^2*H))	(PDF) Allometric Equation for Pinang (Biomass models for estimating carbon storage in Areca palm plantations - ScienceDirect)
9.	Jamun/ *Syzigium cumini*	EXP(-1.996+2.32*LN(I14))	https://www.researchgate.net/profile/Gopal-Narkhede/publication/298073892_Carbon_sequestration_potential_of_some_fruit_trees_in_Satara_District_of_Maharashtra_India/links/5d3f14554585153e592bc021/Carbon-sequestration-potential-of-some-fruit-trees-in-Satara-District-of-Maharashtra-India.pdf?__cf_chl_tk=5kiISdEChDjvtBhNRlHsaljEipM8_ul5RQ.u8gm8l.s-1750662739-1.0.1.1-

			aRTN75kJPcy8aiQpLOTsdDDu5iE2QwWY.Z4jw5r38Ys
10	Teak/ *Tectona grandis*	Y=3.1749*X-21.273	(PDF) Quantification by allometric equations of carbon sequestered by Tectona grandis in different agroforestry systems
11	Shisham/ *Dalbergia sisoo*	TB=0.904*DBH^1.760	https://www.researchgate.net/publication/305905765_BIOMASS_AND_CARBON_STORAGE_IN_TREES_GROWN_UNDER_DIFFERENT_AGROFORESTRY_SYSTEMS_IN_SEMI_ARID_REGION_OF_CENTRAL_INDIA?enrichId=rgreq-8112f807ee5d6a14ab0c0f6760387827-XXX&enrichSource=Y292ZXJQYWdlOzMwNTkwNTc2NTtBUzozOTE5NDAzNDU0ODMyNjVAMTQ3MDQ1NzI2ODYyNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf
12	Gamhar/ *Gmelina arborea*	AGB=0.18*(D^2.16)*1.32	Stand Structure, Biomass and Carbon Storage in Gmelina arborea Plantation at Agricultural Landscape in Foothills of Eastern Himalayas
13	Katurai/*Sesbania grandiflora*	Y=exp(-1.996+2.32*lnD)	METHODS FOR ESTIMATING BIOMASS DENSITY FROM EXISTING DATA
Volumetric equations and Wood Density			
14.	Red Sander/ *Pterocarpus santalinus*	v^1/2=-0.144504+2.943115*D	Andhra Pradesh forest Inventory Report,2010
15	Coconut/ *Cocus nucifera*	V = 0.2138 - 2.949*D + 12.258*(D^2)	A study of estimation of growing stock in TOF of Tamil Nadu
16.	Asan/ *Terminalia tomentosa*	V=-0.00012+0.29302*D^2*H	https://fsi.nic.in/uploads/documents/volume-equations-for-forests-of-india-nepal-and-bhutan-2803-2023.pdf

Furthermore, the SOC estimation was reviewed with consideration of soil types, historical land use, and crop residue inputs. The values used (e.g., SOCINITIAL,i = 20.94, dSOCt,i = 0.80) were derived through scientifically accepted methods, and conservative caps were applied where prescribed by the tool.

The assessment for verification is conducted to provide a reasonable level of assurance of conformance against the defined audit criteria and materiality thresholds within the audit scope. Based on the audit findings, a positive evaluation statement reasonably assures that the project GHG assertion is materially correct and is a fair representation of the GHG data and information.

1.4 Summary Description of the Project

The project titled "GROUPED AGROFORESTRY PROJECT IN VARIOUS STATES OF INDIA" is a grouped initiative designed to promote sustainable afforestation, reforestation, and revegetation practices. It aims to sequester carbon on small, cropland with low productivity/fallow lands with low agricultural output through the plantation of agroforestry trees across Assam, Bihar, Andhra Pradesh and Karnataka states in India. All grouped project activities implemented in various districts of Assam, Bihar, Andhra Pradesh, and Karnataka, targeting small and marginal landholders. The total area covered under this project as of now is 1948.41 hectares. These plantations are established on privately owned lands and are managed by Infinite Environmental Solutions Limited in connection with other NGOs, which actively collaborate with farmers and other stakeholders to ensure effective implementation.

In line with the VCS PDMR[/01/], the first Project Activity Instance (PAI) covers an area of 1948.41 hectares, for which all relevant calculations and assessments have been completed. While the Joint VCS PDMR outlines a planned total of 10,000 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 consists of plantation of multipurpose tree species, which include species to established green cover in cropland with low productivity/fallow lands. Initially project has been implemented in Assam, Bihar, Andhra Pradesh and Karnataka. Project activities will continue to be carried out in these four states of India in the future. Based on the review of remote sensing GIS data and KML shapefiles[/03/], the Forest/Non-Forest Analysis Report[/03/], supporting documents[/1-25/], and findings from on-site inspections and stakeholder interviews [/I01–24/], VVB has verified that the project involves the plantation of forestry species on these previously cropland with low productivity/fallow lands. 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[/23/], and that only non-organic fertilizer (FYM) is used within the project scenario~~.~~

As confirmed through on-site inspection/interviews[/i1-24/], the rights to carbon credits have been waived by the farmers in Favor of, Mangrove Foundation of India (MFI), HLTEC and WIPES Foundation[/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 (30m*30 m for all species) sample plot design. PP has also determined the sample plot size using the tool *"*Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0)"[1]as well as the Sampling Calculator (Walker et al. 2007)[2] is used to estimate the number of permanent sample plots needed (project total as well as No. plots per stratum i) for monitoring changes in carbon pools at a desired precision level and to determine the plot locations*."*.

The 1st PAI started on 1st July 2019 with estimated GHG removal for entire 30 years crediting period is 725,812 tCO_2e with annual average of 24,194tCO_2e/year (before deducting buffer) and the net GHG removals achieved during the current monitoring period is 85,456 tCO_2e (before buffer deduction). The proposed project selected five carbon pools for carbon accounting are:

- ✓ Above ground biomass
- ✓ Below ground biomass
- ✓ Soil Organic Carbon.

1 https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-03-v2.1.0.pdf

2 Winrock International » Winrock Sample Plot Calculator Spreadsheet Tool

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:4 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[/1-25/]
- ✓ 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:4 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-3: List of Documents[/1-25/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	21 April 2025
Kickoff meeting	16 May 2025
On-site Audit	27 May 2025 to 31 May 2025
DVR Submission to Clients	01June 2025

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"

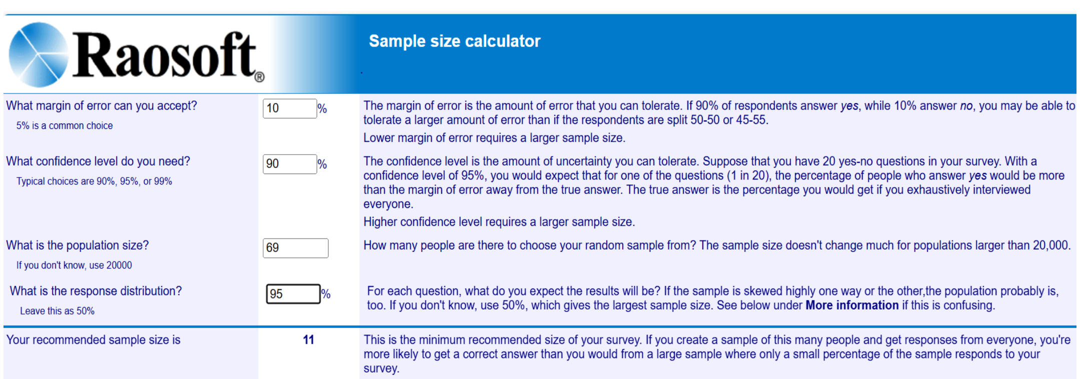
Moreover, according to paragraph 29, For applying acceptance sampling, the DOE should follow the steps below:

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 10% margin of error and 90% confidence level in determining the VVB's sample size of 12. The total permanent sample selected by PP i.e., 69 sample plots. Accordingly, VVB team chooses 12 (includes additional 1 plot to the selected 11 plots under the conservative approach) samples from the designated project region included under the project activity for the reported monitoring period with pro-rata sample size and representative of the project areas.



Raosoft® — Sample size calculator

What margin of error can you accept? 5% is a common choice	10 %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer *yes*, while 10% answer *no*, 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 *yes* 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	69	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%	95 %	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	11	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.

The 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 year of the plantation and the area (hectares). • The baseline of project activity is cropland with low productivity/fallow lands in Karnataka & Andhra Pradesh and cropland with low productivity in Bihar & Assam. The project involves plantation of Mango and mixed species across four states: Assam, Bihar, Karnataka, and Andhra Pradesh. The selection of sample plots is based on several key criteria, including the strata year of plantation, the area under cultivation in each state, and the type of plantation Mango or Mixed species. Plots established between 2019 and 2024 have been selected to ensure comprehensive representation of all plantation years within this timeframe, in accordance with the stratification approach defined by the Project Proponent. Additionally, all four states fall within the same climatic zone i.e. hot humid, providing a consistent ecological context for the VVB’s assessment. Given the relatively smaller plantation areas in Assam (7%) and Bihar (4%), representing less than 15% of total project areas. The VVB has selected these 12 sample plots from Andhra Pradesh and Karnataka, where the plantation scale is more substantial. These selected plots encompass both Mango and Mixed species plantations and are distributed across four districts two in each of the two states, representing the entire project populations.

Sample approach for On-site inspection:

VVB’s sample size	Plantation Type	Plot Id	Year of plantation	District	Number of Plots
12	**Andhra Pradesh**				
	Mango	3 12 16	2019 2020 2021	Chittoor	3
	Mixed	35 57 66	2019 2022 2023	Sri Sathya Sai	3
	Karnataka				
	Mango	21 26 30	2022 2023 2024	Shimoga	3

	Mixed	39 44 69	2020 2021 2024	Uttar Kannad	3

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	Chiluveri	Murari	CCIPL	x	x	x	x
2.	Team Member	IR	Thapliyal	Jyoti	CCIPL	x	x	x	x
3.	Trainee Assessor	IR	Chauhan	Sourabh	CCIPL	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 centralor other office of VCS Validator and Verifier or Outsourced entity)
1.	Technical Reviewer	IR	Kapoor	Isha	CCIPL
2.	Approver	IR	Anand	Amit	CCIPL

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, CCIPL 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: 08 May 2025) 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[/07/], stakeholders involved in project implementation[/05/06/], Non-Permanence Risk Report[/04/], peer-reviewed literature[/B05/], monitoring SOPs and other supporting documents [APPENDIX 3: 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 3: List of Documents outlining the documentation reviewed during the joint validation and verification process.

Fig 2: Onsite Document verification.

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 3) and VCS PDMR. 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, farmers 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[/i1-24/.]

During the on-site inspection[/i1-24/], some farmers/landowners were interviewed on the VCS project and status of their plantation. The opening meeting was conducted at Hubli, Karnataka on 27th May 2025 with PP, Implementation partner and Project Management team and closing meeting conducted on 31st May 2025 with PP, and Project Management team at Andhra Pradesh.

Table IV: Project representatives and stakeholders interviewed

S. No.	Interview			Date	Subject
	Last name	First name	Affiliation		
/i-01/	Tomar	Pankaj Kumar	IESL	27 May 2025 to 31 May 2025	• 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/	Mane	Prasad Prabhaker	IESL		• PP's roles and responsibilities. • Baseline scenario. • Project implementation. • Future project plans
/i-03/	Yedage	Sakku Biru	Farmer	27 May 2025	• PP's roles and responsibilities. • Baseline scenario. • Project implementation. • Future project plans. • Organization structure, roles, and responsibilities. • Changes in organization structure • Ownership of land titles • Ownership of carbon credits
/i-04/	Kumar	RB	SCODWES (MFI)	27 May 2025	
/i-05/	--	Parameshappa	SCODWES (MFI)	27 May2025	
/i-06/	Bai	Tammi	Farmer	27 May2025	
/i-07/	---	Manjunath	Farmer	27 May 2025	

/i-08/	Ahmed	Nayaz	Farmer	27 May 2025	
/i-09/	Gowda	Puttappa	Farmer	27 May 2025	
/i-10/	Swami	Rudra	Farmer	27 May 2025	
/i-11/	Lakshmi	Rama	Farmer	28 May2025	
/i-12/	Reddy	A Surya Narayana	MFI	28 May/2025	
/i-13/	Reddy	G Jaya Chandra	Farmer	28 May2025	
/i-14/	Babu	Ramesh	MFI	28 May 2025	
/i-15/	Bakash	Allah	Farmer	29 May2025	
/i-16/	-	Fatima	Farmer	29 May2025	
/i-17/	-	Sarswati	Farmer	30 May 2025	
/i-18/	Kumar	Uday	MFI	30 May2025	
/i-19/	K	Muni Krishana	MFI	30 May 2025	
/i-20/	K	Bhaskar Reddy	Farmer	30 May 2025	

/i-21/	Kumar	P.R.Pawan	MFI (MRV)	30 May 2025	• Stakeholder consultation process • Grievance mechanism • Baseline scenario • Ownership of carbon credits • Project implementation
/i-22/	--	Nagaraju	Farmer	30 May 2025	
/i-23/	Kumar	R. Indu	MFI	30 May 2025	• 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-24/	A.	Tirupal	MFI (MRV)	30 May 2025	•

Fig 2: Interviews with Local Stakeholder and MRV personal

2.4 Site Visits

VVB has been conducted a review and on-site visit to validate and verify 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.

The objective of the project site visit is to verify the details as mentioned in the VCS PDMR/01/. The joint validation verification on-site inspection/i01-24/ has been conducted from 27th May 2025 to 31st May 2025 in the states of Karnataka and Andhra Pradesh.

During onsite inspections, the VVB has observed plantation of multiple species including Mango (major), Cashew, Areca nut, Tamarind, Citrus, Sesbania etc.., as mentioned in the PDMR. Relevant stakeholders have been interviewed, revealing changes in the baseline scenario and specific plantation techniques used for distinct areas. Mitigation measures to minimize project area risks were also evaluated. Ground truthing, on-site inspections, and interviews with the project proponent and stakeholders including with farmers, MRV personal were conducted to assess project implementation, field data collection, the baseline scenario, and the project scenario as described in PDMR/01/. Members of the Carbon Check VVB team visited sites within the project boundary and confirmed that the pre-project scenario involved cropland with low productivity/fallow lands with low output areas, validating the baseline and project implementation through on-site inspections and interviews. The project activity's plantation is organized by the year of planting and species. The VVB conducted a risk assessment to encompass all selected sites for the validation and verification approach.

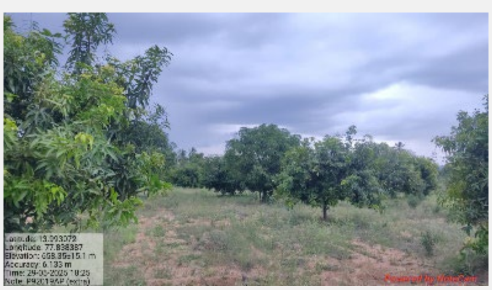
Plantation of the four species for varying year of plantations has been observed by the VVB. VVB has interviewed the relevant stakeholders/i1-24/. VVB has observed the change in baseline scenario and the plantation techniques carried out for specific area under specific baseline scenario. Also, the mitigation 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 Plot Number, State and GPS coordinates	Landowner	Species and Plantation Year	Farmer interviews

Plot 1. Karnataka  GPS Coordinates: 14.961302 N 74.888872 E	Sakku Biru	Cashew 2022 Strata-(Mixed)	VVB, based on the on-site inspection[/i01-24/], verifies the following: The project lands were cropland with low productivity/fallow lands prior to the project activity through stakeholder interviews and onsite inspections. The stakeholders learned about the project through implementation partners and received plantation saplings free of charge. All plantation activities were carried out by the farmers without external labour costs. They are informed about the carbon credits, the carbon project, benefit-sharing mechanisms, project longevity and the grievance management process. Also, VVB reproduced the tree measurements, verified the on-ground implementation, survival rates during onsite inspections.
Plot 2. Karnataka  GPS Coordinates: 14.96129 N 74.888873 E	Tammi Bai	Cashew 2020 Strata-(Mixed)	
Plot 3. Karnataka 	Manjunath	Mango 2021 Areca nut 2023 Strata-(Mixed)	

GPS Coordinates: 14.803735 N 75.036901 E			The landowners have also submitted their land Patta documents, and they confirm that there was no previous plantation on the land. The project field teams are accessible to farmers in person and through contact ensuring ongoing communication and grievance mechanism. Despite financial challenges, the landowner and their family are satisfied with the support provided by Infinite Environmental Solutions Ltd. for their livelihood.
Plot 4. Karnataka  GPS Coordinates: 14.457358 N 75.257224 E	Nayaz Ahmed	Mango 2021	
Plot 5. Karnataka  GPS Coordinates: 14.4771849 N 75.2357040 E	Puttappa Gowda	Mango 2024	
Plot 6. Karnataka  GPS Coordinates:	Rudra Swami	Mango 2023	

14.459229 N 75.256449 E			
Plot 7. Andhra Pradesh  GPS Coordinates: 14.414011 N 77.917892 E	Rama Lakshmi	*Citrus sinensis.* 2022 Strata-(Mixed)	
Plot 8. Andhra Pradesh  GPS Coordinates: 14.043069 N 77.81998 E	Jaya Chandra Reddy	Katurai 2022 Strata-(Mixed)	
Plot 9. Andhra Pradesh  GPS Coordinates: 13.993072 N 77.838387 E	Allah Bakash	Mango 2020	

Plot 10. Andhra Pradesh  GPS Coordinates: 13.566289 N 79.068251 E	Sarswati	Mango 2019	
Plot 11. Andhra Pradesh  GPS Coordinates: 13.392147 N 78.999978 E	Bhaskar Reddy	Mango 2020	
Plot 12. Andhra Pradesh  GPS Coordinates: 13.25232 N 79.769783 E	Nagaraju	Mango 2019	
Plot 13. Andhra Pradesh	Fatima	Mixed 2019	

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GPS Coordinates: 13.993371 N 77.835837 E</td>
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Fig.3 Onsite data collection

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 aspects 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*".

In line with VCS PDMR, the annual average GHG emission mitigation (tCO2-e) from the project has been estimated as <300,000 tCO2e/year i.e., 30,9tCO2e. Hence, the applied materiality threshold would be 5%.

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_2e 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_2e per year

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 85,456tCO_2e which is equal to 4,0881tCO_2e.

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, 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.	**VCS project activity requirements**	High	This corresponds to	On the basis of review of the VCS PDMR[/01/] and

	Adherence to VCS rules and requirements related to AFOLU and applicable category i.e., ARR, including criteria for inclusion of future project instances.		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 basisof inclusion of new project instances.	supporting documents[1-25] 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.. HLTEC Mangrove Foundation of India (MFI) and Holistic Life Transforming and Empowering Community (HLTEC) and WIPES foundation holds the contractual right to the land within the project boundary for the species to be planted, and the associated GHG emission removals (carbon credit	Through on-site inspections and interviews[i1-24], 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

			agreement). The evidence of title agreements of Infinite Environmental Solutions Limited (PP), Mangrove Foundation of India (MFI), HLEC and WIPES Foundation 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[/i1-24/] 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 cropland with low productivity/fallow lands with low output, this

				refers to areas where agricultural activity is cropland with low productivity/fallow lands is low-yielding, unproductive, and primarily practiced for basic survival.
4.	**Time period (for e.g., project start date, start date of crediting periodand 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 Supporting evidence dated 01-July-2019 provided by PP and onsite interviews and inspections/i1-24/VVB confirms the start date of the project is 1st July 2019. 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** Accuracy of baseline scenario identification and additionality	High	Since this is a grouped project which intends to include new activity instances, the baseline determination and	Based on onsite interviews/i1-24/and review of PRA reports/15/and LULC Maps /03/VVB confirms that the demonstration of baseline and additionality of the

	demonstration as per VCS requirements, applied methodology, and applicable tools.		additionality demonstration for all project activity instances under grouped project present at validation and criteria for future instances forms a high risk.	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[/i1-24/] 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-post carbon calculation.	High	In line with the methodology applied and/or associated tool, sources for the data such as default values (i.e., conversion factors, root-shoot ratio) from secondary sources such as Peer-reviewed national and/or international database, published data, and procedures for field measurement forms a high risk for overall carbon	Based on assessment of all sources, sinks and reservoirs[/01/] that are included in the project report and interviews[/i1-24/,] VVB concludes that the choice of allometric equations and IPCC Values opted is fine as per the applied methodology. Thus, risk has been mitigated.

			removals from the project.	
8.	**GHG removals estimation including future estimate / calculation.** Accuracy of default/ex-antefixed 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 highrisk for overall carbon removals from the project.	Based on the review of calculation spread sheets/02/ including all baseline emission, project emissio n,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 area of sample plots, monitoring of project implementation	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 plots, data/parameters, sample size determination,	Based on the review of VCS PDMR/01/, Monitoring plans/06/, SOPs/06/ and onsite interviews/i1-24/ with the MRV personnels/i01-24/ VVB confirms that the monitoring approach followed for the project, data and parameters to be monitored have ben clearly defined in the VCS PDMR/01/. In addition to that VVB has reviewed approaches followed for monitoring and sampling and found it appropriate as per the

			sampling points, project monitoring and reporting adds further complexity to the monitoring. Thus, in opinion of VVB, this possesses high risk.	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 theproject 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-24/ VVB confirms that the 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 b y In finite Environmental Solutions Limited and its ground implementing partners Mangrove Foundation of India (MFI), Greenmile Agroforestry Private Ltd., HLTEC and WIPES Foundation	Based on the review of NPRR/04/ and supporting documents/04/ and references provided/04/, VVB confirms that supporting documents have been provided in line with the claimed NPRR scores the assessment of and onsite interview/i-1-

			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.	24/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 cropland with low productivity/fallow lands output the risk corresponds to medium category.	On the basis of on-site inspection and interviews/i-24/, 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, a leakage is taking place. Thus, the risk has been mitigated.
13.	**Project Area and Eligibility** Assessment of eligibility of land and calculation of area for each geographic area specified in the PD.	High	This corresponds to high risk since compliance with VCSA eligibility for non-clearance of native ecosystems (within the 10-year period prior to the	Based on the review of KML files /03/ and onsite inspections/i1-24/ VVB confirms that the project is not being implemented on wetlands and the delineation of the project

			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.	area is provided in accordance with the VCS Standard 4.7 requirements. Based on review of monitoring plan/06/ VVB confirms that the pits have been fixed at 0.3 meter * 0.3 meter. Plantation density remained less than 1111 plants per hectare throughout the project area. Activity results 99m^2 soil disturbance per hectare. It concludes that total soil disturbance occurred due to project activity is less than 1%. . 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 to a medium-risk category.	On the basis of review of land ownership proof/17/, proof for waiver of carbon credits/05/, 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.

For Verification

Table: Risk Assessment during verification

S.No.	Risk that could lead tomaterial 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.	**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/i1-24/ 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 its 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.	**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 NPRR[/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[/i1-24/] 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	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

	spread- sheet calculation			line with the applied methodology. /B04/Thus the risk has been mitigated.
4.	**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 , Monitoring Plan/06, Implementation plan/06/, SOPs/06/ and interviews with the farmers and MRV personnels/i1-24/ 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

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[/i01-24/]

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 [APPENDIX 4: 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 CARs, 21 CLs and 01 FAR have 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. 00- FARs have been raised.

2.5.1 The VVB on every issue raised during the validation and Forward Action Requests

01 FAR has been raised during this joint validation & verification as mentioned below:

"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".

3 VALIDATION FINDINGS

3.1 Project Details

Based on the review of the VCS PDMR/01/and on-site inspection/i1-24/, VVB confirms that the project involves tree plantations on privately owned cropland with low productivity/fallow lands with low output land with low agricultural output, which is expected to increase the tree cover and thus leading to increase carbon sequestration within project area. 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	Afforestation, Reforestation and Revegetation (ARR)
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, on-site inspections and interviews, and the Verra Registry web source, VVB confirms that the project start date is 01 July 2019, 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 27 May 2025, 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 20 July 2022, and is required to be validated by 29 June 2027, 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 v02.0 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 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. • 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: • 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) 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. 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 cropland.

	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.**	Based on the review of the Forest/Non-Forest Analysis Report/03/ and on-site interviews /I01–24/, the VVB confirms that no land clearing or conversion has occurred under the first (PAI). The project area comprises of cropland with low productivity/fallow lands with low output where forestry tree species have been planted following an agroforestry design. The baseline trees were not harvested and will be monitored throughout the project crediting period.
	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/I01-24/, review of VCS PD/01/ and supporting documents/04/ 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 multipurpose agroforestry species plantation on lands that were previously used for agriculture.
	4.	**Project Activity is requesting registration within eight years of the project start date**	Based on the review of the VCS PDMR/01/, and evidence of project start date the project activity start date is 1st July 2019. Therefore, VVB confirms that the project complies with VCS requirements, remaining eligible for validation until 30 July 2027, 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[/i01-24/], review of KML files [/03/], and signed agreements[/05/], 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 four Indian states Assam, Bihar, Karnataka and Andhra Pradesh. 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 PDMR[/01/], project management plan, SOPs and on-site inspection/ interviews[/i1-24/], VVB confirms that the project activity includes harvesting of four species i.e. Red Sander, Guava, Mahogany and Eucalyptus 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 multiple species planted between 2019 and 2025. 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 harvesting species (Red Sander, Guava, Mahogany and Eucalyptus), even though their planting years differ. VVB has reviewed Ex ante and Ex post sheets/02/ and confirms that the average annual emission reductions (ERs) from harvesting species, estimated at 4,075 tCO_2e, remain well below 20% of the total average annual ERs of the project, which are 24,194 tCO_2e. This indicates that harvesting activities, as planned, will not lead to biomass loss exceeding 20% at any stage of the crediting period.

		As per the VCS Program Definitions v4.5, the project does not meet the threshold for "harvesting activity," and therefore, the Long-Term Average (LTA) accounting requirement is not applicable in this case and hence not accounted also.
	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[/03/], forest and non-forest analysis report[/03/], 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 cropland.
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 the same.	

	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/], "*A project to which additional instances of the project activity, which meet pre-established eligibility criteria, may be added subsequent to project validation*" Based on the review of VCS PDMR[/01/,] KML files[/03/], farmer agreements[/05/] and on-site inspection/interviews[/i1-24/] VVB confirms that the project is designed as a grouped project, including multiple instances, with the geographical boundary covers four states in India i.e. Assam, Bihar, Andhra Pradesh, and Karnataka with a planned scaling up to 10,000 hectares. Additionally, VVB confirms that the proposed first Project Activity Instance (PAI) is being implemented in the states of Assam, Bihar Karnataka and Andhra Pradesh with area of 1948.41 ha[/03/]. VVB further confirms that the PP has appropriately demonstrated the grouped project design and the eligibility criteria for including future instances in Section 1.5 of the VCS PDMR[/01/]. VVB has also assessed the grouped project criteria in accordance with the VCS Standard v4.7 as follows:

Project Description for Grouped Projects (Section 3.6.22 of VCS Standrad v4.7)		
Sl no	**Eligibility criteria**	**VVB Assessment**
1.	A delineation of the geographic area(s) within which all project activity instances shall occur.	Based on the review of the VCS PDMR[/01/] and KML files[/03/], VVB confirms that the geographical boundary of the grouped project has been clearly delineated across the states of Assam, Bihar, Andhra Pradesh and Karnataka in India. This

			delineation establishes the eligibility criteria for the inclusion of future PAI's under the grouped project activity. For all future PAI's implemented within this geographical area, the baseline scenario and the additionality justification shall remain the same as, 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[/i1-24/], VVB confirms that the project land parcels included in the project future instances must meet the following baseline criteria: ✓ No native forests cleared or converted in the past 10 years from the project instances start date. ✓ Areas must not have wetlands. ✓ Less than 10% soil disturbance for project area with organic soil. PP has established appropriate SOPs[/06/] to ensure that all conditions outlined in the applied

			methodology are met prior to the inclusion of any activity in the grouped project.
	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 section 3.5 of the VCS PDMR/01/, 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, 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 inclusion of new project activity instances at subsequent verification events.	Based on the review of VCS PDMR/01/, VVB 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 cropland with low

			productivity/fallow lands. ✓ Initial and future PAIs shall be located within the defined geographical boundary of the states of Assam, Bihar, Andhra Pradesh and Karnataka in India. ✓ Future PAIs shall be of similar size and land tenure to the initial instances and shall be implemented exclusively on lands privately owned by small landholders. ✓ Future PAIs shall not involve land that has been cleared of native ecosystems within the ten (10) years prior to the start date of each project activity instance. ✓ All privately owned lands included under future PAIs shall have clear ownership, undisputed possession and clearly identifiable boundaries, and shall be distinct

			from government-declared 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, and Agronomist 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)		
	Sl no	**Eligibility Criteria**	**VVB Assessment**
	1.	Meet the applicability conditions set out in the methodology applied to the project.	Based on the review of VCS PDMR/01/, VVB confirms that 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 v02.0. Furthermore, 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 [/B02/].
		Use the technologies or measures specified in the project description	Based on the review of PDMR and project the management plan[/04/06/] and SOPs[/06/] ensure that the technologies or measures applied in future instances will fall under the ARR category, consistent with those described in Section 1.12 of the PDMR[/01/] and aligned with the approach taken in the first Project Activity Instance (PAI).
		Apply the technologies or measures in the same manner as specified in the project description	Based on the review of PDMR[/01/], VVB confirms that future Project Activity Instances (PAIs) will follow the same technologies and implementation methods as described in the approved project design. The approach remains consistent with the ARR category under the applied methodology and VCS Standard v4.7, ensuring methodological integrity for future PAIs.

		Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	VVB based on the review of the PDMR/01/ confirms that the future project Instances will have baseline scenario demonstration as per the CDM AR-Tool 02 requirements. The same was assessed by the VVB in section 3.4.4 of this report.
		Have characteristics with respect to additionality that are consistent with the initial phases for the specified project activity and geographic area.	VVB based on the review of the PDMR/01/ confirms that the future project Instances will have additionality demonstration as per the AR tool-02 requirements. The same was assessed by the VVB in section 3.4.5 of this report.
		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 PDMR/01/, on-site inspection/interviews/i01-24/ and VCS Standard v4.7, VVB confirms that the PP has clearly defined eligibility criteria for including new Project Activity Instances (PAIs). All future PAIs will apply the same baseline scenario and additionality rationale as the initial PAI to ensure consistency across the grouped project. Geographic boundaries are delineated using geodetic polygons

			as per Section 3.6.10 of the VCS Standard v4.7. The approach complies with Sections 3.6.16(2) and (3) and ensures uniform, conservative, and methodologically sound inclusion of future PAIs within the project boundary.
	Inclusion of New Project Activity Instances (Section 3.6.17 VCS standard 4.7).		
	Sl 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/i1-24/ VVB confirms that the confirms that the new project activity instances will be in designated geographical areas Karnataka, Andhra Pradesh, Bihar and Assam states of India.
		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/i1-24/, VVB confirms that land parcels in order to be included under the Project will follow the following requirements: • The land must be cropland with low productivity/fallow lands. • Will be in the geographical boundary of

			Assam, Bihar, Andhra Pradesh and Karnataka states of India. • In case of Privately owned land, PP will make sure to have clear possession and accessible boundaries, distinct from government-declared protected areas.
		Be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate conformance with the applicable set of eligibility criteria and enable evidence gathering by the validation/verification body.	Based on the review of VCS PDMR[/01/] and onsite interviews[/i1-24/], VVB confirms that all the relevant details related to the project activity will demonstrate conformance with the applicable set of eligibility criteria.
		Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of each project activity instance.	Based on the review of VCS PDMR[/01/] and onsite interviews[/i1-24/], VVB confirms that each new project activity instance will have evidence of project ownership held 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[/i1-24/] 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 July 2019.
		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 VCS PDMR[/01/] and onsite interviews[/i1-24/] with PP, VVB confirms that the new project activity instances added will be eligible for crediting from the later start date of the project activity instance or the start of the activity Moreover each land parcel to be included in the new Project Activity instance will be eligible for crediting from the start date of respective Project Activity instance till the end of the project 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. This requirement is guaranteed through a specific legal declaration[/11/] by the land

			parcel owners/farmers like this PAI.
		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/i1-24/ with PP, new Project Activity instance will adhere to the requirements outlined in the AR ACM0003 Methodology.
		Addition of a new project proponent to the project	Based on the review of VCS PDMR/01/ and onsite interviews/i1-24/ with PP, VVB confirms that the procedure for adding new Project Proponents is clearly defined and aligns with VCS Standard v4.7 and the VCS Registration and Issuance Process. Any new Project Proponent will be included within two years of the project activity start date, or within five years for AFOLU activities. The established process ensures consistency, transparency, and compliance with VCS requirements.

Furthermore, according to VCS PD/01/, for inclusion of new project activity instances, the project follows the guidance as per section 3.6.16 and 3.6.17 of the VCS Standard version 4.7/B01/. Grouped projects provide for the inclusion of new project activity instances subsequent to the initial validation of the project. The new activity instances will occur within the designated geographical locations and comply with the complete set of eligibility criteria defined in

	the table above. All new instances will be included in the monitoring report with sufficient technical, financial, geographic, and other relevant information to demonstrate conformance with the applicable set of eligibility criteria and be included in an updated project location information as set out in section 3.11. The total planned area for the grouped project is 10,000 hectares, with the first Project Activity Instance (PAI) covering 1948.41 hectares. VVB after reviewing the VCS PDMR[/01/] and justification for eligibility criteria of grouped projects provided by PP confirms that the inclusion criteria are adequate and in accordance with VCS Program Rules[/B01-B03/].
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 and implemtation partner which are transferred through the agreements[/05/]. Furthermore, VVB during onsite inspection/ interviews[/i1-24/] have reviewed and cross verified all the agreements[/05/] against the respective state government website[/B05/]. The detailed description of their assessment of the different agreements between different parties as follow: **1. Agreement Between Project proponent and Project implementer** Service agreement was cross checked between PP and project implementers. It is clearly defined that Infinite Environmental Solution Limited is a PP, while HLTEC, MFI and WIPES are implementation partners. Furthermore, as per the agreement project start from since 2019 for crediting period of 30 year with longevity of 40 year including all renewables. **2. Agreement Between farmer and project Implementer** As per the carbon credit agreement between farmer and project implementer, project crediting period is 30 year and carbon stock will main for next 10 year that means project longevity is 40 year (as per the clause.3 of the agreements). Moreover, plantation carried out to farmer land belongs to farmer and farmer have full ownership for tree and tree-based product. VVB based on the review of both the agreements between the PP and IP, IP and farmers, confirms that the agreements are clear on the ownership rights, transfer rights of carbon credits, project longevity of

	40 years, and clear, fair benefit sharing among the entities involved, and the same found in line with the VCS standard sections 3.7.1, 3.18.1 and 3.19.22 requirements. **VVB, based on the service agreements, carbon credit agreements and onsite inspections it has been confirmed that:** 1. **Legal ownership:** The Project PP holds legal ownership rights over the project area for the entire duration of the project (i.e., 40 years). The project is implemented on privately owned land, with 2,508 farmers participating, each holding clear and undisputed legal ownership of their land. The PP has the right to validate, issue, and trade carbon credits. The earnings from the sale of carbon credits will be allocated to the farmers in accordance with the terms specified in the contractual agreements. This arrangement confirms compliance with Section 3.7.1(6) of the VCS Standard (v4.7), which requires an enforceable and irrevocable agreement between the project proponent and the holder of the statutory, property, or contractual rights to the land, vegetation, or management processes that generate GHG emission reductions or carbon dioxide removals. This agreement ensures that the project ownership rests with the project proponent. 2. **Land ownership:** The land ownership certificates for the beneficiaries include the official registration details allotted by the respective state government. These documents being considered as the commercially sensitive documents and has been shared to the VVB during the onsite visit, same were verified for AP MeeBhoomi AP (మీ భూమి) - 1B, Adangal at meebhoomi.ap.gov.in, for Karnataka https://bhoomionlinekarnataka.in/, for Assam Assam Bhulekh: View Assam Land Record ILRMS Assam Housing and for Bihar Online Mutation. The soft copies of these certificates are maintained by the PP and have been cross verified by the VVB. As a result, 100% of the project area is under the control of the PP, with clear and verified land ownership documentation, in line with the VCS standard sections 3.7.1, 3.18.1 and 3.19.22 requirements. 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 and these are then transferred to PP through service agreements with the implementation partners[/05/]. VVB verified the service agreements between the PP and implementation partners (MFI, HLTEC, and WIPES Foundation) and the carbon credit agreements between farmers and project implementers[/06/]. These agreements specify a 30-year crediting period with a 40-year project longevity, confirming long-term commitment to maintaining the plantations. Clauses reviewed by the VVB confirm that farmers retain full ownership of their land and tree-based produce, while the PP retains exclusive rights to validate, issue, and trade carbon credits. Earnings from carbon sales are to be distributed to farmers as per the contractual terms. VVB based on the review of both the agreements between the PP and IP, IP and farmers, confirms that the agreements are clear on the ownership rights, transfer rights of carbon credits, project longevity of 40 years, and clear, fair benefit sharing among the entities involved, and the same found in line with the VCS standard sections 3.7.1, 3.18.1 and 3.19.22 requirements. On the basis of review of the agreements[/05/] and respective state government websites[/25/],VVB confirms that 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	According to the Section 3.8 of VCS Standard v4.7,

	"The project start date of an AFOLU project is the date on which activities that led 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 VCS PDMR[/01/] and the evidence submitted-nursery sapling bills[/10/] the project start date is confirmed as 01st July 2019 on which first plantation activity was started on ground, which is the activity that led to the generation of GHG removals and in compliance with section 3.8 of VCS standard v4.7[/B01/]. The nursery bills dated 28th June 2019, and 30th June 2019 substantiate the procurement of saplings immediately before planting, consistent with the project implementation plan. On-site inspection/interviews[/i1-24/] further confirmed that planting start on 01st July 2019. Therefore, VVB concludes that the project start date has been appropriately identified, supported by verifiable documentation, and is in compliance with Section 3.8 of the VCS Standard v4.7.
Project crediting period	According to section 3.9.3 of VCS Standard v 4.7[/B02/]: "*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*." VVB confirms that the crediting period for the project is 30 years from 01 July 2019 to 30 June 2049 which is appropriate and valid in compliance with requirements set out in section 3.9.3 of the VCS Standard v4.7[/B01/].
Project scale	According to section 3.10.1 of VCS Standard v4.7[/B01/], "*Project size categorizations are as follows:* *1) Projects: Less than or equal to 300,000 tonnes of CO_2e per year.* *2) Large projects: Greater than 300,000 tonnes of CO_2e*

	per year." 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 24,194 tCO_2e. 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[/B01/].
Likelihood of achieving estimated GHG emission reduction or removals	VVB confirms that the livelihood 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 24,194 tCO2e per year with total of 927,749 tCO2e for the entire crediting period. Furthermore, PAI achieved GHG removals during the current monitoring period amounted to 85,456 tCO2e.
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/], land titles[/05/], nursery bills[/10/], sapling distribution records [/13/] and training records[/B03/]. 2. On-site inspection and interviews with the stakeholders[/i1-24/]. VVB confirms that the 1st PAI is being developed as an ARR project in which multiple tree species has been planted on farmer owned lands which has previously held as cropland with low productivity/fallow lands in Karnataka & Andhra Pradesh and cropland with low productivity in Bihar & Assam which has also been confirmed by VVB's own independent GIS assessment also. For the first PAI 2156 farmers with area of 1948.41 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 four species Red Sander, Guava and Mahogany in 15 years and Eucalyptus in 6 years. 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/i1-24/.
Implementation schedule of the project activity or activities	The start date of project activity is 01st July 2019, 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/i1-24/, VVB confirms that the grouped project has started the implementation of the 1st PAI of 1948.41 ha within Assam, Bihar, Karnataka and Andhra Pradesh, India during the period of 2019 to 2024 and as a grouped project aims to scale up to 10,000 ha of area within the these four states of 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 cropland with low productivity/fallow lands six districts of Karnataka (Dharwad, Gadag, Hangal, Haveri, Uttara Kannada, Shivamogga), eight districts of Andhra Pradesh (Anantapur, Chittoor, GD Nellore, Krishna, Prakasam, Sri Sathya Sai, Tirupathi and West Godavari), 2 districts of Assam (Karbi Anglong and Lakhimpur), 2 districts of Bihar (Jamui and Banka). VVB during the on-site inspection/interviews, confirms that the total area under the first project instance is 1948.41 hectares.: VVB confirms that PP has submitted the KML files/03/ 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 [/i01-24/]. 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[/B01/].
Conditions prior to project initiation	VVB has reviewed section 1.14 of the PDMR[/01/], along with supporting documentation including LULC maps[/03/], satellite imagery, and tabulated ecological and climatic data. Based on this review and third-party literature verification[/23/24/], VVB confirms that the project lands were primarily cropland with low productivity/fallow lands prior to project initiation. Vegetation ecosystem data, climate profiles, and soil classifications were found to be consistent with scientific literature and national/state-level ecological datasets[/23/]. The reported temperature and rainfall ranges across the four participating states - Assam, Bihar, Andhra Pradesh, and Karnataka - align with subtropical to tropical monsoon regimes and justify species suitability and stratification used in the ARR models. **Karnataka:** Based on the review of PDMR[/01/], along with supporting documentation including LULC maps[/03/], satellite imagery, tabulated ecological and climatic data and supporting literature[/23/24/], VVB confirms that prior to project initiation, the lands in Karnataka comprised croplands with low productivity or fallow areas owned by smallholder farmers. The region features diverse vegetation, including tropical evergreen, semi-evergreen, moist and dry deciduous, and thorny scrub forests. The ecosystem is characterized by tropical monsoon conditions, with an average annual temperature of 25–35°C and rainfall ranging from 2,000 to 3,200 mm. These conditions support seasonal variation but limit consistent agricultural productivity, justifying the project's intervention through agroforestry.

	Andhra Pradesh: Based on the review of PDMR/01/, along with supporting documentation including LULC maps/03/, satellite imagery, tabulated ecological and climatic data and supporting literature/23/24/, VVB confirms that before project initiation, lands in Andhra Pradesh were low-productive croplands and fallow areas. The state's vegetation includes southern moist mixed deciduous and dry deciduous forest types. The ecosystem is generally dry, influenced by both southwest and northeast monsoons, with temperatures ranging from 8°C to 50°C and rainfall between 500–1,300 mm. These harsh climatic conditions, coupled with soil degradation, restricted agricultural output, support the need for reforestation and sustainable land restoration under the project. **Bihar:** Based on the review of PDMR/01/, along with supporting documentation including LULC maps/03/, satellite imagery, tabulated ecological and climatic data and supporting literature/23/24/, VVB confirms that pre-project conditions in Bihar consisted mainly of croplands with low productivity. The region supports tropical moist and dry deciduous vegetation types. The ecosystem is humid subtropical, with average temperatures between 20–28°C and annual rainfall of 1,000–2,000 mm. Despite moderate rainfall, erratic weather patterns and soil erosion contributed to poor land productivity, validating the project's focus on agroforestry-based rehabilitation. **Assam:** Based on the review of PDMR/01/, along with supporting documentation including LULC maps/03/, satellite imagery, tabulated ecological and climatic data and supporting literature/23/24/, VVB confirms that prior to project initiation, lands in Assam were also low-productive croplands. The state exhibits rich biodiversity, dominated by tropical evergreen, semi-evergreen, and deciduous forests. The subtropical ecosystem experiences high humidity, with temperatures ranging from 5–32°C and rainfall between 1,500–3,800 mm. Despite favorable climatic conditions, fragmented landholdings and recurrent flooding constrained agricultural returns, reinforcing the project's rationale for adopting sustainable agroforestry interventions.

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The hydrological, pedological, and topographical details outlined in the PDMR/01/ were also found to be credible/23/ and conform to regional environmental characteristics. These parameters were used to stratify planting models and inform risk assessment (e.g., fire, erosion, moisture availability).
VVB concludes that the conditions prior to project initiation are appropriately described and substantiated, and they support the project's eligibility under the applied ARR methodology (AR-ACM0003 v2.0).
</td></tr>
<tr><td>Project compliance with applicable laws, statutes and other regulatory frameworks</td><td>
Based on the review of the VCS PDMR/01/, and review of the laws and regulations/24/ host country knowledge and through own research, VVB confirms that the project complies with following national, and state laws and acts/24/.
Furthermore, VVB confirms that the proposed VCS project shall not lead to violation of any applicable law even if the laws is not enforced.
<table>
<tr><th>Law & Act</th><th>VVB assessment</th></tr>
<tr><td>Indian Forest Act 1927</td><td>The Act regulates forest produce, transit, and activities in reserved/protected forests. Project activities are carried out on legally owned private lands, not classified under any reserved/protected forest categories. No unauthorized felling or transit occurs. Thus, the project is compliant.</td></tr>
<tr><td>National Forest Policy 1988</td><td>The project enhances tree cover on degraded land, supports rural livelihoods, and ensures community participation — all goals under the policy. It is fully compliant and aligned.</td></tr>
<tr><td>Forest Conservation Act 1980</td><td>The Act restricts forest land diversion for non-forest use. The project is implemented entirely on private, non-</td></tr>
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		forest lands, with no requirement for forest clearance. Hence, it is **compliant** with FCA 1980.
	Forest Right Act 2006	The project does not interfere with any community forest rights. Land titles are privately held, and no encroachment or displacement of traditional communities has occurred. Hence, **compliant** with FRA provisions.
	Assam Bamboo & Rattan Policy, 2019	Based on the review of VCS PDMR[/01/], relevant laws/24/, Monitoring Plan[/06/], and SOP[/06/], and onsite inspections[/i1-24/], VVB confirms: The project promotes the cultivation of multipurpose tree species on cropland with low productivity/fallow lands, supporting ecological restoration and sustainable livelihood objectives outlined in the policy. The species selection and planting methodology reflect improved productivity and sustainable agroforestry practices, aligning with the policy's emphasis on scientific management. Farmer interviews/[i1-24]/ and signed agreements[/05/] confirm community participation and support, consistent with the policy's goal to create employment and livelihood security. No illegal harvesting or unregulated exploitation of bamboo or cane was observed or reported. VVB therefore confirms that the project activities align with and do not violate any provisions of the Assam Bamboo & Rattan Policy, 2019.

	Assam Forest Policy, 2004	Based on review of VCS PDMR/01/, GIS assessment/03/, relevant laws/24/ Monitoring Plan/06/, and farmer interviews/i01-24/, VVB confirms: The project supports environmental stability by enhancing tree cover through agroforestry on cropland with low productivity/fallow private lands, in accordance with the policy objectives. Activities under the project are implemented in non-forest areas, with no encroachment or adverse impact on existing forest ecosystems. Women's participation and community involvement were observed and recorded during onsite evaluations/i1-24/, supporting policy goals on grassroots engagement. Monitoring and maintenance of the plantations are being carried out through community-based approaches as per SOPs/06/. Therefore, the VVB confirms that the project is in full compliance with the Assam Forest Policy, 2004.
	Karbi Anglong Autonomous Council, 1951	The Karbi Anglong Autonomous Council (KAAC), established under the Sixth Schedule of the Indian Constitution, governs land, forests, and local administrative matters within the Karbi Anglong district of Assam. The VVB has reviewed the project's implementation in this region and confirms that all project activities are confined to privately owned lands with clear title and without any customary or disputed rights under the jurisdiction of the KAAC.

		No clearance under the KAAC rules was required as the project does not involve diversion of community or forest land and does not infringe on the powers granted to the autonomous council. Further, there has been no violation of local regulations pertaining to land use, forest produce, or tribal land rights. Consultations and due diligence confirm that the project activity respects local autonomy and governance structures. Accordingly, the VVB concludes that the project activity is **compliant with the provisions of the Karbi Anglong Autonomous Council Act, 1951.**
	Bihar Kashth & Other Forest Produce Transit Regulations Rules, 1973	Based on VCS PDMR[/01/], relevant laws[/24/], land verification records[/05/], SOP[/06/], and discussions with local forestry officials during site inspections[/i1-24/,] VVB confirms: The project is implemented on legally verified agricultural lands and is fully coordinated with the local Forest Department. No unauthorized transportation or commercial trade of timber or forest produce occurs under the project. Fire prevention, biodiversity conservation, and land boundary demarcation measures were found to be implemented as per state guidelines. Plantation data and monitoring records are maintained and available for audit, ensuring compliance with the Rules. VVB confirms that the project

		adheres to the Bihar Kashth & Other Forest Produce Transit Regulations Rules, 1973.
	Andhra Pradesh Forest Act, 1967[/24/]	The Andhra Pradesh Forest Act, 1967 empowers the state to regulate forest management, prevent illegal felling, and control transit of forest produce. The VVB has reviewed the legal applicability of this Act to the project activity and confirms that the project does not fall within any notified forest area under the Act. All plantations are established on privately owned, non-forest land, and no forest clearance or land conversion has taken place. The project does not involve the extraction or transport of restricted timber species, including Red Sanders (Pterocarpus santalinus), which is a protected species under state and central law. No activities requiring transit permits or cutting permissions have been undertaken. In addition, there is no violation of provisions under the Andhra Pradesh Forest Act (Amendment) 2016, which strengthened enforcement against encroachment and illegal felling. The project design and implementation have adhered to all applicable norms. Therefore, the VVB concludes that the project is **fully compliant with the Andhra Pradesh Forest Act, 1967 and its subsequent amendments**.

	Andhra Pradesh Forest (Amendment) Act,[/24/]	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.
	Karnataka Forest Act, 1963	Based on VCS PDMR[/01/], relevant laws[/24/], land verification records[/05/] , SOP[/06/] , and discussions with local forestry officials during site inspections[/i1-24/,] VVB confirms that the farmlands with no conversion of declared forest land or reserve forest under the Act. There is no evidence of unauthorized felling, poaching, or forest encroachment, which was verified through GIS data[/03/.]The project indirectly contributes to conservation through afforestation efforts on cropland with low productivity/fallow lands and promotes sustainable resource use. VVB therefore confirms compliance with the Karnataka Forest Act, 1963.
	Karnataka Preservation of	This law subjects to restricted felling under the Act. No unauthorized tree felling has occurred; farmers planting

	Trees Act, 1976[/24/]	under the project have not engaged in any illegal cutting, as confirmed by site inspections[/i1-24/]. Community engagement is evident in project operations, fulfilling the Act's emphasis on awareness and conservation. Therefore, VVB concludes that the project complies with the Karnataka Preservation of Trees Act, 1976.
	The Mysore Forest Act, 1900[/24/]	Based on VCS PDMR[/01/,] GIS shapefiles[/03/], relevant laws[/24/], and land ownership documents[/05/], VVB confirms: The project does not involve any activities on land notified as reserved or protected forests. No grazing, unauthorized extraction, or timber collection was observed or reported during VVB site assessments. Forest officers were consulted and confirmed that no applicable provisions under the Mysore Forest Act were triggered. Hence, VVB confirms that the project does not contravene the Mysore Forest Act, 1900.
	Forest Rules, 1969[/24/]	Based on review of PDMR[/01/], KML shapefiles[/03/], SOP[/06/], relevant laws[/24/], and land agreements[/05/], VVB confirms: The project takes place on agricultural lands and not in reserved or village forests; hence, no conflict with management rules governing such areas arises. No illegal transport, unauthorized felling, or violations concerning seigniorage or permits were identified during monitoring visits[/i1-24/]. Fire safety measures and plantation monitoring conform to the Rules as outlined in

		the project's SOP[/06/]. VVB concludes the project is compliant with Forest Rules, 1969.
	Karnataka Preservation of Trees Rules, 1977[/24/]	Tree Officers was triggered, as planting took place on exempt agricultural lands with suitable species. VVB therefore confirms that the project does not violate the Karnataka Preservation of Trees Rules, 1977 and is fully compliant with the law.
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[/B04/], VVB confirms that the project has not been registered under any other GHG programs and is not seeking registration also. **Rejection by other GHG programs** Based on the review of VCS PDMR[/01/] and through own research in registries[/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[/01/], declaration[/11/], and searching through the registries[/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[/01/], and declaration[/11/] confirms that there is no other form of environmental credit 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	

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<tr><td></td><td>kind of environmental crediting for GHG emission removals.</td></tr>
<tr><td>Supply chain (Scope 3) emissions double claiming</td><td>Based on the review of the VCS Joint PDMR[/01/] and through on-site inspection/interviews[/i1-22/], 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.</td></tr>
<tr><td>Sustainable development contributions</td><td>
<table>
<tr><th>SDG No.</th><th>SDG indicator</th><th>VVB assessment</th></tr>
<tr><td>1.No Poverty</td><td>1.1.1, Proportion of population below the international poverty line by sex, age, employment status and geographic location (urban/rural)</td><td>Based on the review of employment slips[/14/17/], onsite interviews with the farmers, farmers agreements[/11/] and checking land records[/19/] VVB confirms that the under the project, around 10,000 people employment has been generated at a wage of US$ 1.50 per day during the current monitoring period. Throughout the project lifetime it is expected to generate around the total of over 100,000 seasonal employment.</td></tr>
<tr><td>8. Decent Work Economic Growth</td><td>8.3,1, Proportion of informal employment in total employment, by sector and sex</td><td>Based on stakeholder interviews, training records[/07/19/], and field implementation reports[/14/13/], the project has generated employment for local</td></tr>
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			community members through nursery operations, plantation activities, and field monitoring. These jobs are primarily informal in nature but provide structured and income-generating work opportunities to individuals who were previously underemployed or engaged in subsistence farming. In addition, the project conducted SDG awareness and climate change sensitization programs reached over 1,000 individuals, including workers, local youth, and farmer groups. These trainings have helped improve understanding of sustainable land use and labor practices, thereby contributing indirectly to the quality of informal work. Throughout, the project lifetime it has been expected to contribute SDG training and Climate Change Awareness programs to around 10000 individuals. The VVB concludes that the project demonstrates a positive contribution to SDG 8.3.1 by increasing access to informal but

			productive employment in rural landscapes, in line with the indicator's intent.
	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/03/ and further onsite inspections/i1-24/ VVB confirms that the project involves plantations of multipurpose tree species on cropland with low productivity/fallow lands which will also lead to carbon sequestration by the planted number to trees, during current monitoring project has been removed the 85,456 tCO_2e and throughout the project life time it has been expected to sequester 2,224,829 tCO_2e.
	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/i1-24/, 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 during the current monitoring

			period improved forest cover over 1948.41 ha of project area through plantations and as part of grouped area it has been estimated to improve vegetation cover over 10,000 ha of areas.
Additional information relevant to the project	**Leakage management for AFOLU projects** VVB based on the onsite inspections[/i1-24/], 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. **Commercially sensitive information**: Based on the review of supporting documents[/1-25/] provided by PP, VCS PDMR[/01/] and through on-site inspection[/i1-24/] VVB confirms the following commercially sensitive information has been excluded from the public version of the project description as per section 3.5.2 to 3.5.4 of VCS standard. However, PP has provided for the audit team for the verification and documents found to be valid as per the verification: • Land ownership documents[/05/17/] • Agreements between the PP and farmer community[/05/] • Agreements between the Project developer and PP[/12/] • Benefit sharing mechanism[/05/12/].		

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 tom 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[/i1-24/] 3. Review of LSC documents and meeting records[/07/] 4. On-going Grievance Mechanism[/08/] Based on the assessment of above 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[/07/], 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[/01/], onsite inspection/interviews[/i1-24/] and review of land title records[/05/] VVB confirms that all project activities are being conducted on privately owned lands and 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. The landowners hold clear and uncontested titles to the land, and there are no legal or customary access rights that could interfere with project implementation and not altered with project implementation. Furthermore the ownership of land of farmers participating in the project were verified by VVB during the onsite inspection[/i1-24/] 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. Additionally, based onsite inspection/interviews[/i1-24/] VVB, confirms that PP during the onboarding process it has been ensured that the project area is free from any legal or customary disputes only are included, thus no conflicting claims or rights from external parties were identified within the project area. 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[/B01/].
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[/i1-24/] 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[/01/], contractual agreements[/05/] and onsite inspections[/i01-24/], 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/i01-24/ confirm that the stakeholders belong to the state of Assam, Bihar, Andhra Pradesh and Karnataka. 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/i01-24/, confirms that the project resources are located within the project area/03/ i.e., Assam, Bihar, Andhra Pradesh and Karnataka, 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/

	During stakeholder consultation following topics were discussed: ✓ Introduction of the project ✓ Project details including eligibility and applicability criteria, benefits and Permanence. ✓ About VCS and CDM mechanism ✓ Benefits from the project ✓ Grievance mechanism for stakeholders ✓ Carbon stocks assessment methods ✓ Monitoring process for sustainable development ✓ Closure of the meeting via suggestions taken up from farmers and filling up of the feedback forms ✓ Question and Answer session Meeting invitations were distributed through phone calls, invitation letters and notice display at Gram Sabha's office in Hindi and English language. In addition to that the very first stakeholder consultations were conducted on 23rd May 2019 at Gram Panchyat Hall, Chittoor. The evidence for the same has also been provided which was reviewed and found appropriate by the VVB[/07/]. More LSCs were also conducted, and feedback forms were collected by PP during the project implementation phases as conveyed to VVB during stakeholders' interviews[/i1-24/] and the evidence[/07/] for the same were also reviewed. In summary, VVB concludes that the Local Stakeholder Consultations conducted by PP aligned with the requirements set out in section 3.18 of the VCS standard and further supporting evidence are also reported in the PDMR.
Consultation outcome	Based on the onsite interviews[/i01-24/] with the farmers VVB concludes that the farmers were made aware of the project activity and carbon revenue. Furthermore, farmers have willingly signed the waivers[/05/] to participate in the project. According to the LSC feedback forms[/07/] farmers take it as an additional income and were interested to participate in the project. Therefore, it could be concluded that the consultation outcomes were positive and were properly documented. Furthermore, VVB confirms that PP has appropriately communicated the following aspects with local stakeholders:

	• All relevant laws and regulations pertain to workers' rights in the host country. • Aspects of project including its design, implementation, monitoring outcomes. • Regarding the potential risks, costs, and benefits associated with the project. • Validation and Verification processes and VVB Site visit • Benefit Mechanism and FPIC process. VVB observed that farmers were aware of the project and its registration in VERRA. PP provided capacity trainings, confirmed the locations of sample plots included in the project, and, based on the assessment, document review[/07/], and on-site inspection[/i01-24/], VVB confirms the following: ✓ PP has summarized stakeholder input received during the local stakeholder consultation meeting. ✓ Given the absence of negative comments from stakeholders, the project proponent is not required to consider all and any input. ✓ PP has effectively communicated project information to local stakeholders regarding design, implementation, risks, costs, and benefits. ✓ VVB has ascertained that the project complies with national laws, statutes and other regulatory frameworks. Based on above assessment, VVB affirms that PP has summarized consultation outcome in section 2.1.2 of the VCS PDMR in accordance with section 3.18.2 of the VCS Standard v4.7[/B01/].
Ongoing communication	Based on the review of the VCS PDMR [/01/] and onsite interviews[/i1-24/] with key stakeholders, the VVB confirms that MFI, WIPES Foundation, and HLTEC (Project Implementers), in collaboration with Infinite Environment Solutions Limited (Project Developer), have established a structured and effective communication process to engage stakeholders and address concerns arising from project activities. A local project office, appointed community volunteers, and multiple communication channels—including phone calls and in-person visits ensure that farmers remain informed and have easy access to project implementers. This ongoing engagement approach has fostered trust and collaboration between the implementing entities and the local

	community. 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 3.18.2&5 of VCS Standard 4.7[/B01/].
Stakeholder input	Based on the review of feedback forms[/07/], LSC MOMs[/07/] and onsite interviews[/i01-24/] 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.

3.3.1.3 Free, Prior, and Informed Consent

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Obtaining consent	Based on the review of VCS PDMR[/01/], farmer agreements[/05/]and onsite interviews[/i01-24/], 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. Based on the contractual agreement[/05/], VVB also outlines the terms and conditions regarding ownership and the revenue derived from carbon credit sales. VVB based on review of contractual agreement[/05/] and onsite interviews[/i01-24/] confirms that project does not impact local stakeholders' property rights. 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[/i01-24/], 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[/i01-24/] 2. Review of grievance logbooks[/08/] kept at Mangrove Foundation India (MFI), HLTEC and WIPES Foundation. Based on the review of the above documents, and onsite inspection/interviews[/i1-24/]. VVB confirms that regular communication has been maintained through phone calls. The grievances have been updated in the logbooks[/08/] with the dates and details of the farmers. The GRM is designed to ensure that all stakeholders particularly vulnerable and marginalized groups have accessible, confidential, and effective channels to express concerns and seek resolution. Multiple entry points for grievances are established, including phone calls, in-person meetings, and NGO intermediaries. The process includes timely acknowledgment (within 3–5 days), eligibility screening (within 7 days), referral to responsible parties, and documentation of resolution outcomes. In cases where mutual agreement is not reached, escalation to third-party mediators (e.g., environmental experts or agricultural consultants) is available, with further recourse to arbitration or national legal systems if necessary. The mechanism is structured to be transparent, culturally appropriate, and non-retaliatory. All complaints are logged and handled independently, with guarantees of confidentiality and fairness. Project staff and external experts are trained to facilitate the process, and awareness of the GRM is promoted during stakeholder consultations and community outreach. Based on review of procedures and implementation records[/08/], the VVB concludes that the project has established a robust, accessible, and rights-based grievance redress mechanism, aligned with best practices and the safeguards requirements under the applied standard.

	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	Based on-site inspection[/I01-24/] and on review of grievance mechanism[/08/] VVB, confirms that the farmers can express their grievances by utilizing the provided logbook, phone, email, directly contacting the local partner, or utilizing our dedicated communication app. PP has confirmed that all the queries/complaints will be addressed by local NGO representatives and data maintained at PPs head office. VVB has verified the following in order to check the compliance of grievance addressal mechanism in place with the VCS standard requirements 4.7. 1. Grievance Registers[/08/] 2. Interview with the field volunteers and farmers[/i1-24/] 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: Based on the review of grievance logbooks[/08/] and onsite interviews with project stakeholders, the VVB concludes that a functional and accessible Grievance Redress Mechanism (GRM) has been established by the Project Implementers—MFI, WIPES Foundation, and HLTEC—in collaboration with the Project Developer, Infinite Environment

			Solutions Limited. The GRM allows stakeholders, including vulnerable groups, to raise concerns via multiple channels such as phone calls and in-person meetings, aiming for prompt and effective resolution. The process includes clear steps: acknowledgment of receipt (typically within 3 to 5 days), eligibility evaluation to ensure relevance to the project, and appropriate assignment of responsibility within involved organizations. Closure of grievances is documented, with written confirmation from the complainant in high-risk cases. The VVB confirms that the GRM is designed to be inclusive, transparent, and responsive, and recommends that continuous efforts be made to ensure stakeholders are aware of the mechanism and how to access it.	
	2.	Any grievances that are not resolved by amicable negotiations shall be referred to mediation by a neutral third party.	During onsite interviews[/i01-24/], it was conveyed to VVB that in case any grievance 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	

	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[i01-24] 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. Thus, VVB confirms that the developed grievance mechanism is appropriate and in line with the VCS standard requirements. Therefore, the project is in line with section 3.18.4 requirements of the VCS standard 4.7.		

3.3.1.5 Public Comments

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

3.3.2 Risks to Local Stakeholders and the Environment

3.3.2.1 Management Experience

The VVB has assessed the management experience[07] and institutional capacity of the Project Proponent, Infinite Environmental Solutions Limited (IESL), and its on-ground implementation partners. IESL demonstrates significant expertise in the design, development, and governance of afforestation and reforestation projects, with a proven track record in applying carbon methodologies, ensuring compliance with international standards, and managing monitoring and reporting frameworks. The organization leads project coordination, carbon credit generation, and regulatory engagement. Implementation partners MFI, WIPES, and HLTEC bring strong regional presence and operational capability. MFI and WIPES oversee field-level implementation across Bihar, Karnataka, and Andhra Pradesh, handling farmer mobilization, plantation activities, and technical support. HLTEC leads project execution in Assam, focusing on nursery operations, site development, labor engagement, and community coordination. The combined management structure reflects an experienced and well-coordinated team with capacity to deliver large-scale agroforestry interventions, maintain monitoring systems, and ensure compliance with safeguard and benefit-sharing requirements. The VVB concludes that the Project Proponent and its partners possess the requisite technical and institutional experience to implement and sustain the project effectively,

3.3.2.2 Risk Assessment

Table below describe the risk assessment and outcome of the potential risks to stakeholders and the environment.

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[/i01-24/] 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[/i01-24/] 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 and 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, 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. VVB confirms that there, as per the report of New Labor Code for New India, Government of India[/24/], suitable working condition has been providing the safeguard to employer. PP follows the rule, regulations and law with freedom, safety and dignity of employer because it is Concern list of state government. Employees involved in the implementation and management of the project have respectable working conditions, equitable payment, and equal possibilities for growth and learning in an environment where people are free to voice their concerns and demand better terms. Furthermore, the governing policies[/09/] of the project prohibit discrimination and harassment on all grounds.
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. Thus, the project is in line with section 3.19.8 requirements of the VCS standard.
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 since project ensures follows above policies. Thus, the project is in line with section 3.19.9 requirements of the VCS standard.
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. No development activities have been undertaken that harm the environment or stakeholders. The project does not use synthetic fertilizers or plant protectors, thereby promoting a more natural approach to cultivation. Additionally, it does not generate hazardous waste or materials, supporting a safer and more sustainable environment. The same was observed during the audit team onsite inspections/I01-24/. Thus, the project is in line with section 3.19.10 requirements of the VCS standard and confirmed that appropriate mitigation measures are in place.

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 /i1-24/, 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/i1-24/. The same was confirmed by VVB during the

	onsite interviews/i1-24/. Therefore, the project is in line with section 3.19.11 requirements of the VCS standard.
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/i1-24/. Therefore, the project is in line with section 3.19.11 requirements of the VCS standard.
Equal pay for equal work	Based on onsite interviews/i1-24/ 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. Therefore, the project is in line with section 3.19.14 requirements of the VCS standard.
Gender equity in labor and work	VVB based on the onsite interviews/i1-24/ and review of SOPs/06/ and governing project policies/09/ confirms that PP maintains equal distribution of work and labor between all genders participating in the project which leads to enhancement of distribution of equal to all genders involved in the project. Therefore, the project is in line with section 3.19.13 requirements of the VCS standard.
Forced labor	VVB based on the review of SOPs/06/ and governing policy documents/09/ and onsite interviews/i1-24/ confirm that project prohibits forced labor. Therefore, the project is in line with section 3.19.15 requirements of the VCS standard.
Child labor	VVB based on the review of SOPs/06/ and governing policy documents/09/ and onsite interviews/i1-24/ confirm that project prohibits forced labor. Therefore, the project is in line with section 3.19.15 requirements of the VCS standard.
Human trafficking,	VVB based on the review of SOPs/06/ and governing policy documents/09/ and onsite interviews/i1-24/ confirms that project prohibits human trafficking and possess strict regulations against such matters. Therefore, the project is in line with section 3.19.15 requirements of the VCS standard.

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 [/i1-24/] 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/] as per section 3.19.11 to 3.19.18 requirements of the VCS standard.

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[/i1-24/] 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. Furthermore, the project prohibits

	discrimination, preserving and protecting cultural heritage consistent with IPs', LCs' and customary rights holders' practices or UNESCO Cultural Heritage conventions as per section 3.19.11 to 3.19.18 requirements of the VCS standard/B01/.

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** **No risk identified**	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 **No risk identified**	Based on the review of VCS PDMR/01/, Farmer's agreements/05/ and onsite interviews/i1-24/ 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. Therefore, VVB ascertains that the project in line with section 3.19 (property rights) of the VCS standard 4.7.

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 review of LSC evidence/07/, agreements/05/ and as per the onsite interviews/i1-24/ 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. VVB confirms that the stakeholder consultations are carried out to design the benefit sharing mechanism and PP ensured that the revenue from the sale of carbon credits will be distributed to beneficiary farmers under the project. Through the Free, Prior and Informed Consent (FPIC) process and ongoing stakeholder consultations, farmers were informed about their carbon rights and the

	potential benefits from carbon credit sales. And farmers actively participated in the decision-making process, ensuring their perspectives were incorporated into the final benefit-sharing structure. Furthermore, VVB based on the host country expertise and review of the relevant national & state laws or regulations (Acts and Rules by Department of Agriculture and Farmers Welfare| National Portal of India) assessed in the above section 3.1 of VVR, confirms that there no laws regulate benefit sharing agreements in carbon projects. As the project is implemented on land privately owned by the farmers, it does not conflict, not violate any existing national or state regulations, as the farmer participation in the project is completely.
Summary of the benefit sharing plan	VVB has reviewed the benefit-sharing mechanism[/05/] established for the project, based on signed agreements between the Project Proponent (Infinite Environmental Solutions Limited) and the implementation partners (MFI, WIPES Foundation, and HLTEC), as well as between the implementers and participating farmers. Carbon waiver's review[/05/] and on-site interviews[/i1-24/] confirm that benefit-sharing terms have been transparently communicated to farming communities during stakeholder consultations and group meetings. The agreements outline that benefits from carbon revenue will be shared directly with the farming community through the implementing partners, in accordance with roles and responsibilities defined in the contractual arrangements. The allocation of benefits to individual farmers is based on clear, objective criteria, including the extent of land enrolled and adherence to project implementation protocols such as land stewardship and monitoring compliance. The allocation of funds is based on the benefit sharing mechanism as per the signed agreements, the farmers will receive carbon credits based on plantation area, plantation year. These criteria have been consistently explained during engagement sessions and acknowledged by the farmers. Furthermore, the VVB notes that all implementing partners and farmer groups have agreed to safeguard sensitive information and project-related documents as per the confidentiality requirements of the project. Even though, PP has considered this benefit mechanism as commercially sensitive information, VVB has been provided with the supporting documentation[/05/12/] by PP, VVB verified the same and found to be valid and acceptable. In conclusion, the project has clear benefit sharing mechanism among the PP, implementation partners and farmer with the fair, transparent agreements in place mentioning clear percentages of

	benefit sharing, meeting the section 3.19.22-24 of the VCS standard requirements.
Approval and dissemination of benefit sharing plan	VVB based on the onsite- interviews[/i01-24/] and review of agreements[/12/05/] confirms that the agreements are shared with farming groups during community meetings, ensuring acceptance of all terms by the community. The interested farmers have voluntarily 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 in the bank account of the farmer once it will be accrued by the PP by sales of carbon credits. Note, that since this is the project's 1st joint validation and verification no carbon credit revenues are generated.

3.3.4 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
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, Bihar, Karnataka and Assam contributing to the resilience and sustainability of local ecosystems. In addition to this VVB has conducted the GIS analysis[/03/] to check if any conversion of native ecosystem has taken place and confirmed that there are no conversion of native ecosystems.. Thus, PP has appropriately identified no risk for the same and the project is in line with section 3.19.25 requirements of the VCS standard.
Soil degradation	Based on the review of the VCS PDMR[/01/], the PRA report[/09/], and onsite inspections[/i1-24/], VVB confirms that the project has been implemented

and soil erosion	with clear measures to prevent soil degradation and erosion. The PRA survey revealed that approximately 78% of respondents identified loss of tree and plant cover as the primary driver of soil erosion in the area, followed by thinning of organic topsoil and increased use of chemical fertilizers. The baseline assessment further showed that all respondents relied primarily on subsistence farming on marginal land, with declining productivity attributed largely to erosion. In response, the project design incorporates a variety of deep-rooting tree species selected for their ability to stabilize soil and enhance organic content, with minimal soil disturbance reported (<5%) during plantation. Field verification confirmed that the planted trees are effectively binding soil, reducing erosion risk, and improving ground cover. Additionally, the project promotes the use of farmyard manure over chemical fertilizers to support long-term soil fertility. Farmers interviewed during the site visit acknowledged these benefits, confirming that the initiative not only contributes to ecological restoration but also supports more resilient and productive land use. Hence, the project does not lead to land degradation but rather contributes to its reversal. Thus, PP has appropriately identified no risk for the same and the project is in line with section 3.19.25 requirements of the VCS standard.
Water consumption and stress	Based on the review of VCS PDMR[/01/] and onsite observations[/i1-24/], VVB confirms that the project effectively addresses water consumption and stress in arid and semi-arid regions characterized by low and unpredictable rainfall. To mitigate water scarcity, the project has adopted the use of drought-resistant species well-suited to local agroecological conditions. These species, once established require minimal water, thereby reducing dependency on natural water sources. Furthermore, their selection contributes to improved soil moisture retention and groundwater recharge. Through these sustainable planting practices, the project demonstrates a commitment to enhancing water balance and promoting long-term ecosystem resilience. Thus, PP has appropriately identified no risk for the same and the project is in line with section 3.19.25 requirements of the VCS standard.

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[/i1-24/] 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 onsite inspections[/i1-24/] 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.

3.3.4.2 Introduction of Species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
Persea bombycina	Based on the review of VCS PDMR/01/ and supporting ecological references ((PDF) Traditional Muga Silk (*Antheraea assamensis*) Rearing as a Means of Rural Livelihood and Conservation Efforts among the Indigenous Communities of Assam), the VVB confirms that the (*Persea bombycina*) is a native, perennial, evergreen species well-adapted to the ecological conditions of the project area in Assam. It holds high ecological significance as the primary host plant for the endemic *Antheraea assamensis* (Muga silkworm), which is unique to the region. This plant-insect association contributes to both biodiversity conservation and local livelihoods through the sustainable production of Muga silk. Thus, the use of this species is deemed to be acceptable.
Mangifera Indica	Based on the review of literature (https://pmc.ncbi.nlm.nih.gov/articles/PMC3249901/), VVB confirms that it is native India and the most important commercially grown fruit crop of the country, without any adverse effects. 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, Thus, the use of this species is deemed to be acceptable.
Psidium guajava	VVB confirms that although being it is non-native to India, Guava it has covered larger area, naturalized in the country and often be counted as one of the important fruit crops in India, without any adverse effects, (Based on the review of cited literature (Jamieson, S., Wallace, C. E., Das, N., Bhattacharyya, P., & Bishayee, A. (2022). Guava (Psidium guajava L.): a glorious

	plant with cancer preventive and therapeutic potential. *Critical reviews in food science and nutrition*, *63*(2), 192-223. and https://nhb.gov.in/report_files/guava/GUAVA.htm#:~:text=Guava%20(Psidium%20guajava)%20is%20one,after%20mango%2C%20banana%20and%20citrus. 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 with medicinal properties. Thus, the use of this species is deemed to be acceptable.
Dalbergia sissoo	Based on the review of PDMR and (https://www.academia.edu/download/66512427/Social_Acceptance_for_Ecological_Service20210422-967-vpe5jw.pdf), VVB confirms that Dalbergia sissoo is native to India, and it does not have any adverse effect on climate. Thus, the use of this species is deemed to be acceptable.
Tamarindus Indica	Based on the review of PDMR and plants of world online site and literature- https://www.asianagrihistory.org/pdf/articles/nc-shah-18-4.pdf , VVB confirms that the tamarind is not native to India; it is an exotic species originating from the Comoros and Madagascar. However, tamarind trees serve as a valuable local resource for medicinal use and are well-adapted to semi-arid regions of India and widely naturalized in climatic conditions. Their fallen leaves naturally enhance soil fertility by contributing organic matter, and the trees themselves promote local biodiversity by offering habitat and food for various bird and insect species. Although introduced, tamarind has proven to be a highly suitable species for social forestry, agroforestry systems, and the restoration of cropland with low productivity/fallow lands across India. Thus, the use of this species is deemed to be acceptable.
Eucalyptus Sp.	Based on the review of VCS PDMR[/01]/ and supporting literature including FAO and peer-reviewed scientific sources (https://www.cambridge.org/core/journals/international-review-of-social-history/article/el-dorado-of-forestry-the-eucalyptus-in-india-south-africa-and-thailand-18502000/28A6D54A8DA97960B912F2CDB666FFD2, https://www.indianjournals.com/ijor.aspx?target=ijor:ijbsm&volume=12&issue=1&article=004 , https://www.fao.org/4/ac777e/ac777e08.htm , https://www.researchgate.net/publication/349819449_Eucalyptus_Trees_Plantation_A_Review_on_Suitability_and_their_Beneficial_Role and Eucalyptus in India - R.M. Palanna) VVB confirms that Eucalyptus species, though non-native to India, have been widely adopted across various Indian agroecological zones for their adaptability and land-rehabilitative potential. These species are commonly planted along agricultural

	boundaries, degraded lands, and waterlogged soils due to their rapid growth and resilience. Scientific references reviewed (Cambridge University Press, Indian Journal of Biology, FAO) indicate that when properly managed, Eucalyptus plantations do not pose significant ecological threats. While the project documentation confirms the inclusion of Eucalyptus for its suitability in marginal soils, no evidence was found during field verification of uncontrolled spread or adverse ecological impact. Therefore, the VVB concludes that the inclusion of Eucalyptus, though non-native, does not pose an environmental threat under the current project implementation.
Syzygium cumini	The VVB confirms that *Syzygium cumini* is a native evergreen species to the Indian subcontinent and Southeast Asia researchgate.net+10en.wikipedia.org+10researchgate.net+10. Its inclusion in the project's species mix is ecologically appropriate and beneficial. *S. cumini* is recognized for its rich bioactive composition including polyphenolics, flavonoids, tannins, and anthocyanins which contribute antioxidant, anti-diabetic and anti-inflammatory properties. These features support biodiversity, local medicinal traditions, and potential nutritional benefits for communities. Thus, the use of this species is deemed to be acceptable.
Gmelina arborea	The VVB confirms that *Gmelina arborea* is a **native species to India**, well-adapted to a range of agro-ecological zones, including evergreen and dry deciduous forests, from sea level to 1,200 m elevation en.wikipedia.org+11sciencepublishinggroup.com+11cabidigitallibrary.org+11sciencedirect.com. It has been recognized as a **fast-growing, multipurpose tree**, widely used in agroforestry and plantation systems for timber, fuelwood, and carbon sequestration under short rotation cycles biochemjournal.com. Its prevalence in Indian farm forests supports both ecological restoration and livelihood objectives. Thus, the use of this species is deemed to be acceptable.
Tectona grandis	VVB confirms that *Tectona grandis* is a **native species** to India, found naturally across South and Southeast Asia, including mixed monsoon forests in India researchgate.net+11en.wikipedia.org+11en.wikipedia.org+11. It is a highly valued hardwood, widely used in plantations for its

	durability and suitability for furniture, construction, and agroforestry system. Thus, the use of this species is deemed to be acceptable.
Anacardium occidentale	*Anacardium occidentale* is a **non-native species to India**, originally native to northeastern Brazil. It was introduced to India by Portuguese traders in the 16th century and has since become widely cultivated and naturalized across tropical regions of the country, particularly along coastal and plateau areas (https://dccd.gov.in/crop-history-cashew). The species is highly adaptable to dry and lateritic soils and is commonly used in agroforestry systems due to its drought tolerance and soil conservation properties without any adverse effects. Scientific studies confirm its resilience under Indian conditions and its relevance in carbon sequestration and degraded land rehabilitation programs (https://link.springer.com/content/pdf/10.1007/s43621-024-00558-y.pdf; https://www.sciencedirect.com/science/article/abs/pii/S0304380021000715). Based on document review[/23/] and its long-established cultivation history in India, the VVB concludes that although *A. occidentale* is non-native, it is ecologically suitable for the project area and poses no threat to local biodiversity or environmental safeguards. Thus, the use of this species is deemed to be acceptable.
Swietenia macrophylla	The VVB confirms that *Swietenia macrophylla* is a **non-native species in India**, originally native to Central and South America . Project documentation and references (https://registry.verra.org/app/projectDetail/VCS/2479 ,(PDF) Mahogany (Swietenia macrophylla King): a suitable timber species for agroforestry, https://indianecologicalsociety.com/wp-content/themes/ecology/volume_pdfs/1699421546.pdf and https://mahargh.com/frequently-asked-questions-about-mahogany-farming-in-india), including the Verra-registered Mahogany Plantation Project (VCS 2479), indicate that it has been successfully cultivated in India since the 19th century and is widely used in agroforestry systems for timber, intercropping, and livelihood generation downtoearth.org.in+4verra.org+4mitconnbs.com+4.

	Literature and project evidence confirm that mahogany thrives in Indian conditions, contributing positively to soil health, ecosystem attributes, and farmer income without causing environmental harm. Thus, the use of this species is deemed to be acceptable.
Citrus spp. – Citrus limon and Citrus sinensis	VVB confirms that *Citrus limon* and *Citrus sinensis* are considered native or naturalized species in India, with a long history of cultivation and adaptation across various agro-climatic zones (Herbarium JCB, sciencedirect.com, sciencedirect-domestication). These species exhibit similar morphological characteristics and growth behaviour, allowing the use of a common growth model and biomass equation within the project. Both species are well-suited to Indian conditions, requiring adequate moisture and nutrient availability throughout the fruiting stages. Historical records trace their domestication to South and Southeast Asia, with India being one of the major centres of diversity and production. Their established presence in Indian agroforestry systems without any adverse effects on ecosystems and documented adaptability confirm their classification as native/naturalized species suitable for inclusion in afforestation and reforestation project activities. Thus, the use of this species is deemed to be acceptable.
Areca catechu	VVB confirms that *Areca catechu* is a **non-native species in India**, originally from Southeast Asia, and has become naturalized through centuries of cultivation journal.iahs.org.in+8en.wikipedia.org+8epubs.icar.org.in+8. The species shows considerable adaptability to tropical conditions, thriving in moist, well-drained soils and contributing to livelihoods through nut productionIndia, being the world's largest producer of arecanut (https://link.springer.com/chapter/10.1007/978-3-030-62140-7_1), primarily utilizes its production domestically due to strong internal demand driven by traditional consumption practices, cultural significance, and local market needs. Northeastern India offers emerging suitability zones for areca nut plantations. Thus, the use of this species is deemed to be acceptable.

Pterocarpus santalinus	Based on the review of literature confirms[23] 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.. Wood has different uses in traditional and folklore medicines and is used for the treatment of diabetes, prickly heat, skin diseases and various other ailments. Thus, the use of this species is deemed to be acceptable.
Cocus nucifera	*Cocos nucifera* is not native to India, with its origin traced to the Indo-Pacific region, particularly Southeast Asia and Melanesia (Springer, 2019; ScienceDirect, 2022). However, it has been cultivated in India for centuries and is now fully naturalized and ecologically adapted across tropical and coastal zones of the country, particularly in Kerala, Karnataka, Tamil Nadu, and coastal Andhra Pradesh (Coir Board, 2023; EBSCOhost, 2024). Its long-standing integration into traditional farming systems and its role in supporting agroecological resilience confirm its suitability for inclusion in plantation and agroforestry models under the project. Thus, the use of this species is deemed to be acceptable.
Terminalia tomentosa	*Terminalia tomentosa*, commonly known as Asan, is a **native species to India**, naturally occurring in mixed deciduous forests across central and southern India, including Odisha, where it thrives in tropical climates and riparian zones (State Botanical Garden Odisha, 2022; Forrest Ecology, 2022). It is well adapted to local ecological conditions and widely used in reforestation and agroforestry systems due to its hardy nature and soil enrichment properties Phenology and regeneration status of Terminalia tomentosa (Roxb.) Wight & Arn.: a tropical tree species of Indian forests: Écoscience: Vol 28, No 2 . VVB recognizes that including *Terminalia tomentosa* in the species mix supports ecological restoration goals and aligns with biodiversity-relevant best practice under the applied standard. Thus, the use of this species is deemed to be acceptable.
Sesbania grandiflora	*Sesbania grandiflora* is a **non-native species to India**, originating from Southeast Asia, yet it has been widely cultivated and naturalized across tropical regions of India for its multiple agronomic and ecological benefits (Growing Sesbania Grandiflora – the Vegetable Hummingbird of the Bean Family; Sesbania grandiflora – Tropical Forages). The species is known for its adaptability to degraded soils, fast biomass production, and capability to enhance soil fertility through nitrogen fixation. Its successful establishment in agroforestry systems and application in erosion control confirms its suitability under project conditions. The VVB concludes that although non-native, the species does not pose any ecological threat and supports

	sustainable land restoration objectives. Thus, the use of this species is deemed to be acceptable.

Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
N/A	Based on the onsite inspections/i1-24/ 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/i1-24/, 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/i1-24/, GIS assessment of the project's KML files/03/, and review of land title documents/17/, confirms that all plantation activities are conducted exclusively on privately owned farmer lands. There has been no clearance or conversion of natural ecosystems. This is substantiated by the Forest/Non-Forest Analysis Report /03/ and LULC maps/03/, which confirm that the project lands were classified as agricultural or degraded agricultural areas prior to project initiation. The species selected for plantation include both native and non-native species. The non-native species used have been reviewed through scientific literature and field verification. These species are widely cultivated in India, ecologically suitable under project conditions, and do not exhibit invasive characteristics or pose threats to local biodiversity. Native species have also been included to ensure ecological balance. Furthermore, the VVB confirms that all baseline trees present prior to project implementation have been retained and are excluded from harvesting for the duration of the crediting period. These trees are also subject to ongoing monitoring in accordance with the applied methodology. Based on these findings, VVB concludes that the project does not lead to ecosystem conversion.

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 2.0[/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 of biomass attributable to an A/R CDM project activity	4.0.0
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	a) The land subject to the project activity does not fall in the wetland category. b) 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 AR-ACM0003 methodology.	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. The land type has been classified as long-term cultivated agricultural land, consistent with the applicability conditions outlined in Appendix 1 of AR-ACM0003. As per the project implementation plan, plantation activities have been carried out using pit dimensions of 0.3 m × 0.3 m, and the plantation density has been maintained below 1111 plants per hectare across the project area. This results in a calculated soil disturbance of approximately 99 m² per hectare, amounting to less than 1% of total land area — well below the 10% threshold specified by the methodology. Based on the above assessments, including

		review of supporting documents[/24/]and on-site inspection, the VVB concludes that the applicability conditions of AR-ACM0003 have been satisfactorily met, and the methodology is applicable to the project.
AR-TOOL02	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 10,000 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	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.

	forest, provided that the accumulated area affected by such fires in a given year is ≥5% of the project area.	
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.	VVB based on the review of PDMR/01/, KMLs/03/ and SOPs/06/ confirms that there is no displacement of agricultural activities is expected to cause, directly or indirectly, any drainage of wetlands or peat lands by the project activity. Since the activity is not occurring on the wetlands or peat lands.
AR-TOOL16	a. The areas of land to which this tool is applied: i) Do not fall into 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 b. The A/R CDM project activity meets the following conditions:	i.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. ii. The land has been classified as long-term cultivated and cropland with low productivity/fallow lands with low agricultural output, primarily comprising loamy, sandy, and sandy loam soils. iii. The lands of Table 1 refer to cropland with subsistence farming in which soil disturbance is restricted. Project area does not classify as land listed in Table 1. The lands of Table

	I. Litter remains on site and is not removed in the A/R CDM project activity II. Soil disturbance attributable to the A/R CDM project activity, if any • 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.	2 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 does not classify as land listed in Table i) Litter is not removed, as confirmed during the onsite inspections. Soil disturbance is limited exclusively to site preparation during the planting phase, involving pit digging of 0.3 m × 0.3 m with a plantation density below 1111 trees per hectare. This results in approximately 99 m² of soil disturbance per hectare less than 1% of total land area. Additionally, there is no removal of litter or organic material, and no further soil disturbance occurs post-planting. Based on these observations and field inspection[/i1-24/], the VVB concludes that the applicability conditions of AR-ACM0003 have been satisfactorily met, and the methodology is applicable to the project.

AR-CDM Tool19	This tool has no internal applicability conditions	N/A
VCS Non-Permanence Risk Tool	Applicable on all AFOLU projects	VVB based on the review of NPRT, PP has applied the appropriate VCS NPRT Tool.

3.4.3 Project Boundary

Source		Gas	Included?	Assessment and Conclusion
Baseline	Above Ground Biomass	CO_2	Yes	Based on onsite inspection/i01-24/, 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 change in carbon stocks of trees and shrubs in A/R CDM project activities”.
		CH_4	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N_2O	No	Based on the on-site inspection/i1-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A	-
	Below Ground Biomass	CO_2	Yes	Based on onsite inspection/i01-24/, 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

Source		Gas	Included?	Assessment and Conclusion
				the root shoot ratio for the calculation of below ground biomass.
		CH_4	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N_2O	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A	-
	Soil Organic Carbon	CO_2	Yes	Based on the review of VCS PDMR and EX-ante sheet VVB confirms that soil disturbance is less than 10% on non-organic soil so baseline emissions can be conservatively ignored.
		CH_4	No	Based on the on-site inspection/i1-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N_2O	No	Based on the on-site inspection/i1-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A	Based on the on-site inspection/i1-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	Litter	CO_2	No	This pool is conservatively excluded.
		CH_4	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N_2O	No	Based on the on-site inspection/i01-24/, 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	No	This pool has been conservatively excluded.
		CH_4	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored
		N_2O	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored
		Other	N/A	-
Project	Above Ground Biomass	CO_2	Yes	Based on onsite inspection/i01-24/, 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 change in carbon stocks of trees and shrubs in A/R CDM project activities".
		CH_4	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N_2O	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A	-
	Below Ground Biomass	CO_2	Yes	Based on onsite inspection/i01-24/, 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

Source		Gas	Included?	Assessment and Conclusion
				the root shoot ratio for the calculation of below ground biomass.
		CH_4	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		N_2O	No	Based on the on-site inspection/i01-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
		Other	N/A	-
	Soil Organic Carbon	CO_2	Yes	Based on onsite inspection/i01-24/, 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”.
		CH_4	No	Based on onsite inspection/i1-24/, VVB confirms that 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 change in carbon stocks of trees and shrubs in A/R CDM project activities”.
		N_2O	No	Based on the on-site inspection/i1-24/, VVB confirms that the GHG emissions in the baseline can be conservatively ignored.

Source	Gas	Included?	Assessment and Conclusion
	Other	N/A	Based on the on-site inspection[/i1-24/], VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
Litter	CO_2	No	Based on the on-site inspection[/i1-24/], VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	CH_4	No	Based on the on-site inspection[/i1-24/], VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	N_2O	No	Based on the on-site inspection[/I1-24/], VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	Other	N/A	-
Dead wood	CO_2	No	Based on the on-site inspection[/i1-24/], VVB confirms that the GHG emissions in the baseline can be conservatively ignored.
	CH_4	No	Based on the on-site inspection[/i1-24/], VVB confirms that the GHG emissions in the baseline can be conservatively ignored
	N_2O	No	Based on the on-site inspection[/i1-24/], 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_2O	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

Based on review of the PDMR[/01/] , on-site inspection[/i1-24/] , PRA report[/15/] , and GIS/KML file analysis[/03/], VVB confirms that the baseline scenario has been appropriately identified in accordance with AR-AM Tool 02 "Combined Tool to Identify the Baseline Scenario and Demonstrate Additionality in A/R CDM Project Activities" (Version 01).The project activity is implemented across smallholder-owned private lands in Assam, Bihar, Andhra Pradesh, and Karnataka, which have historically been used for subsistence agriculture with no evidence of managed forestry. PRA surveys and baseline assessments confirm low agricultural productivity due to soil degradation, climatic stress, and limited input availability. These findings are further supported by research articles on regional degradation and agroforestry constraints (e.g. AIPublisher 2021, Biotica 2021, and IndianJournals 2020)[/20/].

On site inspection and land title documentation confirms[/17/05/]:

- All land parcels are privately owned.
- No native forests, wetlands, or organic soils were present for at least 10 years prior to project start.
- Baseline trees, if present (mainly along plot boundaries), are not harvested, cleared, or disturbed and are monitored throughout the crediting period in compliance with AR-TOOL 14 Clause 12(d).

Karnataka: Based on the review of PDMR[/01/], PRA report[/15/], GIS/KML file analysis[/03/] and on-site inspection/interviews[/i1-24/], VVB confirms that the baseline land use in Karnataka comprises cropland with low productivity/fallow land. In the absence of the project, these lands would have continued under the same conditions with limited or no carbon sequestration potential. The baseline scenario consists of historical land-use data, satellite imagery, and farmer records, and complies with the applied AR-ACM0003 v2.0 methodology.

Andhra Pradesh: VVB confirms that in Andhra Pradesh, the pre-project land comprised low-productive/fallow croplands affected by poor soil fertility and water scarcity. Without the project, these lands would have remained degraded, contributing minimally to carbon stock enhancement. The baseline scenario is accurately represented and supported by field evidence, aligning with the methodological requirements under AR-ACM0003 v2.0.

Bihar: In Bihar, the baseline conditions are characterized by croplands with low productivity, limited irrigation facilities, and declining soil quality. The continuation of traditional agricultural practices would not result in significant carbon sequestration. The baseline scenario has been appropriately determined using regional land-use data and conforms with the applied methodology's criteria.

Assam: For Assam, VVB confirms that the baseline scenario represents low-productive croplands primarily used for subsistence agriculture. Without the project intervention, these lands would have continued in their existing degraded state with negligible carbon accumulation. The baseline assessment is consistent with historical land-use trends, validated evidence, and the requirements of AR-ACM0003 v2.0, demonstrating its appropriateness and accuracy.

Further, no shrub biomass, litter, or deadwood pools were observed in the baseline due to degradation. Thus, the change in baseline carbon stocks (ΔCBSL,t) is considered zero. Socio-economic PRA feedback indicates farmers lacked viable alternatives and sought long-term income stability, affirming that the project scenario does not displace any existing livelihoods.

Based on the evidence and methodology compliance, VVB concludes that the identified baseline cropland with low productivity/fallow lands with low output is valid and conservatively estimated.

3.4.5 Additionality

Regulatory Surplus:

VVB, based on the on-site inspection/interviews[/i01-24/], on review of all the relevant national or state policies in the host country[/24/] and based on the host country expertise, confirms that the project activities are not mandated by any law, statute, or other regulatory framework and further confirms that the project seeking registration in an UNFCCC Non-Annex 1 country "India"[/B04/24/] India | UNFCCC.

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.

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

- The planting activity was conducted from June 2019, as confirmed by the evidence provided[/10/] which is before the registration date and after 31 December 1999.VVB confirms that the incentive from the planned sale of carbon credit was seriously considered in the decision to proceed with the project activity based on the interviews[/i01-24/] with the PP staff and agreements in place[/05/12/].

Based on the review of KML files[/03/] and on-site inspection[/i01-24/] VVB confirms that PP has provided ten-year satellite imagery and land ownership/title documents[/17/] for each participating parcel. These records verify prior land-use conditions and evidence of cropping activity before plantation, thereby confirming that the included land parcels meet eligibility criteria and that the project start date is consistent with the methodological requirements.

- Based on the review of PDMR[/01/], carbon waivers agreements[/05/] and on-site inspection/interviews[/i01-24/], VVB confirms that PP has provided evidence regarding the carbon revenues was appropriate. Documentation from stakeholder consultations indicates that farmers were informed of the economic benefits and the role of carbon credits under the Verified Carbon Standard (VCS) framework. The incentive from potential carbon credit revenues was a key factor influencing the decision to implement the project, as reflected in discussions and records maintained prior to the initiation of planting activities.

  Furthermore, the project's financial and operational structure demonstrates that the activity was not designed primarily for profit. Infinite Environmental Solutions Limited, in coordination with project implementers, manages planting, monitoring, and maintenance without direct financial returns apart from the anticipated carbon revenues. This supports the claim that the incentive from carbon credit generation was essential for the project's implementation and long-term sustainability.

Based on the review of the PD[/01/], supporting evidence[/20/17/], and information provided by the Project Proponent (PP), VVB confirms that the demonstration and assessment of additionality have been conducted in accordance with the "AR-CDM Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities" (Version 01). The project has appropriately followed the procedural steps outlined in the applied tool.

STEP 1. Identification of alternative land use scenarios to the proposed A/R CDM project activity

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

Two alternative land use scenarios identified by the PP were:

Land use scenarios for Karnataka:

Alternative Land Use Scenario A - Continuation of Pre-Project Land Use: Based on the review of PDMR[/01/] and on-site inspections[/i01–24/], VVB confirms that the PP has accurately identified the land-use scenario in Karnataka as cropland with low productivity or fallow land. The historical land-use practices, characterized by low-yield cultivation or fallow land maintenance, have remained consistent over time and are in compliance with all applicable legal and regulatory requirements.

- Alternative Land Use Scenario B - Plantation activity without being registered as A/R VCS project: VVB confirms that the identified land-use scenario is appropriate and consistent with paragraph 9 of the AR-CDM Tool 02.

Land use scenarios for Andhra Pradesh:

- Alternative Land Use Scenario A - Continuation of Pre-Project Land Use: Based on the review of PDMR[/01/] and on-site inspections[/i01–24/], VVB confirms that the pre-project land use type in the project area comprises cropland with low productivity and fallow lands across multiple scattered smallholder parcels in Karnataka. The continuation of this pre-project land use represents the most plausible baseline scenario, as these lands were historically used for low yield cropping or remained fallow. The existing land-use pattern complies with all applicable legal and regulatory requirements, and no alternative land-use scenario was identified as more credible or likely in the absence of project activity.

- Alternative Land Use Scenario B - Plantation activity without being registered as the A/R VCS project activity: VVB confirms that the identified land-use scenario is appropriate and consistent with paragraph 9 of the AR-CDM Tool 02.

Land use scenarios for Bihar:

- Alternative Land Use Scenario A - Continuation of Pre-Project Land Use: Based on the review of PDMR[/01/] and on-site inspections[/i01–24/], VVB confirms that the project area comprises multiple small, scattered land parcels privately owned by farmers in Bihar, predominantly classified as low-productivity croplands. Historically, these lands have been used for cultivating rice, wheat, and winter maize in the absence of project activity, this agricultural practice would likely have continued. The continuation of such land use is in compliance with all applicable legal and regulatory requirements.

- Alternative Land Use Scenario B - Plantation activity without being registered as the A/R VCS project activity: VVB confirms that the identified land-use scenario is appropriate and consistent with paragraph 9 of the AR-CDM Tool 02.

Land use scenarios for Assam:

- Alternative Land Use Scenario A - Continuation of Pre-Project Land Use: Based on the review of PDMR[/01/] and on-site inspections[/i01–24/], VVB confirms that the project area comprises multiple small and scattered land parcels privately owned by farmers in Assam, predominantly characterized as cropland with low productivity. Historically, these lands have been used for cultivating crops such as rapeseed, mustard, tea, wheat, pulses, jute, mesta, and sugarcane. In the absence of the project activity, these lands would likely have continued under the same low-productive cropping system. The continuation of this pre-project land-use scenario aligns with all applicable legal and regulatory requirements, thereby establishing the baseline condition appropriately.

- Alternative Land Use Scenario B - Plantation activity without being registered as the A/R VCS project activity: VVB confirms that the identified land-use scenario is appropriate and consistent with paragraph 9 of the AR-CDM Tool 02.

Based on the review of PDMR[/01/] and supporting literature[/23/], including the Forest Survey Report (2023), VVB confirms that although the report indicates a national increase of 1,445 km² in total forest and tree cover over the past two years, this reflects a general national trend and does not represent a credible alternative land-use option within the project boundary. The project area does not include any land designated for forestation under legal requirements, and the rate of forestation activities in comparable regions with similar socioeconomic and ecological conditions since 31 December 1989 is minimal to negligible. Therefore, this alternative scenario is not applicable to the project activity.

VVB through the on-site inspection[/i01-i24/], PRA assessment[/15/] and supporting literature[/23/] confirms that the identified alternative baseline scenarios are applicable and valid to this 1st project activity instance. Furthermore, these scenarios were included as per the paragraph.9 requirements of AR Tool-02.

Outcome of Sub-step 1a: Alternative Land Use Scenarios within the Project Boundary

Land use Type1: Cropland with low productivity/fallow land in Karnataka

- Land Use Scenario A: Continuation of Pre-Project Land Use (Cropland with low productivity/fallow land)
- Land Use Scenario B: Plantation activity without being registered as the A/R VCS project activity

Land use Type 2: Cropland with low productivity/fallow land in Andhra Pradesh

- Land Use Scenario A: Continuation of Pre-Project Land Use (Cropland with low productivity/fallow land)
- Land Use Scenario B: Plantation activity without being registered as the A/R VCS project activity

Land use Type 3: Cropland with low productivity in Bihar

- Land Use Scenario A: Continuation of Pre-Project Land Use (Cropland with low productivity)

- Land Use Scenario B: Plantation activity without being registered as the A/R VCS project activity

Land use Type 4: Cropland with low productivity in Assam

- Land Use Scenario A: Continuation of Pre-Project Land Use (Cropland with low productivity)
- Land Use Scenario B: Plantation activity without being registered as the A/R VCS project activity.

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.

1) The Indian Forest Act, 1927
2) The Wildlife (Protection) Act, 1972
3) Water (Prevention and Control of Pollution) Act, 1974 with Rules
4) Forest (Conservation) Act, 1980
5) Environmental (Protection) Act, 1986
6) Convention on Biological Diversity, 1992
7) Noise Pollution (regulation and Control) Rules, 2000
8) Forest Right Act 2006
9) National Agroforestry Policy, 2014

Based on the review of PDMR[/01/], supporting documentation[/23/], and on-site inspections/interviews[/i01–24/], VVB confirms that all relevant national and state policies and regulations have been appropriately considered in evaluating the alternatives to the Project Activity and the First Project Activity Instance. The continuation of pre-project land use and the identified alternative scenarios fully comply with the applicable legal and regulatory requirements, as detailed in Section 1.15 of the PDMR[/01/]. Furthermore, VVB confirms that the land-use scenarios identified by the Project Proponent across all project states adhere to the respective legal and regulatory frameworks and do not violate any applicable laws or regulations.

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

Based on the review of PDMR[/01/] and on-site inspection[/i01–24/], VVB confirms that the assessment of plausible alternative land-use scenarios has been conducted in accordance with the applied methodology. The alternatives identified are compliant with applicable national and regional laws and regulations, as detailed in Section 1.15 of the PDMR. There are no legal or policy restrictions that would prevent the continuation of these land uses; therefore, the continuation of the existing land use is considered a realistic and credible baseline scenario.
The following have been identified as the alternative land use scenario for the proposed activity in each state (geographic area):

i) Continuation of the pre-project land use

ii) Plantation activity without being registered as A/R VCS project

As there are more than one alternative land use scenarios, the project can proceed to next step i.e. barrier analysis

Step 2: Barrier analysis

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

In line with VCS PDMR[/01/], following were the identified barriers:

Land use Type 1: Cropland with low productivity/fallow land in Karnataka

1. Investment Barriers

i). Absence of Private capital/absence of credit or loan

Based on the review of PDMR[/01/], supporting literature[/20/] and on-site inspection/interviews[/i01-24/] VVB confirms that the project faces significant investment-related barriers affecting its implementation feasibility. The absence of private capital and limited access to formal credit systems have been identified as key constraints among smallholder farmers in Karnataka. As reported by Kumaraswamy M. and Sangeetha M.S. (2025)[/20t/], many farmers lack a formal credit history, making it difficult for financial institutions to assess their creditworthiness. Consequently, farmers often depend on informal moneylenders who charge high interest rates, further aggravating financial pressure. Supporting data[/20u/] indicate that in 2019, 67.6% of agricultural households in Karnataka were indebted, with an average outstanding loan amount of INR 126,240 per household.

ii). High upfront investment

Based on the review of Section 3.5.2 of the PDMR[/01/], financial viability documentation[/04/] and supporting literature[/20/], VVB confirms that the PP has appropriately identified a key investment barrier arising from the high upfront capital requirements for plantation activities, including expenses for planting materials, labor, irrigation systems, and other inputs, coupled with long gestation periods before any revenue is realized. The reviewed financial viability documentation substantiates that these costs are significant and create a considerable financial burden for smallholder farmers, who have limited access to affordable credit facilities. Therefore, VVB confirms that the project activity faces a clear investment barrier, and its implementation would not be financially viable in the absence of carbon revenue incentives, in line with the applied methodology.

Based on these findings and supporting documentation[/23/20/], VVB concludes that the investment barrier stemming from high upfront costs and lack of affordable capital for smallholders is credible, well-substantiated by both project-specific and external data and aligned with the requirements of AR-AM Tool 02 for demonstrating additionality.

2. **Technological Barriers**

Based on the review of PDMR[/02/] and evidence provided through the referenced research paper Kumaraswamy M. and Sangeetha M.S. (2025)[/20t/] and the National Agroforestry Policy (2014)[/23/24/], VVB confirms the technological barrier relevant to the implementation of agroforestry practices. The assessment acknowledges that a key constraint is the limited availability of high-quality planting material, with only about 10% meeting the required standards. Furthermore, the lack of effective extension services hinders the dissemination of research-based agroforestry knowledge to farmers, particularly small and marginal ones. Existing schemes often favour large landholders, further limiting access to technical support for those most in need. Although the National Agroforestry Policy (2014)[/24/] seeks to address these issues, its implementation remains insufficient at the field level. These persistent technological limitations substantiate the barrier preventing the adoption of alternative land-use scenario B (afforestation within an agroforestry system) in the absence of project registration under A/R CDM modalities.

3. Barrier due to Social Condition

The following social condition barriers were appropriately identified by PP for the project:

Based on the review of PDMR[/01/] and supporting literature[/20/], VVB confirms that demographic pressure on land presents a significant social constraint affecting the feasibility and expansion of agroforestry systems within the project area. Studies such as G. Avinash et al. (2022)[/20aa/] indicate that Karnataka has experienced consistent land-use change over the past three decades, with increasing competition for agricultural, settlement, and forest land. The majority of farmers in the state are small and marginal, operating fragmented landholdings averaging approximately 1.3 hectares per household. Such fragmentation and limited land size hinder efficient resource utilization, mechanization, and adoption of improved agroforestry technologies. Moreover, high population density and competing land-use demands further restrict the availability of land for tree-based interventions. In the absence of carbon finance and external incentives, smallholders face difficulty in adopting long-term land-use changes like agroforestry, as these systems require delayed returns and stable tenure. Therefore, the VVB concludes that demographic and landholding constraints act as a major social barrier to the widespread adoption of agroforestry practices within the project region.

VVB also confirms that the shortage of skilled and trained labor constitutes another significant social barrier to the project's implementation. Research by Gayathri M. et al. (2024)[/20cc/], Kumar Y. et al. (2017)[/20dd/], Sharma P. et al. (2017)[/20ee/], and Kumar et al. (2024)[/20ff/] collectively emphasize the limited technical capacity and low awareness among farmers in Karnataka regarding modern agroforestry systems. Farmers often lack the knowledge of nursery management, plantation techniques, and sustainable silvicultural practices necessary for effective implementation. This skill gap leads to dependence on external support for training, monitoring, and maintenance activities. Consequently, the lack of a trained rural workforce poses a long-term risk to the sustainability and scalability of plantation activities.

In conclusion, the VVB determines that the project area is characterized by social constraints related to demographic pressure on land and insufficient skilled labor availability, both of which justify the need for external intervention and carbon financing support to ensure successful implementation and sustainability of the agroforestry project.

i). **Demographic Pressure on Land**- Based on the review of PDMR[/01/], supporting literatures[/20/] and on-site inspection/interviews[/i01-24/] VVB confirms that demographic pressure on land is a significant constraint affecting the viability and sustainability of smallholder agriculture in the project area. According to the 2018–2019[/20/] data on operational land holdings in Karnataka are characterized by small and fragmented land parcels, with a majority of farmers falling into marginal and smallholder categories. For instance, over 80% of rural households in India are either landless or marginal farmers, with the average operational holding falling well below 2 hectares. This fragmentation restricts effective farm management, impedes mechanization, and constrains the adoption of resource-efficient technologies, including agroforestry. High population densities in the states exacerbate land-use competition, further limiting the availability of land for sustainable systems like agroforestry. The findings from the cited Situation Assessment Survey (2019)[/23/] corroborate these trends, validating the project context described by the PP.

ii) Lack of skilled labour/or properly skilled labour force: Based on the review of PDMR[/01/], supporting literatures[/20/] and on-site inspection/interviews[/i01-24/], VVB confirms that the project area faces a significant social barrier due to the lack of skilled and technically trained labour for agroforestry implementation. Farmers in Karnataka possess limited knowledge of plantation management, soil preparation, and maintenance practices, which restricts effective adoption of agroforestry systems. Studies by Gayathri M. et al. (2024)[/20cc/], Kumar Y. et al. (2017)[/20dd/], Sharma P. et al. (2017)[/20ee/], and Kumar et al. (2024)[/20ff/] consistently report that inadequate training, low awareness, and absence of technical support are major impediments to agroforestry adoption in rural India. Hence, VVB concludes that insufficient skilled labour and technical capacity represent a key social barrier, supporting the project's claim of additionality.

Land use Type 2: Cropland with low productivity/fallow land in Andhra Pradesh

1. Investment Barrier-

i). Absence of Private capital/absence of credit or loan

Based on the review of PDMR[/01/], supporting literatures[/20/], relevant socioeconomic data[/20u/] and on-site inspection/interviews[/i01-24/], VVB confirms that the farmers lack of private capital and limited access to credit constitute key barriers to implementing agroforestry on low-productivity cropland and fallow lands in Andhra Pradesh. Studies by (Rao et al. 2033)[/20yyy/] Farmers in the region face restricted access to institutional finance due to small landholdings, insufficient collateral, and the absence of government financial support for agroforestry or plantation programs. As noted in the PDMR, these factors compel farmers to depend on informal lenders charging high interest rates, thereby increasing financial risks and discouraging investment in long-term forestry activities. Based on the review of PDMR[/01/], VVB concludes that the absence of private capital and formal credit facilities represents a valid investment barrier, supporting the project's claim of additionality.

ii). High upfront investment:

Based on the review of PDMR[/01/], supporting literatures[/20/], relevant socioeconomic data[/20u/] and on-site inspection/interviews[/i01-24/] VVB confirms that PP has identified high upfront investment requirements as a significant barrier to implementing plantation activities on low-productivity cropland and fallow land in Andhra Pradesh. Due to limited financial capacity and long payback periods, smallholder farmers are unable to bear the costs associated with plantation establishment and maintenance. VVB concludes that the investment barrier due to high upfront costs is considered credible and validated as a genuine constraint to project implementation in the absence of carbon finance.

2.Technological Barrier:

Lack of necessary material: Based on the review of PDMR[/01/], supporting literatures[/20/], relevant socioeconomic data[/20u/] and on-site inspection/interviews[/i01-24/] VVB confirms that technological barriers significantly affect the feasibility of plantation activities under the project. Limited access to quality planting materials and inadequate technical expertise in species selection pose major challenges for small and marginal farmers in Andhra Pradesh and other participating states. Furthermore, fragmented landholdings and insecure land tenure further constrain the adoption of improved plantation practices. According to government agricultural statistics (2024), Andhra Pradesh has a high proportion of marginal and small operational holdings, indicating that most farmers operate on less than two hectares of land, limiting their capacity to invest in or manage high-quality plantations. Therefore, VVB concludes that the project faces significant technological barriers, as justified under the applied methodology.

3.Social Condition

i). Demographic Pressure on Land: Based on the review of PDMR[/01/], supporting literatures[/20/], relevant socioeconomic data[/20/] and on-site inspection/interviews[/i01-24/] VVB confirms that demographic pressure and land fragmentation present significant social barriers to sustainable agroforestry adoption in the project region. In the PDMR and supporting evidence national agricultural statistics (2018–2019)[/20w/], over two-thirds of Indian farmers are small and marginal landholders, with the majority operating less than two hectares of land. In Andhra Pradesh, the average operational holding size is approximately 1.4 hectares, reflecting severe land subdivision due to rising population density and inheritance patterns. Literature (Kumaraswamy M. and Sangeetha M.S., 2025)[/20t/] further supports that fragmented and scattered land parcels limit the adoption of improved land-use practices and mechanization, reducing economic viability for smallholders. Such conditions restrict the capacity of farmers to invest in long-rotation plantation systems, making external interventions like carbon-financed agroforestry projects essential for promoting sustainable land management and livelihood improvement.

ii) Lack of skilled labour/or properly trained labour force: Based on the review of PDMR[/01/], supporting literature[/20/], socioeconomic data[/20/] and on-site inspection/interviews[/i01-24/] VVB confirms that the adoption of agroforestry practices in the project area faces social barriers, primarily due to the lack of skilled or adequately trained labor. Studies by Kumaraswamy M. and Sangeetha M.S. (2025)[/20t/], farmers in the project districts of Andhra Pradesh encounter significant challenges in accessing skilled labor during field operations. The transition from traditional farming to agroforestry systems requires specialized technical knowledge in species selection, plantation layout, and long-term management, which is presently limited among local farmers. This shortage of trained labor and awareness acts as a social barrier, restricting large-scale adoption and emphasizing the need for continuous capacity building under the project.

Land use Type 3: Cropland with low productivity in Bihar

1. Investment Barrier-

i). Absence of Private capital/absence of credit or loan

Based on the review of PDMR[/01/], supporting evidence[/20u/] and on-site inspection/interviews[/i01-24/] VVB confirms that the project faces significant investment barriers in Bihar, primarily due to limited access to formal credit and financial resources among small and marginal farmers. Although Bihar remains an agriculturally active state, recent stagnation in agricultural growth and poor financial management have resulted in limited capital flow and weak credit infrastructure. As highlighted in the literature[/20nn/oo/pp/], institutional lending remains inadequate, and smallholders continue to depend largely on non-institutional sources such as local moneylenders due to collateral constraints and low financial literacy. Credit cooperatives have also performed poorly, offering minimal financial relief. These conditions indicate a persistent lack of affordable credit and private capital for small farmers, creating a substantial financial barrier to implementing long-term plantation activities. Therefore, VVB concludes that the project's dependence on carbon revenue support is justified, as it addresses a clear investment barrier hindering the feasibility of agroforestry initiatives in Bihar.

ii). High upfront investment:

Based on the review of PDMR[/01/], and supporting literature[/20u/oooo/] VVB confirms that the project activity in Bihar faces a clear investment barrier due to high upfront costs associated with plantation establishment and maintenance. Farmers in Bihar experience persistent financial constraints arising from low and unstable agricultural incomes, high input costs, and frequent crop failures. The limited availability of financial resources and inadequate long-term funding for plantation upkeep often result in reduced survival rates of planted trees. Given the low average monthly income of agricultural households in Bihar, farmers lack the financial capacity to bear initial investment and maintenance costs. Therefore, the VVB concludes that the absence of sufficient financial means and high initial investment requirements make the project activity financially unviable without carbon revenue support, validating the presence of a significant investment barrier.

2.Technological Barrier:

Lack of necessary material: Based on the review of PDMR[/01/], supporting literature[/20u/kk/qq/rr/] VVB confirms that technological barriers significantly affect the adoption and sustainability of agroforestry practices in Bihar. The lack of quality planting material and fragmented land ownership are major constraints limiting the implementation of agroforestry systems. The state of Bihar is dominated by small and marginal landholdings, which restrict large-scale plantation activities and reduce the capacity of farmers to invest in quality seedlings and management inputs. Limited availability of good planting stock further hampers productivity and reduces farmers' confidence in tree-based cropping systems. Therefore, VVB concludes that the project activity faces a technological barrier, where the absence of quality planting material and the prevalence of land fragmentation impede widespread agroforestry adoption, supporting the project's additionality claim.

3. **Barrier due to Social Condition**

i). **Demographic Pressure on Land:** Based on the review of PDMR[/01/], supporting literature[/20tt/uu/] and on-site inspection/interviews[/i01-24/] VVB confirms that Bihar faces significant social barriers arising from high population density and land fragmentation, which directly limit large-scale plantation feasibility. The state's rapid population growth has intensified competition for land between agricultural, residential, and developmental uses, leaving minimal space for long-term agroforestry investments. The majority of farmers in Bihar operate on very small and fragmented landholdings, averaging less than one hectare per household, which constrains efficient resource use and limits adoption of sustainable land-use practices such as tree planting. These demographic pressures, coupled with dispersed land ownership patterns, make the implementation of agroforestry projects socially and economically challenging, thereby justifying the presence of a social barrier under the applied methodology.

ii) **Lack of skilled labour/or properly trained labour force**: Based on the review of PDMR[/01/], supporting literature[/20dd/vv/ww/] and on-site inspection/interviews[/i01-24/] VVB confirms that the project faces a significant social barrier in Bihar due to the lack of skilled or adequately trained labor for implementing agroforestry and carbon sequestration practices. The limited access to technical training and agricultural extension services among local farmers restricts their ability to adopt and manage plantation activities effectively. This shortage of skilled manpower at the community level hampers knowledge transfer and operational efficiency, posing a genuine constraint to the successful implementation and long-term sustainability of the project activities in the region.

Land use Type 4: Cropland with low productivity in Assam

1. Investment Barrier-

i). Absence of Private capital/absence of credit or loan: Based on the review of PDMR[/01/], supporting evidence[/20xx/yy/zz/] and on-site inspection/interviews[/i01-24/] VVB confirms that limited access to formal credit and the absence of private capital present significant investment barriers for small and marginal farmers in Assam. The agricultural credit system in the region remains constrained by limited banking outreach, lack of acceptable collateral, high administrative costs, and the dominance of informal lending sources. Smallholders, particularly those practicing subsistence farming, face challenges in obtaining institutional loans due to perceived high agricultural risk and inadequate credit history. Consequently, farmers continue to depend on informal moneylenders charging high interest rates, further increasing financial vulnerability. In this context, the project activity in Assam demonstrates clear financial constraints that hinder independent investment in agroforestry plantations, thereby justifying the presence of an investment barrier as per the applied methodology.

ii). High upfront investment: Based on the review of PDMR[/01/], supporting evidence[/20u/aaa/bbb/] and on-site inspection/interviews[/i01-24/] VVB confirms that the project activity in Assam faces a clear investment barrier. Agroforestry establishment requires significant upfront costs for plantation, maintenance, and management, while returns are delayed for several years. Smallholder farmers in the region have limited access to credit and financial resources, making such long-term investments economically challenging. With low average household income levels, farmers are unable to bear the initial costs of plantation activities without external support. Therefore, the project activity demonstrates a strong financial barrier, justifying the need for carbon credit incentives to ensure its implementation and sustainability.

2.Technological Barrier:

Lack of necessary material: Based on the review of PDMR[/01/], supporting evidence[/20ccc/ddd/eee/fff/] and on-site inspection/interviews[/i01-24/] VVB confirms that the project area in Assam, categorized as cropland with low productivity, faces significant technological barriers that hinder the adoption of agroforestry practices. A major constraint is the inadequate availability of certified, high-quality planting material of suitable tree species required to establish agroforestry as a viable land-use system. The shortage of superior planting material limits productivity improvement and reduces farmer confidence in long-term plantation activities. Consultations conducted under agroforestry promotion programs in Assam indicate that this constraint is most prevalent among marginal and small farmers, making it difficult to expand afforestation efforts on fallow or low-yielding lands. Therefore, VVB concludes that the lack of quality planting material constitutes a key technological barrier to project implementation in the region.

3.**Barrier due to Social Condition**

i). Demographic Pressure on Land: Based on the review of PDMR[/01/], supporting evidence[/20ggg/hhh/iii/u/kk/] and on-site inspection/interviews[/i01-24/] VVB confirms that demographic pressure and land fragmentation present significant social barriers affecting land availability and productivity in Assam. Rapid population growth, illegal encroachments, and conversion of natural landscapes into built-up areas have reduced agricultural and forest land, leading to a decline in per capita cultivable land. Most farmers in Assam operate on small and marginal holdings, with an average landholding size below one hectare, limiting the scope for efficient land management and mechanization. The majority of agricultural households possess less than one hectare of land, reflecting severe land fragmentation. These social and demographic conditions have made agricultural activities economically unviable, discouraging investment in long-term land-use changes such as agroforestry without external incentives. Therefore, VVB concludes that the project activity faces a clear social barrier, and the implementation of afforestation/reforestation activities in such areas is highly dependent on carbon credit revenue to overcome these constraints.

ii) Lack of skilled labour/or properly trained labour force: Based on the review of PDMR[/01/], supporting evidence[/20jjj/kkk/] and on-site inspection/interviews[/i01-24/] VVB confirms that the project area in Assam comprises croplands with low productivity, where social barriers such as the lack of skilled or adequately trained labour pose significant challenges to effective agroforestry implementation. Managing tree-based systems requires specialized knowledge and long-term commitment, which are currently limited among local farmers. The absence of proper training programs and technical guidance has resulted in inadequate nursery practices and poor-quality planting materials. These social constraints hinder the adoption and sustainability of plantation activities, justifying the project's intervention through structured capacity-building and technical support. Therefore, VVB concludes that a social condition barrier exists due to insufficient skilled labour and training availability in the project area.

Output Step-2: Based on the review of evidence provided/20/23/03/24/15/ VVB confirms that the following three barriers may prevent land use scenarios identified in Step 1b:

Land use Type 1: Cropland with low productivity/ fallow land in Karnataka

- Investment Barriers
- Technological Barriers
- Barriers due to social conditions

Land use Type 2: Cropland with low productivity/ fallow land in Andhra Pradesh

- Investment Barriers
- Technological Barriers
- Barriers due to social conditions

Land use Type 3: Cropland with low productivity in Bihar

- Investment Barriers
- Technological Barriers
- Barriers due to social conditions

Land use Type 4: Cropland with low productivity in Assam

- Investment Barriers
- Technological Barriers

Barriers due to social conditions

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 is prevented by the identified barriers. Additionally, the only alternative scenario not prevented by any barrier is the scenario The alternative land-use scenario involving afforestation or agroforestry without carbon credit incentives is clearly constrained by multiple barriers. Financial barriers, including limited access to credit and high upfront investment costs, prevent farmers from undertaking such activities independently. Technological barriers, such as inadequate availability of quality planting materials and lack of technical knowledge, further limit feasibility. In addition, social constraints, including demographic pressure on land and shortage of skilled labor, hinder large-scale plantation adoption. Therefore, VVB concludes that these cumulative barriers effectively prevent implementation of agroforestry or afforestation activities in the absence of carbon revenue, validating the selected baseline scenario as appropriate and conservative. In accordance with the applied tool this alternative scenario is identified as the baseline scenario.

Outcome of Sub-step 2b: Based on the review of PDMR[/01/] and on-site inspection/interviews[/i01-24/] VVB confirms that the continuation of pre-project land use cropland with low productivity or fallow land does not face any investment or implementation barriers. Maintaining this land use requires no additional inputs or financial expenditure, making it the most likely scenario in the absence of the project. Therefore, in line with the applied methodology, VVB concludes that the continuation of pre-project land use is appropriately identified as the baseline scenario for the project activity.

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 applied AR tool-02:

Is forestation without being registered as an A/R CDM project activity included in the list of land use scenarios that are not prevented by any barrier? NO

→ If no, then:

Does the list contain only one land use scenario? YES

→ If, yes, then the remaining land use is the baseline scenario.

Therefore, scenario. I continuation of the pre-project scenario is considered as baselines scenario for the project in line with the applied tool requirements. Furthermore, the audit team confirms the following:

- Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable.
- Documentary evidence used in determining the baseline scenario is relevant, and correctly quoted and interpreted in the section 3.3 and 3.4 of the PD.
- Relevant national and/or sectoral policies and circumstances have been considered and are listed in the project description.
- The procedures for identifying the baseline scenario have been correctly followed and the identified scenario reasonably represents what would have occurred in the absence of the project.

Step.3: Investment analysis

Not applicable

Step.4 Common practice analysis:

Based on the review of PDMR[/01/] , supporting national and regional data and evidence[/20u/lll/mmm/nnn/oo/ll/ppp/dd/] and on-site inspection/interviews[/i01-24/], VVB confirms that the project is located in the states of Andhra Pradesh, Assam, Bihar and Karnataka, India. The selected project lands comprise low-productivity or fallow croplands in Karnataka and Andhra Pradesh and low-productivity croplands in Bihar and Assam, as considered in the common practice analysis.

A. Karnataka

VVB, based on the review of PDMR[/01/], KML files[/03/] supporting evidence[/20qq/rrr/sss/ttt/] and on-site inspection/interviews[/i01-24/] the project area in Karnataka predominantly comprises low-productivity croplands and fallow lands with limited vegetation cover prior to project initiation. According to the Forest Survey of India (FSI), Karnataka's total geographical area is 191,791 sq km, of which forest cover increased from 36,190 sq km in 2009 (18.86%) to 39,254.27 sq km in 2023 (20.46%), reflecting a net gain of 3,064.27 sq km (1.6 percentage-point increase). Similarly, tree cover rose from 5,683 sq km (2.96%) to 7,779.15 sq km (4.05%), an increase of 2,096.15 sq km (1.09 percentage points). Despite these moderate improvements, most of the gains were recorded within government or community forestry schemes, while private smallholder lands such as those included in this project remained largely underutilized or cropland with low productivity/fallow lands.

VVB confirms that existing state-level programs[/20uuu/ff/www/], including the Krushy Aranya Protsaha Yojane (KAPY), Raising of Seedlings for Public Distribution, and Maguvigondu Mara Salegondu Vana, primarily focus on social forestry and short-term community needs such as fuelwood, fodder, and minor forest products. These initiatives, though beneficial, offer limited incentives for long-term carbon sequestration or smallholder-based agroforestry. Studies (Meti et al., 2025)[/20xxx/] in Dharwad district reveal that only a small fraction of farmers have adopted agroforestry, with the majority citing financial limitations, small landholdings (<2 ha), high labor costs, and a lack of quality planting material as major barriers. VVB concludes that despite moderate statewide forest cover improvement, small and marginal farmers who are the primary beneficiaries of this project have not significantly contributed to or benefited from existing afforestation programs. The proposed project effectively addresses this gap by promoting carbon-credit-based agroforestry on cropland with low productivity/fallow private lands, demonstrating clear additionality and long-term sustainability benefits.

B. Andhra Pradesh

VVB, based on the review of PDMR[/01/], KML files[/03/] supporting evidence[/20rrr/sss/ttt/yyy/zzz/aaaa/] and on-site inspection/interviews[/i01-24/] the extent of forest and tree cover in Andhra Pradesh has moderately increased between 2009 and 2023. The total geographical area of the state is 162,922.57 sq. km, of which the forest cover increased from 24,357 sq. km in 2009 (14.95%) to 30,084.96 sq. km in 2023 (18.46%), showing a net gain of approximately 5,728 sq. km (an increase of about 23.5%). Similarly, tree cover increased from 3,965 sq. km (2.4%) in 2009 to 5,340.02 sq. km (3.27%) in 2023, reflecting an improvement of 1,375.02 sq. km (about 34.7%)

over the same period. Despite these improvements, the overall diffusion of organized afforestation and agroforestry activities remains relatively limited when compared to the state's total land area, especially across fragmented and privately held croplands.

The state of Andhra Pradesh has implemented several national and state-level programs[/20bbbb/cccc/dddd/] such as the MGNREGS, National Afforestation Programme, National Green India Mission, National medicinal Plants board, Nagaravan- Udyan Yojana (Ek Kadam HariyaliKi) / Nagarvanam, Mixed plantation: , Sub-Mission on Agro-Forestry which have contributed to this modest increase in forest and tree cover. However, as indicated in studies such as Rao et al. (2023), only a small proportion of farmers consciously adopt agroforestry practices. Around 73.6% of farmers cited low establishment and maintenance costs as a motivating factor, while 72.9% associated adoption with farming experience. Nonetheless, the uptake of agroforestry remains constrained by several barriers including limited credit access, inadequate extension services, low awarseness levels, and labor shortages exacerbated by MGNREGS-related wage effects. VVB concludes that although Andhra Pradesh has shown measurable gains in forest and tree cover, the diffusion of structured and economically viable agroforestry systems remains low at the smallholder level. The existing constraints underscore the need for external financial and institutional support, such as carbon finance mechanisms, to enhance adoption and sustainability of long-term tree-based land use systems in the project area.

C. Bihar

VVB, based on the review of PDMR[/01/], KML files[/03/] supporting evidence[/20rrr/sss/ttt/eeee/ffff/gggg/hhhh/iiii/jjjj/] and on-site inspection/interviews[/i01-24/] the proposed project activity area in Bihar has experienced only marginal improvement in vegetation cover between 2009 and 2023. The total geographical area of Bihar is 94,163 sq. km, with forest cover increasing from 6,804 sq. km (7.22%) in 2009 to 7,532.45 sq. km (7.99%) in 2023, representing a modest rise of 728.45 sq. km (0.77%) over 14 years. Conversely, tree cover slightly declined from 2,495 sq. km (2.64%) in 2009 to 2,370.21 sq. km (2.51%) in 2023, indicating a net decrease of 124.79 sq. km (0.13%). These figures demonstrate that despite some improvements in forest cover, the rate of increase remains relatively slow and insufficient to meet state-level reforestation and agroforestry targets.

Although various state-led programs such as the National Agroforestry Policy (2014), Krishi Vaniki Yojana, and Hariyali Mission have been introduced to promote tree-based land use, their impact has been limited. In (Kumar et al., 2023) studie highlight that adoption of agroforestry practices remains low, with participation skewed toward wealthier farmers possessing larger landholdings. Key implementation challenges include low farmer awareness, inadequate financial support, limited interdepartmental coordination, and poor community participation. While schemes like Krishi Vaniki Yojana provide saplings free of cost, the absence of sustained financial incentives and technical support restricts large-scale adoption among small and marginal farmers. VVB concludes that despite existing government initiatives, the low adoption rate, limited financial accessibility, and marginal improvement in vegetation cover clearly establish that significant potential for afforestation and agroforestry interventions remains unaddressed. This validates the additionality and relevance of the proposed project activity in Bihar under the applied methodology.

D. Assam

VVB has reviewed section 3.5.2 of the PDMR[/01/], KML files[/03/] supporting evidance[/20-vvvv/kkkk/llll/mmmm/nnnn/oooo/ggg/pppp/qqqq/rrrr/ssss/tttt/] and on-site inspection/interviews[/i01-24/] the state of Assam has experienced a moderate increase in forest and tree cover between 2009 and 2023. The forest cover expanded from 27,692 sq. km (35.30%) in 2009 to 28,313.55 sq. km (36.09%) in 2023, representing an increase of 621.55 sq. km (0.79%). Similarly, the tree cover increased from 1,590 sq. km (2.02%) to 2,101.46 sq. km (2.67%), a growth of 511.46 sq. km (0.65%) over the same period. This indicates that despite various regional initiatives, the overall increase in vegetation cover has been gradual and relatively limited considering Assam's total geographical area of 78,438 sq. km.

VVB also observed that while Assam has several government-supported forestry and agroforestry initiatives such as Compensatory Afforestation Fund Management and Planning Authority (CAMPA), Medicinal & Aromatic Plant Garden Scheme, Cultivation of Medicinal and Cashew Nut Schemes and Honey Bee Program these programs face implementation challenges. Major barriers include delayed fund disbursement, weak monitoring mechanisms, poor sapling survival, and limited community engagement. Studies indicate that species selection often favors fast-growing, non-native species, leading to poor restoration outcomes. Additionally, uniform plantation density prescriptions, such as 1,000 trees per hectare under the national compensatory afforestation framework, overlook local ecological variations and site-specific restoration needs.

Socioeconomic assessments reveal that nearly 80% of Assam's population depends directly or indirectly on agriculture, with most being smallholder farmers operating fragmented land parcels. Constraints such as low access to credit, inadequate technical knowledge, and limited availability of quality saplings significantly hinder large-scale adoption of sustainable agroforestry practices. The combination of these financial and institutional limitations reduces the effectiveness of government-led afforestation schemes and underscores the need for private, incentive-based carbon projects to promote sustainable land restoration.

Therefore, VVB concludes that the project activity contributes meaningfully to addressing existing gaps in afforestation performance in Assam by integrating community-driven agroforestry models that emphasize local species selection, livelihood enhancement, and carbon revenue as key drivers for long-term sustainability.

The PDMR[/01/] and PRA[/15/] evidence confirm that major implementation barriers exist, including low awareness among farmers, lack of land documentation, limited access to quality planting material, and inadequate follow-up or field-level support. Moreover, these programs are not integrated with carbon finance and typically do not promote long-term sustainability or structured benefit-sharing mechanisms.

VVB, based on the review of PDMR[/01/] and supporting evidence[/20/], the presence of several government-led afforestation and social forestry programs, there is limited evidence of their effective implementation within the project areas of Karnataka, Andhra Pradesh, Bihar, and Assam. Farmers in these regions face persistent challenges in accessing the intended benefits of these schemes due to low awareness, lack of technical education, inadequate institutional support, and limited access to quality planting materials. Additionally, financial incentives provided under these government schemes are minimal and insufficient to compensate for opportunity costs or labor inputs. These shortcomings have resulted in poor adoption and limited success of social forestry initiatives in the project states, highlighting a substantial implementation gap.

VVB confirms that the current VCS AFOLU project activity effectively addresses these existing gaps through a structured agroforestry intervention model. Unlike conventional government programs that primarily focus on large landholders or basic social forestry needs such as fuelwood and fodder, the project promotes sustainable agroforestry practices for small and marginal farmers. It provides holistic support, including farmer mobilization, technical training, supply of quality planting materials, field-level supervision, and continuous monitoring. This comprehensive approach enables long-term climate resilience, enhances productivity of low-productive croplands, and improves rural livelihoods.

VVB further notes that the financial feasibility of the project model is strongly dependent on carbon credit revenues to overcome high upfront costs, delayed financial returns, and limited access to institutional finance. In the absence of carbon finance, such interventions would not be economically viable for smallholder farmers. Considering that this integrated agroforestry approach deviates significantly from the prevailing agricultural and forestry practices in the region and relies heavily on carbon revenue for sustainability. Therefore, VVB confirms that the proposed A/R VCS project activity is not the baseline scenario and implementation of VCS project activity instance is considered as additional. Further, based on the above assessment and onsite interviews with the relevant stakeholders[/i1-24/], and in accordance with AR-AM Tool 02 (Step 4), VVB concludes that the proposed activity is not a common practice in the region. It deviates significantly from existing land use patterns and government programs in both design and implementation structure, and its viability is dependent on carbon finance. VVB considers the justification provided by PP along with the references provided satisfactory and therefore confirms that the project activity is not a common practice in the relevant geographical area.VVB has reviewed Section 3.5.4 of the PDMR[/01/], supporting state-level afforestation statistics[/20/], and evidence on existing government forestry schemes[/20/23/24/] to assess the extent to which the proposed agroforestry intervention represents a common practice in the project region. The project is located across Andhra Pradesh, Assam, Bihar, and Karnataka, with land primarily classified as degrading agricultural land. Based on forest and tree cover data from 2009 and 2023[/03/], these states show marginal increases in overall forest and tree cover (e.g., Assam: +621.55 km² forest cover; Bihar: +728.45 km²; Andhra Pradesh: +5,727.96 km²), but tree cover remains under 4% in all states, indicating that long-term tree-based interventions are still limited in scale and not widely adopted. While several government programs related to afforestation and agroforestry exist such as the Sub-Mission on Agroforestry, CAMPA, MGNREGS, and state-specific schemes like KAPY and Hariyali Mission these are primarily structured as social forestry programs with limited coverage per beneficiary (typically 2–6 ha), minimal financial incentives, and weak technical and institutional support. The PDMR[/01/] and PRA[/15/] evidence confirm that major implementation barriers exist, including low awareness among farmers, lack of land documentation, limited access to quality planting material, and inadequate follow-up or field-level support. Moreover, these programs are not integrated with carbon finance and typically do not promote long-term sustainability or structured benefit-sharing mechanisms.

In contrast, the current project applies a block plantation model under the VCS AFOLU standard, offering sustained farmer engagement, technical training, field-level monitoring, and performance-linked benefit sharing none of which are common features of existing schemes. The model is economically viable only with carbon credit revenues, as high upfront costs, delayed returns, and financial risks render such interventions infeasible for smallholders under conventional models. Based on the above assessment, VVB confirms that the project activities are much different (scale, longevity) as compared to the plantation activities carried out by the govt and demonstrated that the current project activities are uncommon and not possible to implement without the VCS revenues. Therefore, VVB confirms that the proposed A/R VCS project activity is not the baseline scenario and implementation of VCS project activity instance is considered as additional. Further, based on the above assessment and onsite interviews with the relevant stakeholders[/i1-24/], and in accordance with AR-AM Tool 02 (Step 4), the VVB concludes that the proposed activity is not a common practice in the region. It deviates significantly from existing land use patterns and government programs in both design and implementation structure, and its viability is dependent on carbon finance. VVB considers the justification provided by PP along with the references provided satisfactory and therefore confirms that the project activity is not a common practice in the relevant geographical area.

Outcome of Step 4

Therefore, the project activity is additional under the applied methodology, AR tool 02[/B03/] and the requirements set out in section 3.13 and 3.14 of the VCS Standard.

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[/02/].

Furthermore, VVB has reproduced calculations[/03/] for selected samples to ensure accuracy of the results. Conversion factors[/B05/],ssss 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 CO_2-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 CO_2-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 CO_2-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 CO_2-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 CO_2-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 AR-TOOL 14, VVB confirms that the carbon stock in trees in the baseline can be counted 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[/i01-24/] 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[/i01-24/], 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[/i1-24/] 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 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. By ensuring this, all the baseline trees within the project plot and along its boundary have been marked with spray paint to differentiate them from the project trees and to ensure they are not included in the project removal accounting[/06/]. This physical marking serves as a visual safeguard against unintentional inclusion of baseline trees in the carbon stock monitoring and harvesting plans.

The VVB has reviewed the KML files and the Forest/Non-Forest Analysis Report[/03/] and confirms that the lands where the proposed activities are implemented are classified as cropland with low productivity/fallow 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 crop lands with low productivity/fallow lands in baseline scenario.

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 crop lands with low productivity/fallow lands, 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 cropland with low productivity/fallow lands 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[/06/] 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).

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - G_{HGE,t} \qquad \text{Equation (2)}$$

Where:

$\Delta C_{ACTUAL,t}$ = Annual actual net GHG removals by sinks at time t; t CO_2-e yr^{-1}

$\Delta C_{P,t}$ = Change in carbon stocks in project, occurring in the selected carbon pools, at time t; t CO_2-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 CO_2-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 CO_2-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 CO_2-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 CO_2-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 CO_2-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 CO_2-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 CO_2e

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[/B03/], "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 CO_2e

$C_{TREE,t1}$ = Carbon stock in trees as estimated at time t1; t CO_2e

$C_{TREE,t2}$ = Carbon stock in trees as estimated at time t_2; t CO_2e

The carbon stock estimation uses the following equation:

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

$$B_{TREE} = A \times b_{TREE}$$

$$b_{TREE} = \sum_{i=1}^{M} w_i \times b_{TREE,i}$$

Where:

C_{TREE} = Carbon stock in trees in the tree biomass estimation strata; t CO_2e

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.

A = Sum of area of the tree biomass estimation strata; ha

w_I = Ratio of the area of stratum *i* to the sum of areas of the tree biomass estimation strata (i.e. w_I = *A(A);* dimensionless)

$b_{TREE,i}$ = Mean tree biomass per hectare in stratum i; t d.m. ha^{-1}

For Calculating AGB of the tree following equations[/22/] where is used-

Som tree- Y=exp (-1.996 + 2.32 In DBH)

Mango: Y=0.20*Collar Diameter^1.85

Guava: Y=(3.264X^1.012) +3.446

Tamarind: Y= exp (-1.996 + 2.32 In DBH)

Eucalyptus: AGB= 0.493*DBH^1.81

Indian Blackberry: Y= exp (-1.996 + 2.32 In DBH)

Ghambar: AGB= 0.18*D^2.16*1.32

Teak: Y= 0.4989 X^2-0.202 X-21.971

Cashew nut = 0.8450 x (dbh^2)^0.8873

Mahoghany: Y= exp (-2.302+0.894 Ln(D^2*H))

Lemon and sweet orange AGB = Y=10^(-0.535+log10*(BA))

Areca Nut: AGB=exp((LN(-1.853+0.728*LN(DBH^2*H))

For Calculating TB (total Biomass)[/22/] of the tree following equations where is used-

Sissoo: TB= 0.904*DBH^1.760

For Calculating Volume of the tree following equations[/22/] where is used

Red Sander: v^1/2= -0.144504+2.943115*D

Coconut: V = 0.2138 – 2.949*D + 12.258*(D^2)

Terminalia tomentosa: V= -0.00012+0.29302*D^2*H

Where;

X & CD = Collar diameter (cm)

D= Diameter at Breast Height (1.37 m)

H= Height of the tree (meter)

Estimation in the changes of carbon stock in shrub biomass:

No shrubs were found during the measurements. Therefore, the estimations of changes in existing vegetation are only associated with the carbon stock in the tree biomass.

Estimation in the changes in carbon stock in dead wood:

Based on the VCS PDMR[/01/] and onsite inspections[/i01-24/], VVB confirms deadwood is expected to remain in the project area and will not be removed. Conservatively, the carbon stock contained in this pool is excluded from the project..

Estimation in the changes in carbon stock in litter:

Based on the VCS PDMR[/01/] and onsite inspections[/i1-24/], 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 excluded from the project.

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"[/B03/] 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[/i1-24/] 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 $SOC_{INITIAL,i}$ 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 $SOC_{LOSS,i}$ 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:

$$dSOC_{i,t} = \frac{SOC_{REF,i} - (SOC_{INITIAL,i} - SOC_{LOSS.i}}{20\ years}$$

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 form 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)[/B03/].

Parameter	Symbol	Value	Source (SOC estimation tool, V01.1.0)
Reference SOC (tC/ha)	SOCREF,i	38	Table 3: HAC soils, Tropical dry.
Land use factor	fLU ,i	0.58	Table 4: Long -term cultivated
Management factor	fMG,i	1.00	Table 4: Full tillage
Input factor	fIN,i	0.95	Table 5: Low

Parameters /States	$SOC_{REF,i}$	Source	$f_{LU,i}$	$f_{MG,i}$	$f_{IN,i}$	$SOC_{INITIAL,i}$	$SOC_{LOSS,i}$	Annual dSOC
Andhra Pradesh	38	Table 3: HAC soils, Tropical dry	0.48	1.00	1.00	18.24	0	0.8
Karnataka	38	Table 3: HAC soils, Tropical dry	0.48	1.00	1.00	18.24	0	0.8
Bihar	65	Table 3: HAC soils, Tropical moist.	0.48	1.00	1.00	31.2	0	0.8
Assam	65	Table 3: HAC soils, Tropical moist.	0.48	1.00	1.00	31.2	0	0.8

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, 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-CO_2 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-CO_2gases N_2O and NH_4 need to be quantified.

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

$GHG_{E,t}$= Emission of non-CO_2 GHGs resulting from burning of biomass and forest fires within the project boundary in year t; t CO_2-e

$GHG_{SPF,t}$= Emission of non-CO_2 GHGs resulting from use of fire in site preparation in year t; t CO_2-e

$GHG_{FMF,t}$= Emission of non-CO_2 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 CO_2-e

$GHG_{FF,t}$= Emission of non-CO_2 GHGs resulting from fire in year t; t CO_2-e

t= 1,2,3…. 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

VVB has reviewed the information provided in the PDMR[/01/], PRA[/15/], KML files[/03/], including the ex-ante leakage estimation sheet, and confirms that the project area, prior to implementation, was cropland with low productivity lands for the Karnataka and Andhra Pradesh and cropland with low productivity for Bihar and Assam and no evidence of grazing activities. Accordingly, VVB confirms that leakage emissions due to the displacement of grazing activities have been appropriately accounted as zero.

Leakage emissions from the displacement of agricultural activities have been estimated in accordance with Equation 4 of the applied methodology, which corresponds to the following expression:

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

Where: LK_t = GHG emissions due to leakage, in year t; tCO_2-e

$LK_{AGRIC,}$ = 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

VVB confirms that the calculations have been conducted using Equations 1 to 3 from Tool AR-tool015[/B03/], with leakage emissions composed of (i) the decrease in carbon stock in the biomass of land receiving the displaced activity and (ii) change in soil organic carbon stock due to land-use change:

$LK_{AGRIC,t}$ = (44/12) x ($\Delta C_{BIOMASS,t}$ + Δ $SOC_{LUC,t}$) (Equation 1)

$\Delta C_{BIOMASS,t}$ = [1.1 x b_{TREE} x (1+R_{TREE}) + b_{SHRUB} x (1+ RS)] x CF x $A_{DISP,t}$ (Equation 2)

$\Delta SOC_{LUC,t}$ = SOC_{REF} x (f_{LUP} x f_{MGP}x f_{INP} - f_{LUD} x f_{MGD} x f_{IND}) x $A_{DISP,t}$ (Equation 3)

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.

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.

Where,

Area displaced is calculated considering the 0.5m buffer around each tree planted. This buffer area is considered as potential area that is displaced due to the implementation of project activity in each year. A_{DISP} is given in the table below:

Year	A_{DISP} (ha.)
2019	22.25
2020	13.98
2021	26.11
2022	108.84
2023	9.32
2024	2.24

As per the VCS PDMR[/01/], the land receiving the displaced agricultural activity has not been specifically identified. However, VVB confirms that such land being forested has been appropriately ruled out based on the legal restrictions under the Forest (Conservation) Act, 1980, which prohibits the diversion of forest land for non-forest purposes without prior approval from the Government of India. Hence, the project proponent has conservatively assumed the receiving land as cropland, fallow land, or barren land.

Further, since the pre-project scenario did not include tree harvesting of pre project trees present or forest clearance, the only displacement considered is that of as traditional seasonal agriculture practices of crops which are considered in the category of shrubs. Accordingly, the proponent has applied shrub biomass values to estimate $\Delta CBiomass,_{t}$ using parameters from CDM Tool 14 (Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities)[/B03/]. The mean above-ground biomass of forest in India was taken as 73 t d.m. ha^{-1}.

$$\Delta C_{Biomass,t} = [b_{SHRUB} \times (1 + R_S)] \times CF \times A_{DISP,t}$$

As per Para 3 (a) (iii) of “Tool for estimation of change in soil organic carbon stocks due to the

implementation of A/R CDM project activities”, Version 1.1.0, estimation of change in soil organic carbon is not applicable. Hence,

$$\Delta SOC_{LUC,t} = 0$$

Hence,

$$LK_{AGRIC,t} = \frac{44}{12} \times \Delta C_{Biomass,t}$$

As per tool 14, Estimation of carbon stocks and change in carbon stocks of trees and shrubs in

A/R CDM project activities,

$$b_{SHRUB,i} = BDR_{SF} \times b_{FOREST} \times CC_{SHRUB,i}$$

BDR_{SF} = 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.

b_{FOREST} = 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

$CC_{SHRUB,I}$ = 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.

Leakage emissions due to project activity:

$$\boldsymbol{LK_t} = \boldsymbol{LK_{AGRIC,t}} = 7380 \text{ t } CO_2e$$

VVB based on the review of calculation provided in the ER sheets[/02/] confirms that the assumptions and parameters used are consistent with approved tools and conservative default values, and the resulting leakage estimation methodology is scientifically valid and compliant with the applied methodology[/B02/] and VCS requirements[/B01/].

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):

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

Where:

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

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

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

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

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

$L_{Kt} = 0$

Net anthropogenic removals are expressed according to the formula:

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

Project proponent applied a discount reserve of 20% to cover the aspects related to the risk of non-permanence[/02/04/]. 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 1948.41of land parcels in First Project Activity Instance.

Calculation of Long-Term Average:

Long Term Average Calculations: for 1st Instance

VVB has reviewed the Ex-ante and Ex post calculation sheets[/02/] and confirms that the average annual emission reductions (ERs) attributed to harvesting species are estimated at 4,075 tCO_2e, which is well below 20% of the total average annual ERs of the project, calculated at 24,194 tCO_2e.

Based on these values, VVB confirms that harvesting activities planned over the course of the crediting period will not result in biomass loss exceeding the 20% threshold at any stage. Therefore, in accordance with the **VCS Program Definitions v4.5**, the project does not meet the criteria for a “harvesting activity.”

As a result, the **Long-Term Average (LTA)** requirement is not applicable to this project activity. The project's harvesting plan remains within the acceptable limits, and no further accounting adjustments are required under the LTA provisions[/B01/].

Vintage period	Baseline Scenario: to date GHG emission reduction and removal at year t, tCO_2e (BE)	Project scenario: to date GH emission reduction and removal at year t (tCO_2e) (PE)	Annual change in GHG benefit (tCO_2e) (PE_t-Pe_{t-1})	Expected net GHG benefit to date (tCO_2e) (PE_t-BE_t)	Total credit available each year (tCO_2e/Yr)	Buffer pool (20%)	Total number of VCUs for issuance
01-Jul-2019 to 31-Dec-2019	0	672	672	672	672	134	538
01-Jan-2020 to 31-Dec-2020	0	3771	3099	3771	3099	620	2,479
01-Jan-2021 to 31-Dec-2021	0	10982	7211	10982	7211	1,442	5,769
01-Jan-2022 to 31-Dec-2022	0	25011	14029	25011	14029	2,806	11,223
01-Jan-2023 to 31-Dec-2023	0	46082	21071	46082	21071	4,214	16,857
01-Jan-2024 to 31-Dec-2024	0	73524	27441	73524	27441	5,488	21,953
01-Jan-2025 to	0	101969	28446	101969	28446	5,689	22,756

31-Dec-2025							
01-Jan-2026 to 31-Dec-2026	0	128351	26382	128351	26382	5,276	21,105
01-Jan-2027 to 31-Dec-2027	0	155219	26868	155219	26868	5,374	21,494
01-Jan-2028 to 31-Dec-2028	0	181664	26446	181664	26446	5,289	21,156
01-Jan-2029 to 31-Dec-2029	0	206892	25228	206892	25228	5,046	20,182
01-Jan-2030 to 31-Dec-2030	0	230828	23936	230828	23936	4,787	19,149
01-Jan-2031 to 31-Dec-2031	0	254546	23718	254546	23718	4,744	18,974
01-Jan-2032 to 31-Dec-2032	0	279333	24787	279333	24787	4,957	19,830
01-Jan-2033 to 31-Dec-2033	0	305765	26432	305765	25078	3,791	21,287
01-Jan-2034 to 31-Dec-2034	0	332933	27168	332933	0	0	0

01-Jan-2035 to 31-Dec-2035	0	354665	21732	354665	0	0	0
01-Jan-2036 to 31-Dec-2036	0	376306	21641	376306	0	0	0
01-Jan-2037 to 31-Dec-2037	0	383265	6960	383265	0	0	0
01-Jan-2038 to 31-Dec-2038	0	389528	6262	389528	0	0	0
01-Jan-2039 to 31-Dec-2039	0	418734	29206	418734	0	0	0
01-Jan-2040 to 31-Dec-2040	0	450836	32102	450836	0	0	0
01-Jan-2041 to 31-Dec-2041	0	481492	30656	481492	0	0	0
01-Jan-2042 to 31-Dec-2042	0	511904	30413	511904	0	0	0
01-Jan-2043 to 31-Dec-2043	0	542178	30273	542178	0	0	0
01-Jan-2044 to	0	573204	31026	573204	0	0	0

31-Dec-2044							
01-Jan-2045 to 31-Dec-2045	0	605222	32019	605222	0	0	0
01-Jan-2046 to 31-Dec-2046	0	638148	32925	638148	0	0	0
01-Jan-2047 to 31-Dec-2047	0	672305	34157	672305	0	0	0
01-Jan-2048 to 31-Dec-2048	0	707841	35536	707841	0	0	0
01-Jan-2049 to 31-Dec-2049	0	451523	-256318	451523	0	0	0
01-Jan-2050 to 31-Dec-2050	0	185157	-266366	185157	0	0	0
01-Jan-2051 to 31-Dec-2051	0	191670	6513	191670	0	0	0
01-Jan-2052 to 31-Dec-2052	0	195768	4098	195768	0	0	0
01-Jan-2053 to 31-Dec-2053	0	196875	1107	196875	0	0	0

01-Jan-2054 to 31-Dec-2054	0	196965	90	196965	0	0	0
01-Jan-2055 to 30-June-2055	0	97673	-99292	97673	0	0	0
Total Expected net GHG benefit to date (tCO2e) (PEt-BEt)				10,958,798			
Total number of years in the established time period				36			
Long term average (LA)				304,411			

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 joint project description & Monitoring report, 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 the joint project description & Monitoring report.

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/] and Kml files[/03/].	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[/i01-24/] confirms that the location of the project area is accurately provided by PP.
Total area of PAI 1	1948.41 hectares	Based on the GIS assessment of the project area files[/03/], VVB confirms that the total project area for the first instance is 1948.41 hectares.
Collar diameter/Collar Girth/ Diameter/Girth at breast height (DBH/GBH)	Collar diameter *Mangifera indica* (Mango)= 28.76 cm (6th year) Collar diameter *Psidium guajava* (Guava)= 1.37cm (2nd year), 3.36cm (4th year), 5.70cm (6th year), 7.28cm (8th year), 9.83cm (10th year). Collar diameter *Citrus* spp. (Lemon) = 8.29 cm (6th year) Collar Diameter *Syzygium cumini* (Jamun)= 8.85 cm (6th year) Collar Diameter *Swietenia macrophylla* (Mahogany)= 13.80 cm (6th year)	VVB has reviewed the secondary data sources[/23/] used for referring to the CD/CG/DBH values for ex ante calculations for the sixteen species. VVB confirms that the values used are based on the established research from the host country and species specific and provides a reliable foundation for accurate estimations. The approach used is acceptable under the applied methodology and is considered satisfactory to the VVB.

	Collar Diameter *Tamarindus Indica* (Tamarind)= 12.11cm (6th year) Collar Diameter *Eucalyptus spp.* (Eucalyptus) = 16.06 cm (6th year) Collar Diameter *Persea bombycina* (Som Tree) = 9.55 cm (6th year) Collar Diameter *Areca catechu* (Areca nut) = 8.15 cm (6th year) Collar Diameter *Gmelina arborea* (Gamhar) = 3.74 cm (6th year) Collar Diameter *Tectona grandis* (Teak) = 8.82 cm (6th year) Collar Diameter *Dalbergia sissoo* (Shisham) = 8.99 cm (6th year) Collar Diameter *Anacardium occidental* (Cashew) = 12.16 cm (6th year)DBH *Cocos nucifera* (Coconut) = 0.11 m (6th year) DBH *Pterocarpus santalinus* (Red sanders) = 0.10 m (6th year) DBH *Terminalia tomentosa* (Asan) = 0.04 m (6th year)	
Allometric Equation	*Mangifera indica* Y=0.20*Collar Diameter^1.85	VVB, based on the review of supporting literature[/1-25/] confirms that the PP adopted study demonstrates a strong correlation between collar diameter and biomass, making it a reliable predictor for carbon stock estimation.

		Although the study was conducted in the Indian Sub-Himalayas, and there may be variations in climatic conditions, soil fertility, and management practices in the project regions of Karnataka and Andhra Pradesh, the equation remains applicable with appropriate calibration based on field measurements.
	Psidium guajava Y=(3.264X^1.012) +3.446	VVB, based on the review of supporting literature[/22-b/] confirms that d 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 *Psidium guajava* 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.
	Citrus spp. (Citrus limon and C. sinensis) Y=10^(-0.535+log10*(BA))	This equation estimates the above-ground biomass (AGB) of trees based on basal area (BA) and is a general empirical model developed by Brown (1997) for tropical tree species. Based on the review of referenced literature[/22b/] VVB confirms that the equation is appropriate, scientifically sound, and conservative for estimating AGB in *Citrus sinensis* and *Citrus limon*, especially in the absence of species-specific models. The use of basal area as the input parameter ensures practical field applicability and aligns with standard forestry practices.
	Syzygium cumini Y= exp (-1.996+2.32 n DBH)	VVB, based on the review of supporting literature[/22b/] confirms that the allometric equation Y= exp (-1.996+2.32 n DBH) is used for Jamun is sourced from a study Biomass and Biomass Change of Tropical Forests. The study establishes a strong

		correlation between diameter at breast height (DBH) and biomass, providing a reliable basis for estimating the carbon stock of the species. The conditions under which the study was conducted are comparable to those of the project area. Therefore, the use of this species-specific equation is appropriate for the project measurements.
	Swietenia macrophylla Y= exp (-2.302+0.894 Ln(D^2*H)	VVB, based on the review of supporting literature/22b/ confirms that the allometric equation Y= exp (-2.302+0.894 Ln (D^2*H) used for *Swietenia macrophylla* is sourced from a study focusing on Development and Evaluation of Species-Specific Biomass Models for Most Common Timber and Fuelwood Species. The study, based on data from natural forests and plantations under similar climatic conditions as the project area, demonstrates a strong correlation between collar diameter and biomass, supporting its reliability for carbon stock estimation.
	Tamarindus indica Y= exp (-1.996 + 2.32 In DBH)	VVB, based on the review of supporting literature/22b/ confirms that the allometric equation Y= exp (-1.996 + 2.32 In DBH) used for *Tamarindus indica* is sourced from Biomass and Biomass Change of Tropical Forests. The study, conducted under conditions similar to the project area, establishes a correlation between diameter and biomass, supporting its appropriate use for carbon stock estimation in the project.
	Eucalyptus spp. AGB=0.493*DBH^1.81	VVB, based on the review of supporting literature/22b/ confirms that the allometric equation AGB=0.493*DBH^1.81 used for *Eucalyptus spp.* is sourced from Biomass and Biomass Change of Tropical Forests. The study was conducted under conditions similar to the project area and the same species-specific equation has been applied within the project. Therefore, the

		use of this equation is appropriate for the carbon stock estimation in the project.
	Mannchilus gamblei Y= exp (-1.996 + 2.32 1n DBH)	VVB, based on the review of supporting literature/22b/ confirms that the allometric equation Y= exp (-1.996 + 2.32 1n DBH) used for *Mannchilus gamblei* is sourced from Biomass and Biomass Change of Tropical Forests. The same equation has been applied in the project. Therefore, its application is considered appropriate for biomass estimation.
	Areca catechu AGB=exp((LN(-1.853+0.728*LN(DBH^2*H))	VVB, based on the review of supporting literature/22/ confirms that the allometric equation AGB=exp((LN(-1.853+0.728*LN(DBH^2*H)) used for *Areca catechu* is sourced from a biomass and carbon stock in Areca nut. The study developed species-specific allometric equations based on diameter and height, using destructive sampling within agroforestry systems in tropical forest regions. The study was conducted in a similar climatic zone and same species; the application of this equation is considered for estimating biomass in the project Areca nut plantations.
	Gmelia arborea AGB= 0.18*D^2.16*1.32	VVB, based on the review of supporting literature/22b/ confirms that the allometric equation AGB= 0.18*D^2.16*1.32 used for *Gmelia arborea* is sourced from a stand structure, biomass and carbon storage in *Gmelina arborea* plantation at agricultural landscape in foothills of eastern Himalayas. The study was conducted in the Terai region of West Bengal, specifically in the Cooch Bihar district, a sub-Himalayan area. It established a strong correlation between collar diameter and biomass, thereby supporting the use of this equation for carbon stock estimation in *Gmelina arborea* plantations
	Tectona grandis Y= 0.4989 X^2-0202 X -21.971	VVB, based on the review of supporting literature/22b/ confirms that the allometric

		equation Y= 0.4989 X^2-0202 X -21.971 used for *Tectona grandis* is sourced from a Carbon storage and sequestration rate assessment and allometric model development in young teak plantations of tropical moist deciduous forest, India. The study was to estimate carbon stocks and their sequestration rates, and to develop allometric models for assessing carbon storage in age-series young teak (*Tectona grandis*) plantations through biomass and productivity measurements. These plantations were established in the tropical moist deciduous forests of the Kumaun Himalayan Tarai region. The equation is appropriate species-specific project measurements.
	Dalbergia sissoo TB= 0.904*DBH^1.760	VVB, based on the review of supporting literature[/22b/] confirms that the allometric equation TB= 0.904*DBH^1.760 used for *Dalbergia sissoo* is sourced from a Biomass And Carbon Storage in Trees Grown Under Different Agroforestry Systems in Semi-Arid Region of Central India. The study aimed to assess biomass and carbon stocks in trees without any modification. Tree allometric equations were developed by establishing relationships between tree parameters such as Diameter at Breast Height (DBH), Circumference at Breast Height (CBH), and biomass, including both above-ground and below-ground components. The equation is appropriate for use in this project measurements.
	Annacardium occidental AGB= 0.8450 x (dbh^2)^0.8873	VVB, based on the review of supporting literature[/22b/] confirms that the allometric equation AGB= 0.8450 x (dbh^2)^0.8873 used for *Annacardium occidental* is derived from the estimation of amount of biomass and carbon stock of cashew trees. The equation remains suitable when appropriately calibrated with project measurements. Therefore, this application

		is appropriate for biomass estimation in this project.
Volumetric Equation	*Cocos nucifera* V = 0.2138-2.949*D+ 12.258*(D^2)	VVB, based on the review of supporting literature[/22b/] confirms that the volumetric equation V = 0.2138-2.949*D+ 12.258*(D^2) used for *Cocos nucifera* is derived from Estimation of carbon stock in natural forests using geospatial technology in the Eastern Ghats of Tamil Nadu, India. The study estimated the carbon stock in the natural forest area of Kolli Hills, part of the Eastern Ghats, by applying geospatial technology. It calculated the total biomass, both above and below ground, and subsequently estimated the total carbon stock. Therefore, this equation is considered appropriate for biomass estimation in the project plantation.
	Pterocarpus santalinus v^1/2 = - 0.144504+2.943115*D	VVB, based on the review of supporting literature[/22b/] confirms that the volumetric equation v^1/2 = - 0.144504+2.943115*D used for *Pterocarpus santalinus* is derived from the Andhra Pradesh Forest Inventory Report. Red Sander is native to Andhra Pradesh and the equation is based on regional inventory data, species specific, it is relevant and appropriate for estimating biomass and carbon stock in the project.
	Terminalia tomentosa V= - 0.00012+0.29302*D^2*H	VVB, based on the review of supporting literature[/22b/] confirms that the volumetric equation V= - 0.00012+0.29302*D^2*H used for *Terminalia tomentosa* is derived from the FSI book Nepal Bhutan and India,1996[/22b/]. The study conducted similar conditions to the project area and since the same species-specific equation was used in the project. Thus, the same application is deemed to be appropriate for the biomass estimations.
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[22] 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	Red Sander: 0.44 Coconut: 0.50 Terminalia tomentosa: 0.73	VVB confirms that the wood density values used for biomass estimation are derived from reliable default sources consistent with IPCC and FAO references. The values applied for the relevant species are as follows: • ***Pterocarpus santalinus (Red Sanders):*** A wood density of **0.44 t/m³** has been applied. This value is sourced from **IPCC 2006 Guidelines, Volume 4, Table 3A.1.9-2** (https://www.fao.org/3/w4095e/w4095e0c.htm) and is acceptable under the applied methodology. • ***Cocos nucifera (Coconut):*** The applied density of **0.50 t/m³** is consistent with values listed in the **FAO Wood Density Database** (https://www.fao.org/3/w4095e/w4095e0c.htm), and reflects typical ranges for this species. • ***Terminalia tomentosa:*** A wood density of **0.73 t/m³** is used, which is also supported by the **FAO Wood Density Database** (https://www.fao.org/3/w4095e/w4095e0c.htm), and is appropriate for this species.

<table>
<tr><td></td><td></td><td>These values are appropriate for the respective species and are acceptable under the applied methodology.</td></tr>
<tr><td>BEF</td><td>1.57</td><td>VVB confirms that Value from Kishwan et al - Emission removal capability in India for India's forests/23/. This value is widely accepted as well as provides conservative estimates for BEF according to Indian context.</td></tr>
<tr><td>Leakage parameters</td><td><table>
<tr><td>R_{TREE}</td><td>0.25</td><td>BDR_{SF}</td><td>0.1</td></tr>
<tr><td>R_s</td><td>0.4</td><td>b_{FOREST}</td><td>73</td></tr>
<tr><td>CF</td><td>0.47</td><td>$CC_{SHRUB,i}$</td><td>0.5</td></tr>
</table></td><td>Values are used in accordance with CDM AR tool 15/B03/ and IPCC GPG LULUCF report and are acceptable under the applied methodology.</td></tr>
<tr><td>Soil Organic Carbon (SOC)</td><td>0.8 t/ha/yr</td><td>AR-Tool 16 was applied for the SOC calculations, and the total area was multiplied by the dSOC value obtained from the tool's spreadsheet. The VVB considers this approach appropriate and in line with the applied methodology.</td></tr>
<tr><td>Project trees</td><td>2,327,233</td><td>Upon review of Ex-ante sheet/02/ provided, VVB confirms that PP has demonstrated the total number of trees planted during 2019 to 2024. Value considered is in line with Calculations provided in ex-ante sheet.</td></tr>
<tr><td>Stratum weight (wi)</td><td><table>
<tr><th>Stratum Name</th><th>Wi</th></tr>
<tr><td>2019 Mango</td><td>0.07</td></tr>
<tr><td>2020 Mango</td><td>0.08</td></tr>
<tr><td>2021Mango</td><td>0.07</td></tr>
<tr><td>2022 Mango</td><td>0.10</td></tr>
<tr><td>2023 Mango</td><td>0.06</td></tr>
</table></td><td>Upon review of Ex-ante sheet/02/ and sample plot calculation sheet 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 same was deemed to be acceptable.</td></tr>
</table>

<table>
<tr>
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<table>
<tr><td>2024 Mango</td><td>0.03</td></tr>
<tr><td>2019 Mixed</td><td>0.05</td></tr>
<tr><td>2020 Mixed</td><td>0.09</td></tr>
<tr><td>2021 Mixed</td><td>0.16</td></tr>
<tr><td>2022 Mixed</td><td>0.18</td></tr>
<tr><td>2023 Mixed</td><td>0.10</td></tr>
<tr><td>2024 Mixed</td><td>0.01</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Permanent Sample Plot (PSP)</td>
<td>
<table>
<tr><th>Stratum name</th><th>PSPs (Winrock)</th><th>PSPs (Monitored)</th></tr>
<tr><td>Mango 2019</td><td>2</td><td>9</td></tr>
<tr><td>Mango 2020</td><td>3</td><td>4</td></tr>
<tr><td>Mango 2021</td><td>2</td><td>7</td></tr>
<tr><td>Mango 2022</td><td>3</td><td>5</td></tr>
<tr><td>Mango 2023</td><td>1</td><td>4</td></tr>
<tr><td>Mango 2024</td><td>0</td><td>1</td></tr>
<tr><td>Mix 2019</td><td>6</td><td>7</td></tr>
<tr><td>Mix 2020</td><td>7</td><td>7</td></tr>
<tr><td>Mix 2021</td><td>9</td><td>10</td></tr>
<tr><td>Mix 2022</td><td>7</td><td>13</td></tr>
<tr><td>Mix 2023</td><td>1</td><td>5</td></tr>
<tr><td>Mix 2024</td><td>0</td><td>1</td></tr>
</table>
</td>
<td>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). As per the Winrock model, total 42 plots were required to monitor throughout the project area. PP following the conservative approach monitored extra plots (73).</td>
</tr>
</table>

	Total	42	73	

Data And Parameters to be monitored as per the VCS PDMR[/01/] are:

Data/Parameter	Value Applied	VVB Assessment
Project area	1948.41 hectares	Based on the GIS assessment of the project area files[/03/], VVB confirms that the total project area for the first instance is 1948.41 hectares.
Collar Dimeter (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[/i01-24/], and as per SOP[/06/] 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 the team, following the monitoring	Based on the review of the PDMR[/01/],SOP[/06/] it is confirmed that this parameter will be measured with Clinometers. The measurement involves the following: i. Angle/degree percentage observation through clinometers ii. Distance in meter of the observer from point of observation to the tree (measure by using Measuring Tape).

<table>
<tr>
<td></td>
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<td>iii. Height of the observer in meter (measured by using Measuring Tape, Make – Freemans Fibra (https://www.freemansgroup.com/about-fmi-ltd)

All the trees in the sample area of 30 m x 30 m grid in permanent sample plots are measured. Below illustrated figure shows method applied to calculate the height of the tree:</td>
</tr>
<tr>
<td>Are</td>
<td>
<table>
<tr><th>Stratum Name</th><th>Area (Ha.)</th></tr>
<tr><td>Mango 2019</td><td>80.23</td></tr>
<tr><td>Mango 2020</td><td>126.77</td></tr>
<tr><td>Mango 2021</td><td>114.04</td></tr>
<tr><td>Mango 2022</td><td>188.53</td></tr>
<tr><td>Mango 2023</td><td>126.46</td></tr>
<tr><td>Mango 2024</td><td>44.82</td></tr>
<tr><td>Mix 2019</td><td>170.92</td></tr>
<tr><td>Mix 2020</td><td>229.06</td></tr>
<tr><td>Mix 2021</td><td>334.65</td></tr>
<tr><td>Mix 2022</td><td>405.95</td></tr>
<tr><td>Mix 2023</td><td>106.92</td></tr>
<tr><td>Mix 2024</td><td>20.06</td></tr>
</table>
</td>
<td>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[/03/].</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>
<table>
<tr><th>Stratum</th><th>Std. dev (t.dm/ha)</th></tr>
<tr><td>Mango 2019</td><td>12.1765</td></tr>
<tr><td>Mango 2020</td><td>11.4975</td></tr>
<tr><td>Mango 2021</td><td>10.682</td></tr>
</table>
</td>
<td>Based on the VCS PDMR[/01/] ER sheet[/02/], confirms that for the calculation of PSPs, the std. dev is assumed within the stratum appropriately.</td>
</tr>
</table>

<table>
<tr>
<td></td>
<td>
<table>
<tr><td>Mango 2022</td><td>8.043</td></tr>
<tr><td>Mango 2023</td><td>3.654</td></tr>
<tr><td>Mango 2024</td><td>3.01</td></tr>
<tr><td>Mix 2019</td><td>16.961</td></tr>
<tr><td>Mix 2020</td><td>14.364</td></tr>
<tr><td>Mix 2021</td><td>12.292</td></tr>
<tr><td>Mix 2022</td><td>8.4875</td></tr>
<tr><td>Mix 2023</td><td>7.0385</td></tr>
<tr><td>Mix 2024</td><td>5.796</td></tr>
</table>
</td>
<td></td>
</tr>
<tr>
<td>Size of Each PSPs in the Stratum i (APlot i)</td>
<td>Size of Each PSPs in the Stratum i (APlot i)
<table>
<tr><th>Stratum name</th><th>PSPs (Winrock)</th><th>PSPs (Monitored)</th></tr>
<tr><td>Mango 2019</td><td>2</td><td>9</td></tr>
<tr><td>Mango 2020</td><td>3</td><td>4</td></tr>
<tr><td>Mango 2021</td><td>2</td><td>7</td></tr>
<tr><td>Mango 2022</td><td>3</td><td>5</td></tr>
<tr><td>Mango 2023</td><td>1</td><td>4</td></tr>
<tr><td>Mango 2024</td><td>0</td><td>1</td></tr>
<tr><td>Mix 2019</td><td>6</td><td>7</td></tr>
<tr><td>Mix 2020</td><td>7</td><td>7</td></tr>
<tr><td>Mix 2021</td><td>9</td><td>10</td></tr>
<tr><td>Mix 2022</td><td>7</td><td>13</td></tr>
<tr><td>Mix 2023</td><td>1</td><td>5</td></tr>
<tr><td>Mix 2024</td><td>0</td><td>1</td></tr>
<tr><td>Total</td><td>42</td><td>73</td></tr>
</table>
</td>
<td>VVB confirms an area of 30-meter x 30-meter size (measuring 0.09 ha) is measured and marked within each sample land parcel.

The selection of 0.09 ha PSP is based on the CDM manual[3] for “Measurements for Estimation of Carbon Stocks”.”. VVB considers this approach as valid and appropriate.</td>
</tr>
<tr>
<td>Land Title Records</td>
<td>Land titles[/17/]</td>
<td>VVB has verified land ownership documents[/17/] of farmers involved in the Project Activity and First</td>
</tr>
</table>

[3] 0 https://unfccc.int/resource/docs/publications/cdm_afforestation_field-manual_web.pdf

		Project Activity phase were verified during the onsite inspections/i1-24/.
Survival Rate	90%	Based on the information provided in the VCS PDMR/01/ and the Project Implementation and Management Plan/12/, VVB finds that the Project Proponent (PP) has adequately justified the assumed 90% tree survival rate. The PP has established a structured mortality monitoring system, including assessments at 12- and 24-months post-planting, supported by a two-round replanting ("blanking") process and final survival checking after 2 years of planting and subsequently at each monitoring event. The project includes active farmer engagement, training, and a responsive sapling replacement mechanism. Although the project targets full survival, a conservative 90% rate has been applied in the carbon accounting. Given the documented procedures and conservative approach, VVB considers the assumption reasonable.
AGB	Calculated Value in Ex-post in Calculation Sheet/02/	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.
d_{SOC}	0.8 tC/ha/yr	VVB confirms that the value has been taken from CDM AR-Tool 16. Hence, value applied is valid and appropriate.
$A_{DISP,t}$	<table><tr><th>Year</th><th>A_{DISP} (ha.)</th></tr><tr><td>2019</td><td>22.25</td></tr><tr><td>2020</td><td>13.98</td></tr><tr><td>2021</td><td>26.11</td></tr><tr><td>2022</td><td>108.84</td></tr><tr><td>2023</td><td>9.32</td></tr><tr><td>2024</td><td>2.24</td></tr><tr><td>Total</td><td>182.74</td></tr></table>	VVB based on the review of ER sheets[/02/] confirms that the value of area displaced due to implementation of project activity is accurately calculated.
$A_{BURN,I,t}$	0	VVB based on the review of PDMR[/01/], SOPs[/06/] and onsite interviews with the farmers[/i1-24/] during onsite inspections

		there is no burning activities occurs.
Buffer	20 %	VVB based on the review of VCS PDMR[/01/], NPRT and NPRR[/04/] confirms that the applied buffer rating i.e. 20% is valid and appropriate in the project context and the VCSs to be deposited into the buffer pool account equals to 17828.400.

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:

Based on review of SOPs[/06/] and onsite inspections VVB verifies the management structure of the plantation project of Infinite Environmental Solutions Limited is represented as follows:

Organization	Roles	Reporting	Designation
Infinite Environmental Solution Limited	▪ Project plan; designing & execution ▪ Financial management; Budgeting; ▪ Project accounting;	Infinite Environmental Solution Limited Operation Director	Project Proponent (PP)

	▪ Checks & controls Project Monitoring & Reports Supervision of carbon credit project Addressing all legal procedures		
Mangrove Foundation of India (MFI)/ Work for Improvement of People & Environment Sustainability (WIPES) and Holistic Life Transforming & Empowering Society (HLTEC)	▪ Project implementation ▪ General administration ▪ Coordination with the field staff ▪ Develop & maintain the MIS ▪ Intermittent Site visits ▪ Total field Assistance to the Administrators ▪ Nursery raising ▪ Land development ▪ Labor management & allocation ▪ Site monitoring ▪ On-site management Compilation of inventory and reporting	Infinite Environmental Solution Limited Operation Director	Project implementor

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.

Stratification

VVB has reviewed the stratification approach and confirms that it aligns with the guidelines outlined in AR-ACM0003 "Afforestation and reforestation of lands except wetlands" Version 2.0. The project's stratification is initially defined ex-ante and is subject to periodic review and revision based on monitoring results obtained during implementation.

Strata delineation has been conducted based on planting year and species composition, with the two main strata identified as "Mango" and "Mixed" species. The stratification approach is deemed appropriate, considering that Mango plantations represent the dominant share in terms of area covered, number of trees planted, and associated biomass accumulation across all planting years. The "Mixed" stratum (i.e. non mango species) comprises a comparatively smaller area and tree count and has therefore been consolidated accordingly.

VVB confirms that the project has established a dynamic stratification and sampling framework, which is periodically updated to reflect field conditions. Re-stratification is conducted as needed based on observed biomass accumulation, planting dates, and potential disturbances (e.g., fire, pest, disease outbreaks), in line with methodological requirements. Any changes to the number or boundaries of strata trigger corresponding adjustments in the sampling framework.

VVB finds that the current stratification and the proposed re-stratification are justified and consistent with the monitoring data and project conditions. The procedures for stratum identification and adjustment are adequately described and transparently implemented in accordance with the methodology.

Sampling design, sampling size and random sample point selection
Based on the review of the PDMR[/01/] and the project SOP[/06/], the VVB confirms that the sampling design for biomass estimation follows the requirements of the applied methodology. The design targets a precision level of ±10% at a 90% confidence level, in accordance with the "Calculation of the number of sample plots for measurements within A/R CDM project activities" (Version 02.1.0) and uses the Sampling Calculator (Walker et al., 2007) to determine plot numbers and locations.
A stratified random sampling approach has been applied using 30m × 30m square permanent sample plots. Sample sizes were determined through a pilot inventory based on observed biomass variability, and the discounting procedure outlined in Appendix 2 of the A/R methodological tool (Version 4.2) is applied where required. Plot allocation across strata is proportional to area, and randomization procedures are documented in the project's SOPs. The VVB concludes that the sampling approach is methodologically appropriate and consistent with the applied standard. As per the CDM field manual for estimation of carbon stocks, the sample plot size is designed to accommodate measurement of 10–15 trees per plot. The adopted 900 m² (30m × 30m) square plots are adequate given the minimum

planting density of 200 trees/ha in the project area. An Excel dataset/21/ and shapefile/03/ with sample point coordinates are available for reference.

Field work safety:

Based on review of SOPs/06/ and onsite inspection VVB confirms that procedures for field team preparation, equipment calibration, and safety checks are in place prior to each field round. Organizational readiness, including pre-deployment planning and logistics, has been standardized.

Field measurement planning: Based on the review of MRV personnels/i1-24/ VVB confirms that field staff undergo refresher training and technology updates, including instruction in the use of field apps and measurement tools. A standardized itinerary and checklist are maintained.

Field data transfer, verification and carbon inventory database:

Based on review of SOPs/06/ and onsite inspection VVB confirms that plot-wise data are transferred into a centralized Excel template embedded with error-checking logic such as conditional formatting and dropdown lists. Data are aggregated into a unified carbon stock monitoring database.

Parameters collected and measured in the field: Based on review of SOPs/06/ and onsite inspection VVB confirms the following:

DBH Measurement: Based on the review of the field protocols described in the PDMR/01/ and SOP documentation, the VVB confirms that Diameter at Breast Height (DBH) is calculated from girth measurements taken at 1.37 meters above ground using tailor's tape. A standardized measuring stick is used in the field to ensure consistent height reference. The conversion formula DBH = Girth / 3.14 is applied across all sampled trees, aligning with common forestry practice.

Tree Height Measurement: Tree height is estimated using a Suunto clinometer. The observer visually aligns the instrument at a 45° angle to the treetop and adjusts positioning accordingly to obtain an accurate reading. The procedure is applied consistently across all permanent sample plots, and the VVB considers it methodologically appropriate for the project scale.

Soil Organic Carbon (SOC) Applicability – AR-Tool 16: VVB confirms that the field conditions and practices observed are consistent with the applicability conditions of AR-Tool 16. Litter is retained on-site, soil disturbance is limited to initial planting, and no repetitive disturbance occurs within a 20-year period. Planting follows land contours, consistent with appropriate soil conservation practices. These conditions support the application of AR-Tool 16 .

Procedures for internal auditing and QA/QC

Based on the review of project documentation/01/ and SOPs/06/, VVB confirms that the Project Proponent (PP) has developed and implemented a comprehensive QA/QC plan in line with IPCC GPG for LULUCF (page 4.111). The plan covers critical aspects of monitoring including field measurement reliability, method verification, data entry and analysis validation, and long-term data archiving. These procedures are crucial for ensuring transparency, accuracy, and the integrity of the monitoring system throughout the project's lifecycle.

Procedures to ensure reliable field measurements

Based on review of SOPs[/06/] and onsite inspections VVB confirms that the PP has established a robust system for collecting reliable field data. Field staff are thoroughly trained in data collection and analysis, following SOPs/06/ that outline detailed field measurement procedures and documentation for verification. Test plots are used as needed, with standardized methods. Team members are documented, certified by the project lead, and new staff receive adequate training to ensure consistency and accuracy.

Procedures to verify field data collection

Based on review of SOPs[/06/] and onsite inspections confirms that to verify the accuracy of field data, VVB confirms that the PP independently remeasures every 10th plot and compares results with the original data. The following quality standards are maintained:

Missed or extra trees: no errors allowed

Tree species or groups: no errors allowed

DBH measurements: within ±0.5 cm or 3%, whichever is greater

Height measurements: within +10% and -20%

Additionally, 10–20% of plots are checked at the end of field campaigns. Any discrepancies found are corrected and documented. Measurement error rates are calculated based on the proportion of rechecked plots. Data from plots with unresolved issues are excluded from further analysis.

Data maintenance and storage

Based on review of SOPs[/06/] and onsite inspections VVB confirms that the PP maintains robust data storage procedures, archiving all field data, GIS, models, and reports in both paper and digital formats. Data is securely backed up on external drives, with duplicates stored separately to prevent loss. Periodic updates and format conversions ensure long-term accessibility, and data copies are shared with stakeholders for transparency and redundancy.

VVB based on the review of monitoring plan in VCS Joint PD & MR[/01/], the monitoring team[/05/] 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/].

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 in compliance with the VCS standard requirements. The VVB reviewed the Non-Permanence Risk Report[/04/] 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
INTERNAL RISK	**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 project ecological region without any adverse effects. Therefore, VVB confirms that the requirements of section 2.2.1(3) of AFOLU Non-Permanence Risk Tool v4.2[/04/]. Since it is the project's 1st validation and verification as 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[/05/] 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 the management plan[/06/] in pace, 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 CVs[/05/], organization 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[/04/] 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[/04/] confirms Project has secured 40 percent to less than 80 percent of the funding needed to cover the total cash out required before the project reaches breakeven Therefore, a risk score of 1 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:** Mitigation not applied Based on the above assessment mitigation score of -2 and the overall financial viability score of "3" is deemed to be appropriate and acceptable.
	Opportunity Cost	VVB based on review of VCS Non-Permanence risk report[/04/] 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. [/i01-24/]. 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 NPRT requirements and VCS PDMR[/01/], the length of the VCS project activity is 40 years. Based on the review of farmers agreements[/05/11//] and project management plan[/06/] VVB concludes that clause 3 of the agreement clearly states that the farmers have signed to maintain project trees for a period of 40 years. Thus, a 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 18, 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[/i01-24/] confirm that the participating farmers have legal land titles over their lands where they will do the plantation activities. Thus, ownership and resource rights are held by the same entities and no disputes exist over land tenure or ownership user rights. Furthermore, based on the onsite inspection/interviews[/i-1-122/] 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 based on the verification of agreements[/05/] 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 appropriately 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 deemed satisfactory to the VVB.
	Stakeholder Engagement	VVB based on the verification of LSC documents[/07/] and onsite interviews[/i01-24/] 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 and is deemed to appropriate by the VVB.

	Political Risk	As per the VCS Non-Permanence Risk Report[/04/], 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 an 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)**	**Significance:** Based on the review of regional fire data (2001–2023) sourced from Global Forest Watch[/04/23/] and the PRA[/15/], the VVB confirms that fire events in the project area have been historically low in both frequency and severity. Across all four states-Assam, Andhra Pradesh, Bihar, and Karnataka-fire-related tree cover loss was minimal, with no consistent trend of recurring large-scale events. Most plantations are located on cultivated farm plots adjacent to settlements, which limits available fuel and reduces fire spread potential. The event frequency is reasonably classified as once every 25 to <50 years, resulting in a fire risk score of 3. **Mitigation:** VVB, based on on-site interviews[/I1-24/] and supporting documentation[/04/], confirms that the project has established

		fire monitoring and prevention practices. These include local surveillance groups, routine creation of fire belts, regular weeding, and access to basic fire suppression tools. As the plots are closely monitored and actively managed, and based on the project design and mitigation strategy, the risk of significant fire damage is considered low. Therefore, the fire risk score of 0.75 after mitigation is acceptable.
	Pest and Disease Outbreaks (PD)	**Significance:** Based on the PRA survey results[/15/] and onsite interviews with farmers during onsite inspection, VVB confirms that the incidence of pest and disease outbreaks in the project regions—Andhra Pradesh, Assam, Bihar, and Karnataka—is minimal. The areas are characterized as remote, and there are no records or stakeholder-reported events of significant pest or disease-related tree loss in recent decades. As a conservative measure, the PP has classified the frequency of pest or disease outbreaks as once every 50 to <100 years causing Insignificant (less than 5 percent loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event) **to carbon stocks**, which corresponds to a risk score of **1**. This classification is considered acceptable by VVB. **Mitigation:** VVB, based on review of the project management plan[/06/] and stakeholder interviews[/i1-24/] confirms that the project has adopted structured measures to reduce pest and disease risk. These include regular training of field teams to identify early signs of infestations, annual monitoring of tree health, severity evaluation of any outbreaks, and assessment of potential biological control measures. These ongoing practices provide effective early detection and control capability, thereby significantly lowering the risk of widespread impact. Therefore, the total risk score is 0.75 deemed to be acceptable.
	Extreme Weather (W)	Based on the review of regional climatic data and supporting literature[/04/] for the four project states-Assam, Andhra Pradesh, Bihar, and Karnataka-VVB observes that while these regions experience seasonal variability in rainfall, instances of severe drought or extreme weather events remain spatially and temporally inconsistent. Historical trends, including data from peer-reviewed studies and government reports, show that drought events occur intermittently, and their impact varies significantly across

		sub-regions. Assam and Bihar receive high annual rainfall, while parts of Andhra Pradesh and Karnataka have shown localized trends of drought over the past decades. As a conservative estimate, the PP has classified the likelihood of such events as occurring **once every 25 to <50 years**, corresponding to a risk score of **2**, which is acceptable to the VVB. **Mitigation:** VVB confirms, based on the project documentation[/04/06/] and on-site interviews[/I1-24/] that the PP has incorporated several adaptive measures to address extreme weather risks. These include planting a mix of climate-resilient, deep-rooted agroforestry species, which are well-adapted to the agro-climatic conditions of each region. Furthermore, training on soil and water conservation practices such as trenching, bund construction, and check dam preparation has been provided to participating farmers. These measures contribute significantly to improving water retention, soil health, and minimizing the vulnerability of plantations to extreme rainfall or drought. Hence, after multiplying the likelihood significant score with mitigation, the total risk score is 0.25 for extreme weather is considered as appropriate.
	Geological Risk (G)	**Significance:** Based on seismic data for the past decade, VVB notes that regions such as Assam and Bihar show higher frequencies of seismic activity, falling within Seismic Zones V and IV, respectively. Assam recorded an average of 72 earthquakes/year and Bihar 92 earthquakes/year (magnitude ≥ 4). However, the majority were low-magnitude events with no recorded impact on project-type land uses. Andhra Pradesh and Karnataka fall largely under lower-risk seismic zones (II and III), with significantly fewer events (1–2 per year). Across all regions, high-magnitude seismic events are rare and show no consistent trend of damage to agroforestry landscapes. The project has conservatively assigned a **recurrence interval of 25 to <50 years** as the earthquakes are frequent in the project area but the probability of affecting the carbon stock is Insignificant (less than 5 percent loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event). Hence, significance score of 1 is acceptable to VVB. **Mitigation:** Based on PRA results[/15/], literature[/23/] and stakeholder interviews[/i1-24/], VVB confirms that no

		earthquake-related impacts have been reported on project plots historically. During onsite inspections, the VVB also independently verified with farmers that there was no recollection of any historical damage to their lands from seismic events. As such, geological risk remains low and geographically diffuse. No additional structural mitigation is required due to the nature of the project activity (non-infrastructure, agroforestry on private farmland). Therefore, the final risk score of 0.25 for geological risk is considered appropriate
	Total Natural Risk (F + PD + W + G + ON)	In conclusion, VVB confirms that the total natural risk for the VCS project gives 1.96, which is deemed appropriate and valid.

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

	Risk Category	Rating
a)	Internal risk	18
b)	External risk	0
c)	Natural Risk	1.96
Overall risk rating (a + b + c)		20.00

In total, the project faces minor risks and if certain risks are there, mitigation measures are in place. In the opinion of VVB, the overall project plantation and management is sound and reasonable. Thus, the VVB concludes that the applied risk score of 20% is adequate for the project activity is appropriate and valid in line with the requirements of the AFOLU NPRT[/B01/] and VCS standard[/B01/].

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

Implementation Status	Assessment steps, evidence checked, & conclusion:
Project implementation	VVB, based on the on-site inspection[/i01-24/] and supporting documents[/1-25/] 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 2019 to 2024 have been considered. The total project area is 1948.41 for the first project activity instance in the state of Assam, Andhra Pradesh, Bihar and Karnataka in India and grouped project boundary for future PAIs is restricted to these four states. 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/i01-24/ 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 2019 to 2024 have been considered. The total project area is 1948.41 hectares which is distributed in the four states Assam, Andhra Pradesh, Bihar and Karnataka. 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/i01-24/ 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 /i01-24/ 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 Dimeter (CD)/Diamet	Raw data sheets	VVB has reviewed measurement approach followed by MRVs for measuring collar diameter and

<table>
<tr><td>er at breast Height (DBH)</td><td></td><td>DBH of the trees as given in the VS PDMR[/01/] during onsite inspections[/i1-24/]. The approach applied is taken from documented literature and is considered valid to the VVB. Moreover, VVB cross checked the raw data sheets and no discrepancy was found between raw data sheets during VVB's own field measurements for the visited plots.</td></tr>
<tr><td>Tree Height (H)</td><td>Suunto Clinometer</td><td>VVB confirms that Suunto clinometer is a reliable device which can be used for measuring tree heights accurately.</td></tr>
<tr><td>Area, Ai</td><td>1948.41ha[/03/]</td><td>VVB based on the review of Ex post sheets[/02/] and KML files[/03/] provided confirms that the project area is accurately defined in line with the VCS standard requirements.</td></tr>
<tr><td>Standard Deviation</td><td><table>
<tr><th>Stratum</th><th>Std. dev (t.d.m/ha)</th></tr>
<tr><td>2019 Mango</td><td>12.1765</td></tr>
<tr><td>2020 Mango</td><td>11.4975</td></tr>
<tr><td>2021 Mango</td><td>10.682</td></tr>
<tr><td>2022 Mango</td><td>8.043</td></tr>
<tr><td>2023 Mango</td><td>3.654</td></tr>
<tr><td>2024 Mango</td><td>3.01</td></tr>
<tr><td>2019 Mixed</td><td>16.961</td></tr>
<tr><td>2020 Mixed</td><td>14.364</td></tr>
<tr><td>2021 Mixed</td><td>12.292</td></tr>
<tr><td>2022 Mixed</td><td>8.4875</td></tr>
</table></td><td>VVB based on the review of EX post sheets[/02/] confirms that the values of standard deviation applied are accurate.</td></tr>
</table>

	<table><tr><td>2023 Mixed</td><td>7.0385</td></tr><tr><td>2024 Mixed</td><td>5.796</td></tr></table>	
Survival Rate	Field measurements	Based on the information provided in the VCS PDMR[/01/] and the Project Implementation and Management Plan[/12/], VVB finds that the PP has adequately justified the assumed 90% tree survival rate. The PP has established a structured mortality monitoring system, including assessments at 12- and 24-months post-planting, supported by a two-round replanting ("blanking") process and final survival checking after 2 years of planting and subsequently at each monitoring event. The project includes active farmer engagement, training, and a responsive sapling replacement mechanism. Although the project targets full survival, a conservative 90% rate has been applied in the carbon accounting. Given the documented procedures and conservative approach, VVB considers the assumption reasonable.
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, adopted from the host country literatures and have been taken from published

		studies[22b]. Therefore, there use for biomass measurements is acceptable to VVB. Further assessment on the equations applied provided in the section 3.4.8 of this report.
BGB (Root-to-Shoot Ratio)	0.25. AR Tool 14- Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities	PP applied a default value of 0.25 as per tool 14 requirements. Thus, VVB considers this value acceptable under the applied methodology.
Allometric Equation	Mango: Biomass, carbon stocks estimation and predictive modeling in mango based land uses on degraded lands in Indian Sub-Himalayas Guava:https://www.currentscience.ac.in/Volumes/120/10/1627.pdf *Citrus spp.:* https://www.fao.org/4/W4095E/w4095e06.htm#3.1.1%20general%20equation *Syzygium cumini:* Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134 *Swietenia macrophylla:* Development and Evaluation of Species-Specific Biomass Models for Most Common Timber and Fuelwood Species of Bangladesh (scirp.org) *Tamarindus indica:* Brown, S. 1997. Estimating biomass and biomass change of tropical	The detailed assessment on the application of allometric equations is provided in the above section 3.4.8 of this report. The allometric equations used for species are as follows: M. indica - Y=0.20*Collar Diameter^1.85 P. guajava - Y=(3.264X^1.012) +3.446 Citrus spp.- Y=10^(-0.535+log10*(BA)) *Syzygium cumini-* Y=exp (1.996+2.32 n DBH) *Swietenia macrophylla –* Y= exp (-2.302+0.894 Ln(D^2*H)

	forests: a primer. FAO Forestry Paper 134	*Tamarindus indica* - Y= exp (-1.996 + 2.32 In DBH)
	Eucalyptus spp.: Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134	*Eucalyptus spp.* - AGB=0.493*DBH^1.81
	Machilus gamblei: Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134 http://www.fao.org/docrep/W4095E/W4095E00.htm	*Mannchilus gamblei* - Y= exp (-1.996 + 2.32 1n DBH)
	Areca catechu: Allometric Equation for Biomass models for estimating carbon storage in Areca palm plantations - ScienceDirect	*Areca catechu* - AGB=exp((LN(-1.853+0.728*LN(DBH^2*H))
	Gmelia arborea: https://doi.org/10.3390/land10040387	*Gmelia arborea AGB=* 0.18*D^2.16*1.32
	Tectona grandis: https://www.researchgate.net/profile/KaushalendraJha/publication/276139353_Carbon_storage_and_sequestration_rate_assessment_and_allometric_model_development_in_young_teak_plantations_of_tropical_moist_deciduous_forest_India/links/56ab22aa08aed814bde76a4e/Carbon-storage-and-sequestration-rate-assessment-and-allometric-model-development-in-young-teak-	*Tectona grandis - Y= 0.4989 X^2-0202 X -21.971*

	plantations-of-tropical-moist-deciduous-forest-India.pdf?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19 *Dalbergia sissoo:* https://www.researchgate.net/publication/305905765_BIOMASS_AND_CARBON_STORAGE_IN_TREES_GROWN_UNDER_DIFFERENT_AGROFORESTRY_SYSTEMS_IN_SEMI_ARID_REGION_OF_CENTRAL_INDIA?enrichId=rgreq-8112f807ee5d6a14ab0c0f6760387827-XXX&enrichSource=Y292ZXJQYWdlOzMwNTkwNTc2NTtBUzozOTE5NDAzNDU0ODMyNjVAMTQ3MDQ1NzI2ODYyNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf *Annacardium occidental*: https://www.discoveryjournals.org/discovery/current_issue/v55/n285/A4.pdf?	*Dalbergia sissoo* – TB=0.904*DBH^1.760 *Annacardium occidental* AGB= 0.8450 x (dbh^2)^0.8873 VVB has reviewed the referenced literature and considers the

		equations suitable for measuring biomass for the given species.
Volumetric Equation	*Cocos nucifera:* A study of estimation of growing stock in TOF of Tamil Nadu *Pterocarpus santalinus:* Andhra Pradesh forest Inventary Report,2010 *Terminalia tomentosa:* FSI book nepal bhutan and India,1996	The detailed assessment on the application of volumetric equations is provided in the above section 3.4.8 of this report. *Cocos nucifera* - V = 0.2138-2.949*D+ 12.258*(D^2) *Pterocarpus santalinus* - v^1/2= 0.144504+2.943115*D *Terminalia tomentosa* V= - 0.00012+0.29302*D^2*H 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 and secondary sources .	VVB confirms that the wood density values used for biomass estimation are derived from reliable default sources consistent with IPCC and FAO references. The values applied for the relevant species are as follows: • ***Pterocarpus santalinus (Red Sanders):*** A wood density of **0.44 t/m³** has been applied. This value is sourced from **IPCC 2006 Guidelines, Volume 4, Table 3A.1.9-2** (https://www.fao.org/3/w4095e/w4095e0c.htm) and is

		acceptable under the applied methodology. • ***Cocos nucifera (Coconut):*** The applied density of **0.50 t/m³** is consistent with values listed in the **FAO Wood Density Database** (https://www.fao.org/3/w4095e/w4095e0c.htm), and reflects typical ranges for this species. • ***Terminalia tomentosa :*** A wood density of **0.73 t/m³** is used, which is also supported by the **FAO Wood Density Database** (https://www.fao.org/3/w4095e/w4095e0c.htm), and is appropriate for this species. These values are appropriate for the respective species and are acceptable under the applied methodology.
BEF	1.57	VVB confirms that Value from Kishwan et al - Emission removal capability in India for India's forests[/23/]. This value is widely accepted as well as provides conservative estimates for BEF according to Indian context.
SOC	CDM AR-Tool 16	VVB confirms that the applied default value of 0.8 tC/ha/yr for project in line with the applied methodology requirement is deemed 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[/i01-24/] and fire assessment report[/04/] 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 7380 tCO_2e.

VVB assessment on the Allometric and Volumetric Equations applied as follows:

The current PAI-1 is implemented across Andhra Pradesh, Assam, Bihar, and Karnataka. Among the planted species, mango accounts for more than 50% of the total plantation area, particularly in Andhra Pradesh, Bihar, and Karnataka. Other species are planted only in small area and are limited to one or two states, covering relatively minor areas. PP has revised some equation as well as provided the applicability of these equations as per the CDM AR-Tool 17 and 18. The detail Informational about the state wise species (region wise) planted are as follows

State	Species Monitored
Andhra Pradesh and Karnataka (southern Region)	Mango, Tamarindus, Citrus Spp, Sweet Orange, S. grandiflora, Mahogany, Cashew, Guava, Sandal, Areca nut, Jamun, Sissoo/Shisham
Bihar (Eastern Region)	Mango, Guava, Som tree, *G. arborea*, Teak, Sissoo/Shisham

Assam (North Eastern Region	Areca nut, Som tree

Allometric equation

Mango (*Mangifera indica*)- As mentioned above, PAI-1 of the project is implemented in the states of Andhra Pradesh, Assam, Bihar, and Karnataka in India. Mango plantations have been established in Andhra Pradesh, Bihar, and Karnataka, while no mango plantations were implemented in Assam. Geographically, Andhra Pradesh and Karnataka fall under the southern region of India, whereas Bihar is part of the eastern region of the country. For the Biomass calculation of the mango PP has used the following equation

Equation Used:Y=30.40*EXP(-5.07*EXP(-0.26*collar diameter)+ 1.277

Edaphoclimatic comparison between where is the equation is developed and project area: For biomass calculation, PP has applied the equation developed by Naik *et al.* (2019). This equation was formulated using empirical data derived from the destructive harvesting of mango trees at the ICAR Research Centre for Hill and Plateau Region, Ranchi, Jharkhand, which is located within the same host country as the project. While Ranchi lies in the eastern region of India, under PAI-1 mango plantations are implemented both in the southern region (Andhra Pradesh and Karnataka) and the eastern region (Bihar**).**

Edaphoclimatic Conditions comparison between where the equation developed are and project area:

Parameter	**India – Eastern Region (**Note-Both Ranchi and Bihar come in eastern region)	**India – Southern Region**
Climate zone	Subtropics to Tropics	Subtropics to Tropics
Latitudes	27°10′ N to 18°7′ N	28°10′ N to 8°5′ N
Distance to equator	2,000 – 3,000 km	900 – 3,100 km
Daytime maximum temperature	32.60 °C	32.10 °C
Daily low temperature	21.90 °C	23.20 °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

This study highlights that the research was conducted on mango orchards with covering trees with varying collar diameters. A total of 30 trees were destructively harvested, and the resulting allometric equation demonstrated a strong correlation with an R^2 value greater than 0.85. Based on these attributes, the equation is considered area-specific and species specific, having been developed under similar edapho-climatic conditions within the same host country. Therefore, it is applicable under paragraph 6 with the required conditions “C” of the AR Tool-17 duly satisfied.

2. **Guava (*Psidium guajava*):-** Guava plantations have been established in Andhra Pradesh, Bihar, and Karnataka, while no guava plantations were undertaken in Assam. From a geographical perspective, Andhra Pradesh and Karnataka are located in the southern region of India, whereas Bihar lies in the eastern region of the country. For the purpose of biomass estimation of guava, the PP has revised and applied the following equation.

Equation Used-=: $Y = 3.264 \times X^{1.012} + 1.643$

Edaphoclimatic comparison between where is the equation is developed and project area: This equation developed by Naik S.N. *et al*. (2021), which is specifically tailored for guava. This equation was derived from empirical data obtained through the destructive harvesting of guava trees at the ICAR-System Research Centre for Hill and Plateau Region, Ranchi, Jharkhand which is in the same host country of the project. While Ranchi is located in the eastern region of India, the PAI-1 project is implemented in southern and eastern India. Despite the geographic difference, both regions exhibit similar edapho-climatic conditions in terms of temperature ranges, humidity levels, and seasons are broadly comparable, making the application of this equation relevant. There is small difference in in rainfall amount, and soil type. However, in both – i.e., the project area and the paper's study area, guava plantations are managed as plantations/orchards with controlled spacing, pruning, and irrigation practices. This management minimizes differences that might otherwise arise from local rainfall, further supporting applicability of the equation. A detailed comparison of the site-specific conditions and their similarity is provided in the table below-

Edaphoclimatic Conditions comparison between where the Equation is developed and project area:

Parameter	**India – Eastern Region Note**-(Both Ranchi and Bihar come in eastern region)	**India – Southern Region**
Climate zone	Subtropics to Tropics	Subtropics to Tropics
Latitudes	27°10′ N to 18°7′ N	28°10′ N to 8°5′ N
Distance to equator	2,000 – 3,000 km	900 – 3,100 km
Daytime maximum temperature	32.60 °C	32.10 °C
Daily low temperature	21.90 °C	23.20 °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

It is based on destructive sampling and harvesting of 30 guava trees, and the resulting regression model showed a high R^2 (0.92), Given these attributes, the equation is regarded as both area-specific and species specific, as it was developed under similar edapho-climatic conditions within the same host country. Accordingly, it meets the applicability criteria outlined in Paragraph 6 of the AR Tool-17, with Condition (C) duly fulfilled.

3. **Areca nut (*Areca catechu*)-** PAI-1 of the project is carried out in the states of Andhra Pradesh, Assam, Bihar, and Karnataka in India. Areca nut plantations have been established in Karnataka and Assam. From a geographical perspective, Karnataka are located in the southern region of India, whereas Assam in the North-eastern region of the country. For the purpose of biomass estimation of areca nut, the PP has revised and applied the following equation

Equation Used-=: AGB=EXP(LN(-1.853+0.728*LN(DBH^2*H)

Edaphoclimatic comparison between where is the equation is developed and project area: For the biomass calculation of Areca nut, PP has applied the allometric equation developed by Das *et a*l. (2021). This equation was derived through destructive harvesting of Areca nut trees in Karimganj district, Assam. In PAI-1, Areca nut plantations are implemented in both Assam and Karnataka. For Assam, the equation is directly applicable as it was developed in the same condition. A detailed comparison of these conditions is provided below

Edaphoclimatic Conditions comparison between where the Equation is developed and project area:

Parameter	India (North Eastern)	India (Southern)
Climate zone	Subtropics to Tropics	Subtropics to Tropics
Latitude	27° 34′ N to 22° 30′ N	28° 10′ N to 8° 5′ N
Distance to equator	2,500 – 3,100 km	900 – 3,100 km
Daytime max. temperature	29.8 °C	32.1 °C
Daily low temperature	20.1 °C	23.2 °C
Humidity	77 %	72 %
Annual Precipitation	2,300 mm	1,632 mm
Rain days	128.4 days	91.2 days
Sunshine hours	1,862 hrs	2,263 hrs

Das *et al*. (2021) harvested 40 trees for analysis, and the resulting equation achieved an R^2 value of 0.859. Given these attributes, the equation is considered species specific and it was developed under comparable edapho-climatic conditions within the same host country. Therefore, it meets the applicability criteria outlined in Paragraph 6 of the AR Tool-17, with Condition (c) duly satisfied.

4. Mahoghany (*Swietenia macrophylla*)-PAI-1 of the project is implemented across the states of Andhra Pradesh, Assam, Bihar, and Karnataka in India. Mahogany plantations have been established in Andhra Pradesh and Bihar. Geographically, Andhra Pradesh lies in the southern region of the country, whereas Bihar is located in the eastern region. For biomass estimation of mahogany, the PP has applied the following equation:

Equation Used-=: Y= exp (-2.302+0.894 Ln(D2*H)

Edaphoclimatic comparison between where is the equation is developed and project area: The allometric equation applied in the PAI-1 project was originally developed in Bangladesh by Mahmood Hossain et al. (2021). In this study, sampled trees were collected during 2018 from natural patches and plantations located within tropical wet evergreen, semi-evergreen, and tropical moist deciduous forests of Bangladesh. To establish its suitability, a detailed edapho-climatic comparison between the region where the equation was developed and the project area where it is being applied has been provided below.

Parameter	Bangladesh (Equation Developed)	India – Eastern Region	India – Southern Region
Climate zone	Subtropics to Tropics	Subtropics to Tropics	Subtropics to Tropics
Latitudes	26° 20′ N to 20° 52′ N	27°10′ N to 18°7′ N	28°10′ N to 8°5′ N
Distance to equator	2,300 – 2,900 km	2,000 – 3,000 km	900 – 3,100 km
Daytime maximum temperature	31.0 °C	32.60 °C	32.10 °C
Daily low temperature	21.6 °C	21.90 °C	23.20 °C
Humidity	74 %	68 %	72 %
Precipitation	2,347 mm	1,511 mm	1,632 mm
Rain days	130.8 days	92.4 days	91.2 days
Hours of sunshine	2,044 hrs	1,825 hrs	2,263 hrs

For mahogany, the allometric equation was derived through destructive sampling and harvesting of more than 30 trees, with the resulting regression model achieving an R^2 greater than 0.85. These attributes confirm that the equation is both area-specific and species specific, having been developed under same edapho-climatic conditions comparable to those of the project area within the neighboring country. Accordingly, it satisfies the applicability requirements stipulated under Paragraph 6 of the AR Tool-17, with Condition (c) duly fulfilled.

5. Som Tree (*Machilus gambeli*)- PAI-1 of the project is being implemented across the states of Andhra Pradesh, Assam, Bihar, and Karnataka in India. Som tree plantations have been established in Assam and Bihar. Assam is located north eastern region while Bihar in eastern region of the country.

Equation Used-=: Y=(0.18*D^2.16)*1.32

Edaphoclimatic Conditions comparison between where the Equation is developed and project area: -For the Som tree biomass calculation, PP has applied the allometric equation developed by Nath *et a*l. (2019). This generalized biomass equation developed by using harvest data from diverse forest types, including tropical semi-evergreen, tropical wet evergreen, sub-tropical broad-leaved, and sub-tropical pine forests. For the development of these equations, Nath *et al.* (2019) harvested a total of 303 sample trees, representing four major forest types that together account for over 90% of the forest cover in the region. The detailed group of harvested species, provided in the footnote, also includes the Som tree, thereby reinforcing the equation's relevance. As per the mentioned Som tree plantations have been established in Assam and Bihar. Both this same regions come under where the tree is harvested for the equation developed.

Allometric equation was derived through destructive sampling and harvesting of more than 30 trees, with the resulting regression model achieving an R^2 greater than 0.85 (rated by Nath *et al*). These attributes confirm that the equation is both area-specific and group of species specific, having been developed under edapho-climatic conditions comparable to those of the project area within the same host country. Accordingly, it satisfies the applicability requirements stipulated under Paragraph 6 of the AR Tool-17, with Condition (c) duly fulfilled.

6. Sissoo- (*Dalbergia sissoo)*- PAI-1 of the project is implemented across the states of Andhra Pradesh, Assam, Bihar, and Karnataka in India. Sissoo plantations have been established in Andhra Pradesh and Bihar. Geographically, Andhra Pradesh lies in the southern region of the country, whereas Bihar is located in the eastern region. For biomass estimation of mahogany, the PP has applied the following equation:

Equation Used-=: TB =0.904*D^1.760

Edaphoclimatic comparison between where is the equation is developed and project area: The PP has used the allometric equation developed by Newaj et al. (2016) for biomass calculation. This equation was developed through destructive sampling and harvesting of trees under rainfed conditions at the experimental field of the Central Agroforestry Research Institute (CAFRI), Jhansi. The site represents the Central Plateau region of India. A detailed edapho-climatic comparison between the equation development site and the project area is provided below:

Parameter	India – Central (Jhansi) Equation is developed	India – Eastern Region	India – Southern Region
Climate zone	Subtropics to Tropics	Subtropics to Tropics	Subtropics to Tropics
Latitudes	30° 49′ N to 18° 22′ N	27°10′ N to 18°7′ N	28°10′ N to 8°5′ N
Distance to equator	2,000 – 3,400 km	2,000 – 3,000 km	900 – 3,100 km
Daytime maximum temperature	31.90 °C	32.60 °C	32.10 °C
Daily low temperature	19.30 °C	21.90 °C	23.20 °C
Humidity	58 %	68 %	72 %
Precipitation	1,212 mm	1,511 mm	1,632 mm

Rain days	73.2 days	92.4 days	91.2 days
Hours of sunshine	2,555 hrs	1,825 hrs	2,263 hrs

The allometric equation applied is species-specific and developed based on destructive sampling. In total, 42 trees were harvested, ensuring an adequate and representative sample size. The regression model demonstrated a very high coefficient of determination ($R^2 = 0.99$), indicating strong predictive accuracy and statistical reliability. These attributes confirm that the equation is both area-specific and scientifically reliable, having been developed under edapho-climatic conditions comparable to those of the project area within the same host country. Accordingly, it satisfies the applicability requirements stipulated under Paragraph 6 of the AR Tool-17, with Condition (c) duly fulfilled.

7. Citrus, Sweet orange and Cashew-PAI-1 of the project is implemented across the states of Andhra Pradesh, Assam, Bihar, and Karnataka in India. Citrus, sweet orange, and cashew plantations have been established in Andhra Pradesh and Karnataka. Both of these states fall under the dry regions of India, characterized by semi-arid to dry sub-humid climatic conditions. Due lack of species specific data, for these species PP has appropriately utilized a biomass equation developed on a large scale, considering 191 various species and a total of 371 trees. The equation is used taking the climatic zone in consideration. However, this common equation tends to give underestimation of biomass conservatively. Several projects have also used common equation, and which has been accepted by Verra. For Biomass calculation the following equation used

Equation Used-=: Y =10^{-0.535+log10 (BA)}

Edaphoclimatic comparison between where is the equation is developed and project area: The allometric equation developed by Martínez-Yrizar *et al*. (1992) is used for estimating the aboveground biomass of trees in tropical dry forest ecosystems. This equation was developed based on empirical data collected from the destructive harvesting of 191 various species (n=371) in dry forests. It is specifically designed for use in dry zones. For Citrus, Sweet orange and Cashew, this equation is appropriate because the species is predominantly cultivated in arid and semi-arid regions in PAI-1. These areas are characterized by semi-arid climates with less annual rainfall consistently directly corresponding to the edapho-climatic conditions under which the Martínez-Yrizar *et al.* equation was developed. This is the area specific and Group of species-specific equation as well this equation meets the conditions outlined under Condition (c) of Paragraph 6 of CDM Tool 17, as it is based on a sample size greater than 30 and demonstrates a high R^2 (0.94).

- *No. sample – 371 trees, R^2:0.94*

Volumetric Equations

1. Tamarind (*Tamarindus indica*)-Tamarind plantation has been implemented in the state of Karnataka and Andhra Pradesh state as a part of PAI-1. Geographically, Andhra Pradesh and Karnataka fall under the southern region of India.

Equation Used: $V = 0.131-1.87132*D+9.47861*D^2$ (ISFR, 2023 Page: 303)

Edaphoclimatic comparison and equation applicability: For the purpose of biomass estimation, PP has employed the volumetric equation developed by the Forest Survey of India (FSI) to calculate the volume of tree species in Tamil Nadu. This equation is widely used in forest biomass inventory programs across the state. Karnataka, Andhra Pradesh, and Tamil Nadu are all part of peninsular India and share similar soil types i.e., Red and Black Soil Types, which are conducive to the cultivation of tamarind (*Tamarindus indica*) a practice already prevalent among farmers in Karnataka and Andhra Pradesh, similar to Tamil Nadu. Furthermore, according to the Köppen-Geiger climate classification, peninsular India is characterized by tropical monsoon and hot semi-arid climates, indicating similar climatic conditions across these regions.

The species-specific volumetric equation developed for Tamil Nadu has been applied, as the edapho-climatic conditions of Tamil Nadu are comparable to those of Andhra Pradesh and Karnataka, where the plantations are located. The equation was derived from trees growing under similar climatic and ecological conditions, thereby ensuring its suitability for the project region. Furthermore, this equation has been recognized and applied in the National Forest Inventory. As per the requirements of AR-CDM Tool-18 (Section 5 and 5a) this applicable.

2. Teak (*Tectona grandis*): - Teak plantation has been implemented in the Bihar state as a part of PAI-1. Geographically, Bihar fall under the eastern region of India.

Equation Used: $V = 0.08847-1.46936*D+11.98979*D^2+1.970560*D^3$ (ISFR 2023, Page 304)

For the purpose of biomass estimation, the PP has employed the volumetric equation developed by the Forest Survey of India (FSI) to calculate the volume of tree species in Uttar Pradesh.

Edaphoclimatic comparison and equation applicability: Bihar and Uttar Pradesh are both part of the Gangetic Plain in India and share similar soil types (Raychaudhuri et al., 2014). Moreover, teak (*Tectona grandis*) is naturally distributed across these states, further supporting the applicability of species-specific biomass estimation. According to the Köppen-Geiger climate classification, the Gangetic Plains, including Bihar and Uttar Pradesh, are characterized by a monsoon-influenced humid tropical climate, indicating comparable climatic conditions across these regions.

The volumetric equation developed for Uttar Pradesh is scientifically applicable for estimating volume of Teak in Bihar as well and, consequently, qualifies as species-specific in accordance with the National Forest Inventory criteria under the AR CDM Tool-18 (Section 5 and 5a).

3.Jamun (*Syzygium cumini*) Jamun (*Syzygium cumini*) plantation has been implemented in the states of Karnataka and Andhra Pradesh as a part of PAI-1 of the project.

Equation Used: $\sqrt{V} = 0.30706+5.12731*D-2.0987*\sqrt{D}$ (ISFR 2023, Page: 299, for Karnataka)

These equations are widely applied in forest biomass inventory programs across the states of Andhra Pradesh and Karnataka.

As the equations are developed specifically for *Syzygium cumini* (jamun) and are officially used in the National Forest Inventory, they qualify as species-specific equations and, therefore, comply with the requirements of the AR CDM Tool-18 (Section 5 and 5a).

4. Gamhar (*Gmelina arborea*) -Gamhar plantation has been implemented in the Bihar state as a part of PAI-1. Geographically, Bihar fall under the eastern region of India. For the Biomass calculation of the Teak, PP has used the following Volume equation for the biomass calculation which is developed for the Assam state of India:

Equation Used: $V = 0.1156+0.21230*D+5.10448*D^2$ (ISFR 2023, Page: 296)

For the purpose of biomass estimation, the Project Proponent (PP) has employed the volumetric equation developed by the Forest Survey of India (FSI) to calculate the volume of Gamhar (*Gmelina arborea*) in Assam. This equation is widely used in forest biomass inventory programs within the state.

Edaphoclimatic comparison and equation applicability:

Bihar, located in the eastern part of India and forming a part of the Gangetic Plain, and Assam, located in the northeastern region, share comparable edaphoclimatic conditions. According to the Köppen-Geiger climate classification, both regions are characterized by a monsoon-influenced humid tropical climate. With respect to soil, Assam comprises mainly alluvial and red soil types, while Bihar is predominantly alluvial (Kumar et al., 2020). Moreover, the natural distribution of Gamhar spans Assam, northern Bengal, Bihar, and Odisha (Dogra and Kaushik, 2022), reinforcing the scientific validity of applying species-specific equations across these states.

The volumetric equation of Gamhar developed for Assam is scientifically applicable for estimating biomass in Bihar and, consequently, qualifies as species-specific in accordance with the National Forest Inventory criteria under the AR CDM Tool-18 (Section 5 and 5a).

5. Red Sander (*Pterocarpus santalinus*) -Red Sander plantation has been implemented in the state of Karnataka and Andhra Pradesh state as a part of PAI-1. Geographically, Andhra Pradesh falls under the southern region of India.

Equation Used: $V^{1/2} = - 0.144504+2.943115*D$

Equation applicability: For the purpose of volume estimation, PP has employed the volumetric equation developed by the Andhra Pradesh Forest Department as used to calculate the volume of Red Sander in Andhra Pradesh forest inventory. This equation is widely used in forest biomass inventory programs within the state. As the equation is officially used in the National Forest Inventory programs of the Andhra Pradesh, therefore, comply with the requirements of the AR CDM Tool-18 (5a)

6. Agathi (*Sesbania grandiflora*) - Agathi plantation has been implemented in the state of Andhra Pradesh state as a part of PAI-1. Geographically, Andhra Pradesh falls under the southern region of India.

Equation Used: V = 0.17994-2.78776*D+14.44961*D^2 (AP Forest Inventory Report 2010)

Equation applicability: For the purpose of volume and biomass estimation, the PP has employed the volumetric equation developed by the Andhra Pradesh Forest Department as used to calculate the wood volume of Agathi in Andhra Pradesh forest inventory. This equation is widely used in forest biomass inventory programs within the state. As the equation is officially used in the National Forest Inventory, however the equation has not been developed for specifically for Agathi and being used in the forest inventory programs of the Andhra Pradesh, therefore, comply with the requirements of the AR CDM Tool-18 (5a).

VVB conducted a thorough review of the Ex-post calculation sheet[/02/] to verify formulae applied, 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 CO_2 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 thirteen project species[/22/], and a volumetric equation for three species[/22/].

The appropriateness of default values applied in the quantification of carbon removals was assessed for compliance with VCS Program rules[/B01/]. The carbon fraction of biomass (0.47) and root-to-shoot ratio for belowground biomass estimation were cross-checked against IPCC 2006 guidelines. Additionally, SOC default values were reviewed against CDM AR Tool 12 and CDM AR Tool 16[/B01/]. Furthermore, the Biomass Expansion Factor (BEF) of 1.57 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[/B01/] and AR-ACM0003 v2.0[/B02/].
- 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.

Based on above assessment, overall, the VVB confirms the accuracy of GHG removals, including accuracy of spreadsheet formulae, conversions and aggregations, and consistent use of the data and parameters. The data and information flow including any manual transposition were checked and found to be consistent. VVB found a clear audit trail of all the data/information used for the GHG removal calculation. VVB further confirms that all parameters have been used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the formulae laid out in the applied methodology AR-ACM0003 (version 02.0)[/B02/] and requirements of the monitoring plan[/01/].

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[/22/], FAO[/22/], 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[/03/]	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.

Overall, based on the above assessment the VVB confirms that 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

CCIPL has performed the joint validation & verification of the proposed VCS grouped project "GROUPED AGROFORESTRY PROJECT IN VARIOUS STATES 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[/B01/], VCS Program Guide version 4.6[/B01/], VCS Validation and Verification Manual version 3.2[/B01/] and Registration & Issuance Process version 4.3[/B01/], the updated project documentation, the carbon sequestration calculation spreadsheets[/02/], PSP's raw data-sheet[/02/] provided by the PP and on-site inspection[/18//i01-24/], observation by the VVB. The project specific information has been provided in the VCS PDMR as required by the VCS Standard and meets the requirements of the applied baseline and methodology[/B02/]. The monitoring plans described in the proposed project documentation is assessed along with verification activities. VVB gives an unmodified opinion as there are 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[/02/] i.e., constant values for the relevant data and parameters. Based on the review of the Joint VCS PDMR[/01/], carbon calculation spreadsheet[/02/], and relevant supporting evidence (i.e., peer review literature[/22/23/], IPCC default values, species specific research studies[/22/]), 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 30 findings have been raised, which includes 08 Corrective Action Requests (CARs), 21 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.

Crediting Period: 01-July-2019 to 30-June-2049

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.	VVB has reviewed the Ex-ante and Ex post calculation sheets [/02/] and confirms that the average annual emission reductions (ERs) attributed to harvesting species are estimated at 4,075 tCO_2e, which is well below 20% of the total average annual ERs of the project, calculated at 24,194 tCO_2e. Based on these estimated values, VVB confirms that harvesting activities planned over the course of the crediting period will not result in biomass loss exceeding the 20% threshold at any stage. Therefore, in accordance with the VCS Program Definitions v4.5, the project does not meet the criteria for a "harvesting activity." As a result, the Long-Term Average (LTA) requirement is not applicable to this project activity. The project's harvesting plan remains within the acceptable limits, and no further accounting adjustments are required under the LTA provisions.

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

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 VCUs (tCO_2e)	Estimated removal VCUs (tCO_2e)	Estimated total VCU issuance (tCO_2e)
01-Jul-2019 to 31-Dec-2019	0	668	98	134	0	668	535
01-Jan-2020 to 31-Dec-2020	0	3,089	257	586	0	2,929	2,343
01-Jan-2021 to 31-Dec-2021	0	7,199	434	1,353	0	6,764	5,412
01-Jan-2022 to 31-Dec-2022	0	14,004	1,029	2,595	0	12,975	10,380
01-Jan-2023 to 31-Dec-2023	0	21,057	1,548	3,902	0	19,509	15,607
01-Jan-2024 to 31-Dec-2024	0	27,421	1,599	5,164	0	25,822	20,658
01-Jan-2025 to 31-Dec-2025	0	28,460	1,609	5,370	0	26,852	21,481
01-Jan-2026 to 31-Dec-2026	0	26,378	1,609	4,954	0	24,770	19,816
01-Jan-2027 to 31-Dec-2027	0	26,869	1,609	5,052	0	25,260	20,208
01-Jan-2028 to 31-Dec-2028	0	26,447	1,609	4,968	0	24,839	19,871
01-Jan-2029 to 31-Dec-2029	0	25,233	1,609	4,725	0	23,624	18,899

01-Jan-2030 to 31-Dec-2030	0	23,938	1,609	4,466	0	22,329	17,863
01-Jan-2031 to 31-Dec-2031	0	23,717	1,609	4,422	0	22,108	17,687
01-Jan-2032 to 31-Dec-2032	0	24,782	1,609	4,635	0	23,173	18,539
01-Jan-2033 to 31-Dec-2033	0	26,428	1,609	4,964	0	24,819	19,855
01-Jan-2034 to 31-Dec-2034	0	27,168	1,609	5,112	0	25,559	20,447
01-Jan-2035 to 31-Dec-2035	0	21,762	1,609	3,488	0	17,438	13,950
01-Jan-2036 to 31-Dec-2036	0	21,612	1,609	935	0	4,676	3,740
01-Jan-2037 to 31-Dec-2037	0	7,067	1,609	0	0	0	0
01-Jan-2038 to 31-Dec-2038	0	6,160	1,609	0	0	0	0
01-Jan-2039 to 31-Dec-2039	0	29,182	1,609	0	0	0	0
01-Jan-2040 to 31-Dec-2040	0	32,110	1,609	0	0	0	0
01-Jan-2041 to 31-Dec-2041	0	30,656	1,609	0	0	0	0
01-Jan-2042 to 31-Dec-2042	0	30,414	1,609	0	0	0	0

01-Jan-2043 to 31-Dec-2043	0	30,273	1,609	0	0	0	0
01-Jan-2044 to 31-Dec-2044	0	31,022	1,609	0	0	0	0
01-Jan-2045 to 31-Dec-2045	0	32,017	1,609	0	0	0	0
01-Jan-2046 to 31-Dec-2046	0	32,922	1,609	0	0	0	0
01-Jan-2047 to 31-Dec-2047	0	34,153	1,609	0	0	0	0
01-Jan-2048 to 31-Dec-2048	0	35,532	1,609	0	0	0	0
01-Jan-2049 to 30-Jun-2049	0	18,071	802	0	0	0	0
Total	**0**	**725,812**	**44,377**	**66,823**	**0**	**334,115**	**267,292**

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 PDMR; and
- Assessment of whether the provisions made in the monitoring plan were consistently and appropriately applied.

VVB has raised 21 clarification requests (CLs) and 08 corrective action requests (CARs) for this joint validation and 1st Periodic Verification, all of which have been successfully closed. One(01) 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[/02/] is 85,456 tCO2e. The non-permanence risk rating is kept at 20%. So, the VCUs eligible for issuance after deduction of buffer pool credits is 60,980tCO2e (Round down value).

Verification Period: 01-July-2019 to 01 - April-2025

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.	VVB has reviewed Ex ante and Ex post sheets[/02/] and that the average annual emission reductions (ERs) from harvesting species, estimated at 4,075 tCO_2e, remain well below 20% of the total average annual ERs of the project, which are 24,194 tCO_2e. This indicates that harvesting activities, as planned, will not lead to biomass loss exceeding 20% at any stage of the crediting period. As per the VCS Program Definitions v4.5, the project does not meet the threshold for "harvesting activity," and therefore, the Long-Term Average (LTA) accounting requirement is not applicable in this case.
Whether a loss has been appropriately accounted for, in	N/A

accordance with the VCS Program rules, if applicable.	

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

Vintage period	Baseline emissions (tCO_2e)	Project emissions (tCO_2e)	Leakage emissions (tCO_2e)	Buffer pool allocation (tCO_2e)	Reductions VCUs (tCO_2e)	Removals VCUs (tCO_2e)	Total VCU issuance (tCO_2e)
01-July-2019 to 31-Dec-2019	0	7,491	647	1,498	0	6,844	5,346
01-Jan-2020 to 31-Dec-2020	0	14,860	1,283	2,972	0	13,577	10,604
01-Jan-2021 to 31-Dec-2021	0	14,860	1,283	2,972	0	13,577	10,604
01-Jan-2022 to 31-Dec-2022	0	14,860	1,283	2,972	0	13,577	10,604
01-Jan-2023 to 31-Dec-2023	0	14,860	1,283	2,972	0	13,577	10,604
01-Jan-2024 to 31-Dec-2024	0	14,860	1,283	2,972	0	13,577	10,604
01-Jan-2025 to 01-Apr-2025	0	3,664	316	733	0	3,348	2,614
Total	0	**85,456**	**7,380**	**17,091**	0	**78,077**	**60,980**

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-Jul-2019 to 31-Dec-2019	668	7,491	+6.11%	Based on the review of VCS PDMR [/01/], ER Sheets[/02/] and onsite inspection[/i1-24/], VVB concludes that the percent difference in total in total achieved removals and Ex post removals is due to the differences in biomass sequestration reported in reference studies versus actual field observations.
01-Jan-2020 to 31-Dec-2020	3,089	14,860		
01-Jan-2021 to 31-Dec-2021	7,199	14,860		
01-Jan-2022 to 31-Dec-2022	14,004	14,860		
01-Jan-2023 to 31-Dec-2023	21,057	14,860		
01-Jan-2024 to 31-Dec-2024	27,421	14,860		
01-Jan-2025 to 01-Apr-2025	7,096	3,664		
Total	**80,534**	**85,456**		

APPENDIX 1: ABBREVATIONS

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
CCIPL	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

Section	Information	Justification	Assessment method conclusion
Section 1.8 of the PDMR	Land ownership Agreements between the PP and farmer community/05/ • Agreements between the Project developer and PP/12/	PP has considered the land ownership documents, carbon waiver agreements with farmers, and agreements with the PP and developer are considered as the commercially sensitive information in compliance with sections 3.5.2-4 requirements of the VCS standard.	Based on the review of supporting documents/1-25/ provided by PP, VCS PDMR/01/ and through on-site inspection/i1-24/ VVB confirms the following commercially sensitive information has been excluded from the public version of the project description, however provided for the audit team for the verification and documents found to be valid as per verification in line with sections 3.5.2-4 requirements of the VCS standard /B01/: • Land ownership documents/05/17/ • Agreements between the PP and farmer community/05/ • Agreements between the Project developer and PP/12/ • Benefit sharing mechanism/05/12/.
Section 2.3.5 of the PDMR	Benefit sharing mechanism/05/12/	PP has considered the benefit sharing mechanism considered as the commercially sensitive information	

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APPENDIX 3: LIST OF DOCUMENTS

S.NO.	Document Name	Version
01	VCS PDMR- VCS PDMR 3572 01JUL2019-1APR2025	V1.3 24th June 2025 V 2.0 11th November 2025 V2.1 27-January-2026
02	ER Sheets ER ex-ante PAI-1 3572 20062025 1 Ex post PAI-1 20062025 Grouped ex-ante PAI-1 3572 Raw data sheets	20th June 2025
03	KML files I. Forest non forest shapefile data II. KML Files III. Land use land cover shapefile data IV. Map	
04	NPRT 1. NPR report 2. NPRT 3. NPRT Notes 4. Impact assessment report 5. CVs of management team 6. Financial Viability Analysis 7. Natural Risk – Fire 8. Natural risk – Pests and Diseases 9. Natural Risks – Extreme weather 11. Political Risk	

05	Carbon waivers i. Agreements MFI ii. HLTEC iii. WIPES	
06	Management manual and SOPs i. Implementation Plan 3572.docx ii. Plantation Management Manual 3572 iii. SOP 3572	
07	Stakeholder Consultations LSC (Invitation+Attendance+Feedback) Photographs i. Local Stakeholder Consultation Report (HLTEC).docx ii. Local Stakeholder Consultation Report (MFI) iii. Local Stakeholder Consultation Report (WIPES) iv. Minutes of Meeting-3572.	
08	Grievance Records Grievance Register (MFI) Grievance Register (WIPES) Grievances Register 3572 (HLTEC)	
09	Governing Policies Code_of_Conduct Policy on Prevention of Sexual Harassment of Women Posh	
10	Project Start Date proof Nursery Bills- Sridevi Nursery bill.. Andhra Pradesh. Sridevi Nursery bills.... Karnataka. HLTEC Arecanut sapling bill	
11	Double Counting Declaration 3572	
12	Service Agreements	

	Infinite incorporation certificate Service Agreement For HLTEC VCS 3572 Service Agreement For MFI_VCS 3572 (1) Service Agreement_For WIPES Final 3572 (1)	
13	Sapling Distribution Records Sapling Distribution register 3572	
14	Employment Records SDG 5 employment generation 3572 Labour sheet NGO STAFF ENTRY 3572	
15	PRA Report	
16	Soil Evidence Maps	
17	Land Titles	
18	CVs of Management Team	
19	Training Records (SDG 8) Training Attendance Training of Stakeholder (HLTEC) Training of Stakeholder (MFI) Training of Stakeholder (WIPES)	
20	Baseline Scenario and Additionality a) https://www.ijpab.com/form/2018%20Volume%206,%20issue%206/IJPAB-2018-6-6-913-917.pdf b) IJRAR22B3901.pdf c) IJRAR19D1154.pdf d) IJCRT1135801.pdf e) https://krishikosh.egranth.ac.in/server/api/core/bitstreams/8b17186e-2fe0-4e2f-a7a7-cd26008bc13b/content f) (PDF) PROBLEMS OF SMALL FARMERS IN KARNATAKA g) IJRAR1CAP075.pdf	

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i) JETIR2503256.pdf

j) Agricultural Land: Karnataka: Type of Use: Fallow Land: Current fallow | Economic Indicators | CEIC

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m) Andhra Pradesh | ICAR

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o) Bihar | ICAR

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q) AKSH_804__Agriculture__2022.pdf

r) Agriculture challenges of Bihar

s) Assam Livelihoods – The Scenario | Assam State Rural Livelihoods Mission (ASRLM) | অসম চৰকাৰ, India

t) Agricultural Lending Schemes: A study on primary agriculture co-operative credit societies (PACS) In Karnataka

u) State/UT-wise Details of Average Amount of Outstanding Loan per Agricultural Household and Percentage of Indebted Agricultural Households during 2019 | Open Government Data (OGD) Platform India

v) https://www.fao.org/4/y4744e/y4744e03.htm

w) AR_2018-19_Final_Print.pdf

x) Barriers to plantation activities in different agro-ecological zones of Southern India

y) https://www.researchgate.net/profile/Prashant-Sharma-75/publication/337167646_Agroforestry_systems_Opportunities_and_challenges_in_India/links/5dc9719092851c8180466279/Agroforestry-systems-Opportunities-and-challenges-in-India.pdf

z) 8185.pdf

aa) https://doi.org/10.71097/IJSAT.v16.i3.8185

bb) A study on temporal variation of land use pattern in Karnataka through indices cc) (PDF) POLICY AND FINANCIAL SUPPORT FOR AGROFORESTRY DEVELOPMENT: INCENTIVES, PROGRAMS, AND MARKET OPPORTUNITIES

dd) .(PDF) Agroforestry and Carbon Sequestration

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aaa) Agroforestry in an Indian Context: Limitations and its Potential

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fff) View of Enhancing Agriculture Resilience to Climate Change: Insights from NICRA in Lakhimpur, Assam, India

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~~Growth model: -~~

b). Allometric Equations used:

i. Mango: Y=0.20*Collar Diameter^1.85

Biomass, carbon stocks estimation and predictive modeling in mango based land uses on degraded lands in Indian Sub-Himalayas

ii. Guava: Y= (3.264X^1.012) + 3.446 https://www.currentscience.ac.in/Volumes/120/10/1627.pdf

iii. Citrus spp.:Y=10^(0.535+log10*(BA))

iv. https://www.fao.org/4/W4095E/w4095e06.htm#3.1.1%20general%20equation_Jamun : Y= exp (1.996+2.32 n DBH)

Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134

v. Mahogony: Y= exp (-2.302+0.894 Ln(D^2*H)

Development and Evaluation of Species-Specific Biomass Models for Most Common Timber and Fuelwood Species of Bangladesh (scirp.org)

vi. Tamarind: Y= exp (-1.996 + 2.32 In DBH)

Brown, S. 1997. Estimating biomass and biomass change of tropical forests: a primer. FAO Forestry Paper 134

vii. Eucalyptus spp.: AGB=0.493*DBH^1.81

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viii. Som tree: Y=exp (-1.996 + 2.32 ln DBH)

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Paper 134 http://www.fao.org/docrep/W4095E/W4095E00.htm

ix. Areca nut: AGB=exp((LN(-1.853+0.728*LN(DBH^2*H))

Biomass models for estimating carbon storage in Areca palm plantations - ScienceDirect

x. Gambar: AGB= 0.18*D^2.16*1.32

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xi. Teak: Y= 0.4989 X^2-0202 X -21.971

https://www.researchgate.net/profile/KaushalendraJha/publication/276139353_Carbon_storage_and_sequestration_rate_assessment_and_allometric_model_development_in_young_teak_plantations_of_tropical_moist_deciduous_forest_India/links/56ab22aa08aed814bde76a4e/Carbon-storage-and-sequestration-rate-assessment-and-allometric-model-development-in-young-teak-plantations-of-tropical-moist-deciduous-forest-India.pdf?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19

xii. Shisham: TB=0.904*DBH^1.760

https://www.researchgate.net/publication/305905765_BIOMASS_AND_CARBON_STORAGE_IN_TREES_GROWN_UNDER_DIFFERENT_AGROFORESTRY_SYSTEMS_IN_SEMI_ARID_REGION_OF_CENTRAL_INDIA?enrichId=rgreq-8112f807ee5d6a14ab0c0f6760387827-XXX&enrichSource=Y292ZXJQYWdlOzMwNTkwNTc2NTtBUzozOTE5NDAzNDU0ODMyNjVAMTQ3MDQ1NzI2ODYyNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf

xiii. Cashew: AGB= 0.8450 x (dbh^2)^0.8873

https://www.discoveryjournals.org/discovery/current_issue/v55/n285/A4.pdf?

c). Volumetric Equations Used:

	i. Coconut: V = 0.2138-2.949*D+ 12.258*(D^2) A study of estimation of growing stock in TOF of Tamil Nadu ii. Red sander: v^1/2= 0.144504+2.943115*D Andhra Pradesh forest Inventary Report,2010 iii. Asan: V= - 0.00012+0.29302*D^2*H FSI book nepal bhutan and India,1996 d). Wood Density Red Sander: (0.44) As per the IPPC default value, Tale 3.19 Coconut: (0.50) https://www.fao.org/4/w4095e/w4095e0c.htm *Terminalia tomentosa*:0.73 https://www.fao.org/3/w4095e/w4095e0c.htm e). Root to shoot ratio (0.25) AR Tool 14- Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities f). Carbon Fraction (0.47) AR Tool 14- Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities g). BEF (1.57) (PDF) Emission Removal Capability of India's Forest and Tree Cover h). ~~Leakage Parameters:~~	
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1.14 Conditions prior to project Initiation

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1.15 Compliance with Laws, Statutes and Other Regulatory Frameworks

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	India.pdf?_tp=eyJjb250ZXh0Ijp7ImZpcnN0UGFnZSI6InB1YmxpY2F0aW9uIiwicGFnZSI6InB1YmxpY2F0aW9uIn19 https://www.discoveryjournals.org/discovery/current_issue/v55/n285/A4.pdf? Development and Evaluation of Species-Specific Biomass Models for Most Common Timber and Fuelwood Species of Bangladesh (scirp.org) Rico Kongsager, Jonas Napier, Ole Mertz. (2013). The carbon sequestration potential of tree crop plantations. Allometric Equation for Pinang (Areca catechu) Biomass models for estimating carbon storage in Areca palm plantations - ScienceDirect https://www.researchgate.net/publication/305905765_BIOMASS_AND_CARBON_STORAGE_IN_TREES_GROWN_UNDER_DIFFERENT_AGROFORESTRY_SYSTEMS_IN_SEMI_ARID_REGION_OF_CENTRAL_INDIA?enrichId=rgreq-8112f807ee5d6a14ab0c0f6760387827-XXX&enrichSource=Y292ZXJQYWdlOzMwNTkwNTc2NTtBUzozOTE5NDAzNDU0ODMyNjVAMTQ3MDQ1NzI2ODYyNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf https://www.researchgate.net/publication/305905765_BIOMASS_AND_CARBON_STORAGE_IN_TREES_GROWN_UNDER_DIFFERENT_AGROFORESTRY_SYSTEMS_IN_SEMI_ARID_REGION_OF_CENTRAL_INDIA?enrichId=rgreq-8112f807ee5d6a14ab0c0f6760387827-XXX&enrichSource=Y292ZXJQYWdlOzMwNTkwNTc2NTtBUzozOTE5NDAzNDU0ODMyNjVAMTQ3MDQ1NzI2ODYyNA%3D%3D&el=1_x_2&_esc=publicationCoverPdf Andhra Pradesh forest Inventary Report,2010 A study of estimation of growing stock in TOF of Tamil Nadu	

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25	**State Government Websites for Legal Land titles** • AP Meebhoomi - meebhoomi ap ,View Adangal (అడంగల్),ROR-1B,FMB Maps • Bhoomi Online 2025 (Karnataka Land Records) RTC, Pahani, Mojini, Mutation • Bhu Abhilekh Portal : : Government of Bihar.	
B01	**VCS and CDM requirements/guidelines** a) VCS Program Guide (v4.4, dated 29/08/2023) b) VCS Standard (v4.7, dated 16/04/2024) c) Program Definitions (v4.5, dated 16/04/2024) d) Registration & Issuance Process (v4.5, dated 10/14/2024) e) AFOLU Non-Permanence Risk Tool (v4.2, dated 0305/2024) f) VCS Validation and Verification Manual (v3.2, g) dated 19/10/2016) h) 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**: a) ar-am-tool-02-v1.pdf b) ar-am-tool-03.pdf	

	c) ar-am-tool-08-v4.0.0.pdf d) ar-am-tool-14-v4.2.pdf e) ar-am-tool-15-v2.0.pdf g). ar-am-tool-16-v1.1.0.pdf	
BO4	~~**Other GHG Program**~~ **Other GHG Program** CDM: CDM: Project Activities (unfccc.int) GSF: GSF Registry (goldstandard.org) Plan Vivo: Projects | Plan Vivo Foundation VCS Project Page: Verra Search Page	

APPENDIX 4: LIST OF FINDINGS

Table 1. CL from this Validation and Verification

CL	01	**Section no.**	**Documents pertaining to VCS Standard 4.7**	**Date: 25/05/2025**
Description of CL				
PP shall provide the following documents in line with the VCS Standard 4.7, the same were not provided: 1. NPRR and NPRT notes from the VERRA hub. 2. Certificate of incorporation of the project proponent and other entity. 3. Grievance Records. 4. LULC Maps 5. Supporting documents for carbon calculations including all the assumptions i.e., raw sampling records and all the reference studies used. 6. Master of farmers details. 7. Agreements between the entities involved. 8. Govt websites(links) to verify land titles.				
Project participant response				**Date: 05/06/2025**
The Project Proponent (PP) has submitted the following documents to the VVB in compliance with the VCS Standard v4.7: 1. The NPR report and NPRT notes, as provided on the VERRA hub, have been made available to the VVB. 2. Certificates of incorporation by Project Proponent has been submitted 3. Records of grievances received during the monitoring period have been shared. 4. Land Use Land Cover (LULC) maps have been provided. 5. All supporting documentation required for carbon calculations—including assumptions, monitored PSP data, and reference studies—has been submitted.				

6. A master sample data sheet containing farmer details has been provided. 7. Agreements between the entities involved has been shared in supportive documents 8. Land records, farmer agreements, and relevant government website links for land title verification has been found as followed: • AP Meebhoomi - meebhoomi ap ,View Adangal (అడంగల్),ROR-1B,FMB Maps • Bhoomi Online 2025 (Karnataka Land Records) RTC, Pahani, Mojini, Mutation • Bhu Abhilekh Portal : : Government of Bihar. • Karbi Anglong is a tribal area and is managed by the community rights.
Documentation provided by project participant
1. NPRR 2. NPRT notes 3. Certificates of incorporation 4. Grievance record 5. LULC maps 6. PSP monitored data sheet 7. Raw data sheets 8. Master farmer list 9. Agreements between PP and PI 10. Land records 11. Farmer agreements

VVB assessment	**Date:** 18/06/2025
1. Based on the review of the NPRR and NPRT provided, VVB concludes the value of VCUs to be deposited in the buffer account is not consistent in both the documents. PP is requested to clarify the same. Hence, **CL point is open**. 2. VVB has reviewed the Certificate of Incorporation for the project proponent, Infinites Solution, along with associated entities such as the Holistic Life Transforming and Empowering Community (HLTEC), Mangrove Foundation of India (MFI), and WIPES Foundation, and found all documentation to be satisfactory. **CL point is closed.**	

3. During the review of the grievance logbook, VVB noted that multiple grievances had been recorded under the grouped project, with records being maintained by HLTEC, MFI, and WIPES Foundation. **CL point is closed.**

4. VVB confirms that Land Use Land Cover (LULC) maps have been provided by PP. **CL point is closed.**

5. In the carbon calculation sheet, VVB observed that growth factors were assigned to tree species such as *Mangifera indica* (mango) and *Cocos nucifera*. However, the values could not be traced in the cited literature. Hence the Project Proponent is requested to provide the appropriate sources used to determine these growth factors. **CL point is open.**

6. Master list containing farmer details has been found missing in the shared documents**. CL point is open.**

7. Additionally, the "List of PSP" file reviewed by VVB shows a total of 69 PSPs distributed across four states; Bihar, Karnataka, Assam, and Andhra Pradesh. However, in VCS PDMR the total number of PSPs given is 42. PP should clarify this inconsistency. **Hence, CL point is still open.**

8. VVB has also verified the agreements among all involved entities, including Infinites Solution, HLTEC, MFI, and WIPES Foundation. **CL point is closed.**

9. Furthermore, land records, farmer agreements, and official government portals were cross-checked for land title verification. These include AP Meebhoomi for Andhra Pradesh (Adangal, ROR-1B, FMB maps), Bhoomi Online 2025 for Karnataka (RTC, Pahani, Mojini, Mutation), the Bhu Abhilekh Portal for Bihar, and acknowledgment that Karbi Anglong in Assam is a tribal area governed under community rights. **CL point is closed.**

Project participant response	Date: 19/06/2025
1.Both the documents are revised with consistent VCUs values. 5. For mango, the growth model has been sourced from a thesis available on Krishi Kosh. According to the thesis, the orchard was established in the year 1991–92, as mentioned on page 23. Additionally, page 22 states that the experiment was conducted during the 1997–98. This clearly indicates that the growth data were collected when the mango trees were six years old. 6. Master list containing farmer details now has been shared. For *Cocus nucifera* the growth model has been revised with traceable secondary source. 7. The number of PSPs was erroneously mentioned as 42. The correct total number is 73. The overall consistency of the documentation has been maintained accordingly	
Documentation provided by project participant	
1.Updated NPRT and NPRR 5. Ex ante ERR 6. Master list containing farmer details 7. Ex cel of PSP List and Ex-Post ERR sheet	
VVB Assessment	**Date: 20/06/2025**
1. VVB based on the review of documentation – NPR Rep and NPRT confirms that the value of VCUs to be deposited in the buffer account is now consistent in both the documents. **CL point is closed.** 5. Based on the review of ER sheet VVB confirms that appropriate sources has been updated for the given species. **CL point is closed.** 6.VVB confirms that master list of farmers has now been provided to the VVB in the documentation shared. **CL point is closed.** 7. VVB confirms that the total number of PSPs is 73, the details has been provided in Ex post sheet. The value of PSPs is now consistent in all the documentation. **CL point is closed.**	

<table>
<tr><td>CL</td><td>02</td><td>Section no. 1.5</td><td>Grouped eligibility</td><td>Date: 25/05/2025</td></tr>
<tr><td colspan="5">Description of CL</td></tr>
<tr><td colspan="5">In line with the requirements of Section 3.6.16(4), for the inclusion of new PAI eligibility criteria, the PP must demonstrate that the proposed instances fall under the baseline scenario defined in the project description for the specified project activity and geographic area.

The VCS PDMR currently states:

“Each land parcel to be included in the new Project Activity Instance must adhere to the baseline scenario specified in the project description for the designated Project Activity and geographic area.”

However, reference to the “geographic area” PD lacks sufficient clarity and transparency. Therefore, the PP is requested to clearly specify the geographic area applicable to the new Project Activity Instance eligibility criteria.</td></tr>
<tr><td colspan="4">Project participant response</td><td>Date: 02/06/2025</td></tr>
<tr><td colspan="5">The Eligibility criteria for New Project Instances has been explained in section 1.5 of the VCS PDMR. This project activity is a grouped project and the project boundary of grouped project is India, however, plantation activity for PAI-1 has been done in various districts of Assam, Bihar, Andhra Pradesh and Karnataka, states of India. The reference to the “geographic area” belongs to the project boundary. The future project instances will have baseline scenario and additionality demonstrations, same as PAI-1, described in sections 3.4 and 3.5 of the PDMR.

PP has now transparently demonstrated the same in section 1.5 of VCS PDMR.</td></tr>
<tr><td colspan="5">Documentation provided by project participant</td></tr>
<tr><td colspan="5">Revised VCS PDMR</td></tr>
<tr><td colspan="4">VVB assessment</td><td>Date: 18/06/2025</td></tr>
<tr><td colspan="5">Upon reviewing the revised PDMR, VVB confirms that the Project Proponent (PP) has demonstrated the eligibility criteria for the project activity, which is a grouped project located within India. The geographic area refers to India.</td></tr>
</table>

Therefore, **CL 02 is closed**.

CL	03	**Section no. 1.9**	**Project Start Date**	**Date: 25/05/2025**
Description of CL				
In line with section 3.8 of the VCS standard (v4.7): "*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*" In Section 1.8 of the VCS PD the start date is mentioned as 1st July 2019. However, no evidence has been provided to verify the project start date of 01/03/2019, as required by Section 3.8 of the VCS Standard v4.7. PP shall provide evidence for start date as per the requirements stated above. The evidence/s can be in the form of: 1. **Official plantation records** or **field logs** documenting when trees were first planted, including the date and location. 2. **Nursery purchase orders, receipts**, or **delivery records** indicating the dates of seedling transfer to the project area. 3. **Photos or videos** showing the commencement of field activities. 4. **Internal project reports, meeting minutes, or project management documents** that describe the planning and start of activities. 5. **Labor contracts**				
Project participant response				**Date:** 27/05/2025
In accordance with section 3.8 of the VCS standard (v4.7): "*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". Nursery bill has been provided to support the project start date.	
Documentation provided by project participant	
Nursery bill dated 28/06/2019, 29/06/2019 and 30/06/2019	
VVB assessment	**Date:** 18/06/2025
VVB has reviewed the evidence submitted to confirm the project start date. The evidence submitted includes bills dated 28/06/2019, 29/06/2019 and 30/06/2019.The project start date mentioned in VCS PDMR is 1st July 2019. VVB considers the evidence submitted to be acceptable and confirms that the project start date is 01/07/2019. **CL is closed**.	

CL	04	**Section no. 1.12**	**Description of project activity**	**Date: 25/05/2025**
Description of CL				
In Section 1.12 of the VCS PDMR, a total of 21 species have been mentioned as proposed for planting under the project. However, only 16 species are listed in Section 2.4.2 of the same document. This presents an inconsistency between the two sections regarding the number of species proposed for planting. PP shall therefore provide clarification on this discrepancy and ensure consistency across the relevant sections of the VCS PDMR.				
Project participant response				**Date:** 27/05/2025
In line with Section 1.12 of the VCS PDMR, Table 2 lists a total of 17 species proposed for planting under the project activity for PAI 1, the same species has been included in the GHG emissions calculation in the Ex-ante Spreadsheet. The count of 4 species mentioned				

in Table 3 are few of the same species which are involved in harvesting under the project activity. To maintain consistency, the number of species in Section 1.12 and 2.4.2 has been confirmed as 17. *Sesbania grandiflora* has been added to the revised VCS PDMR as well as to the calculation spreadsheets
Documentation provided by project participant
Revised VCS PDMR
VVB assessment — **Date:** 18/06/2025
The revised PDMR has been checked, and it is confirmed that the PP has corrected the documentation. The number of species mentioned in Sections 1.12 and 2.4.2 has been updated to 17, ensuring consistency throughout the document. **CL 04 is closed.**

CL	05	**Section no.**	1.15 of the PDMR **(Relevant laws)**	**Date:** 25/05/2025
Description of CL				
VVB, noted that the project activities involve scheduled tribe “*Karbi Anglong Autonomous Community*”, however the PDMR section 1.15 is not transparent on the compliance with relevant laws/rights specially in relation to Karbi Anglong Community. PP shall clarify and demonstrate the compliance with the same.				
Project proponent response				**Date:** 02/06/2025
PP has now transparently demonstrated “*Karbi Anglong Autonomous Council, 1951”* in section 1.15 of VCS PDMR. The project is in compliance with relevant laws/rights and it does not violate the act.				
Documentation provided by Project proponent				
Revised VCS PDMR				
VVB assessment				**Date:18/06/2025**

Based on the review of revised VCS PDMR, VVB confirms that PP has updated Section 1.15 of the VCS PDMR to explicitly reference the Karbi Anglong Autonomous Council Act, 1951, demonstrating compliance with relevant laws and rights concerning the Karbi Anglong community. The revised section confirms that the project activities align with the provisions of the Act and do not infringe upon the rights of the Karbi Anglong Autonomous Council. **CL 05 is closed.**

CL	06	**Section no.**	1.16 & 1.17 of the PDMR (Double counting)	**Date:** 25/05/2025
Description of CL				
In compliance with section 3.23 of the VCS Standard, v4.7, PP is requested to provide a declaration to demonstrate the following: - The project has not been registered, and is not seeking registration under any other GHG programs and - The project has not been rejected by any other GHG programs. - The project reduces GHG emissions from activities that are not included in an emissions trading program or any other mechanism that includes GHG allowance trading. - The project has neither sought nor received another form of GHG related environmental credit, including renewable energy certificates. - The project is not involved in any supply chain process.				
Project proponent response				**Date:** 27/05/2025
In compliance with Section 3.23 of VCS Standard, v4.7, self-declaration certificate of Double Counting has been provided with the demonstration of the following: • The project has not been registered, and is not seeking registration under any other GHG programs and • The project has not been rejected by any other GHG programs.				

• The project reduces GHG emissions from activities that are not included in an emissions trading program or any other mechanism that includes GHG allowance trading. • The project has neither sought nor received another form of GHG related environmental credit, including renewable energy certificates. • The project is not involved in any supply chain process.

Documentation provided by Project proponent	
Self-declaration certificate of Double Counting	
VVB assessment	**Date:** 18/06/2025
The PP has provided a declaration confirming that: • GHG emission reductions and/or removals generated by the project activity during this monitoring period will not be used for compliance with any other emission trading program or to meet binding limits on GHG emissions. • The project has not been registered and is not seeking registration under any other GHG programs. • The project has not been rejected by any other GHG programs. • The project has neither sought nor received any other form of GHG-related environmental credits. • The project owner hereby confirms that there will be no double counting of credits for any monitoring period in any other GHG program. • The project activity is not involved in manufacturing and selling products to consumers and is not a part of the supply chain (Scope 3) emissions. Based on the provided declaration, VVB confirms that the project complies with the requirements to avoid double counting and ensures that the generated GHG emission reductions/removals are not used in any other GHG programs. **CL 06 is closed.**	

CL	07	Section no. 1.18.1 and 1.18.2	Sustainable Development Contributions	Date: 26/05/2025
Description of CL				
1.In section 1.18.1, under the "Sustainable Development Contribution activity description":, the listed Sustainable Development Goals (SDGs) include SDG 1, SDG 8, SDG 13, and SDG 15. However, in Section 1.18.2, under Sustainable Development Contributions Activity Monitoring, the SDG indicators correspond to SDG 1, SDG 5, SDG 8, SDG 13, and SDG 15. This reflects an inconsistency between the SDGs mentioned in the two sections. PP shall clarify this inconsistency to ensure accurate and consistent reporting of SDG contributions throughout the document. 2. The provided contribution i.e. *"around 100 women are directly participated in the project*" for the SDG 5.5.2 target are inappropriate, this contribution appears to be misaligned with the intent of the selected SDG target, which focuses **on Proportion of women in managerial positions**. PP shall clarify and select the relevant SDG accordingly. 3. In Section 1.18.1, for the SDG target "8.3.1 – Proportion of informal employment in total employment, by sector and sex," the listed contribution activity is awareness trainings. However, this contribution appears to be misaligned with the intent of the selected SDG target, which focuses on employment distribution by sector and sex. PP shall demonstrate the relevance of the selected SDG target in relation to the described activity.				
Project participant response				**Date:** 04/06/2025
1. Section 1.18.1 of the VCS PDMR lists SDG1, SDG5, SDG8, SDG13 and SDG15 under the "Sustainable Development Contribution Activity description". SDG 5 has been added to Section 1.18.1 to maintain consistency with the SDGs contributions outlined in Section 1.18.2 of the revised VCS PDMR for the project activity. 2. During the PAI-1 project activity, female participants were actively and equally involved in various aspects of the project, including operations, field-level execution, stakeholder consultation meetings, and training sessions. To substantiate this, the Project Proponent (PP) has submitted supporting documentation such as wage slips, Local Stakeholder Consultation (LSC) attendance sheets and training records. Furthermore, women hold equal roles and responsibilities in decision-making				

processes related to project activities. This reflects the project's strong commitment to promoting gender equality and empowering women. 3. Section 1.18.2, for the SDG indicator "8.3.1- Proportion of informal employment in total employment, by sector and sex', the listed project contribution is updated as awareness trainings and creation of decent jobs. These efforts aim to promote employment opportunities and encourage participation from both women and men, regardless of sector and sex.
Documentation provided by project participant
• Revised VCS PDMR • Wage Slip • LSC Attendance sheets • Training Records

VVB assessment	**Date:** 18/06/2025
1. VVB has reviewed the revised VCS PDMR confirms that SDG 5 is also included in section 1.18.1. **CL point is closed.** 2. The evidence provided gives the list of participants involved in the project-related activities. However, the selected SDG target focuses **on "Proportion of women in managerial positions".** Therefore, PP is requested to provide the evidence for the same. **CL point is still open.** 3. Upon reviewing the revised Section 1.18.2 of the VCS PDMR, VVB acknowledges that the PP is providing SDG awareness training, decent job creation, and climate change awareness programs to 1,000 individuals and relevant stakeholders. However, VVB observed that the training records provided pertain solely to Assam. Therefore, PP is requested to submit the training records for all other states involved in the project activities. This should include detailed information on the number of participants, training content, and locations to verify the extent and impact of the project across all regions. **CL point is still open.**	
Project participant response	**Date:** 18/06/2025

1. SDG 5 has not been included in the project activity. 2. Section 1.18.2, for the SDG indicator “8.3.1- Proportion of informal employment in total employment, by sector and sex’, the listed project contribution is updated as awareness trainings and creation of decent jobs. These efforts aim to promote employment opportunities and encourage participation from both women and men, regardless of sector and sex. The supporting documents, including the signed attendance sheet, topics covered during the training and details of the location and date, have been provided for the specified training sessions conducted in Karnataka, Andhra Pradesh, Assam and Bihar.
Documentation provided by project participant
• Women head sheet • Training Records for MFI, WIPES and HLTEC - including attendance sheets, training locations and the topics covered.

VVB Assessment	**Date: 20/06/2025**
1. VVB based on the review of VCS PDMR confirms that SDG 5 is not included in the project activity. **CL point is closed.** 2. VVB based on the review of documentary evidence provided confirms that all the training records has now been provided to the VVB. **CL point is closed.**	

CL	08	**Section no. 1.19**	**Leakage Management**	**Date: 25/05/2025**
Description of CL				
In section 1.19 of the VCS PDMR, it has been stated that, “*This project is implemented to increase the vegetation cover on degraded shrubland and degraded land with low agricultural output. 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.*”				

In this context, PP is requested to clarify the specific measures in place to ensure the economic sustainability of farmers during the project period. PP shall explain how the project will prevent leakage risks, particularly with respect to the potential displacement of farmers to new areas for agricultural activities prior to receiving project benefit.

,In section 3.4, Baseline Scenario, it has been mentioned that "*Considering the enduring prevalence of subsistence farming in the project area, this serves as the baseline scenario against which the proposed interventions will be evaluated*".

Furthermore, in section 5.3 of the PD, it has been stated as, "*According to the PRA study, prior to the project implementation, the project area is degraded land with low agricultural output, there are no grazing activities, so leakage emission attributable to the displacement of grazing activities is accounted as zero*."

The absence of leakage is insufficiently justified by the PP, as the above statements clearly indicates that **subsistence agriculture** is part of the baseline, shrubland 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 agricultural lands (refer to figures below).

Plot 1: G.subbanaidu

Assessment: Forest remnant (2016 to 2019)

Image 2010 - Clean

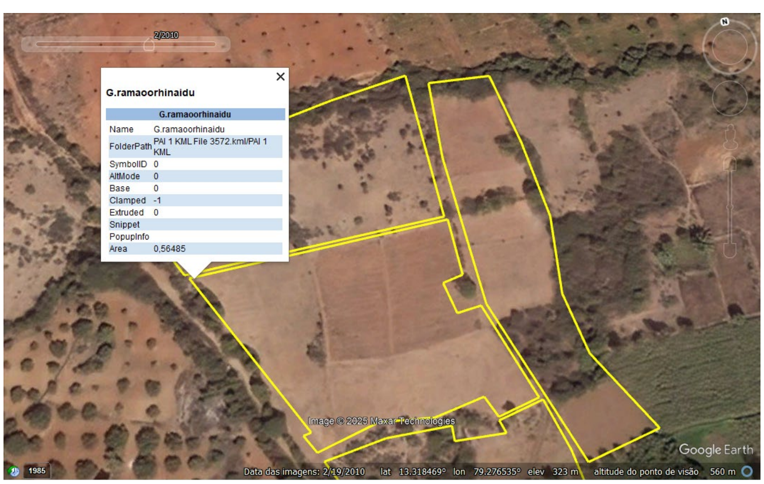


Image 2019

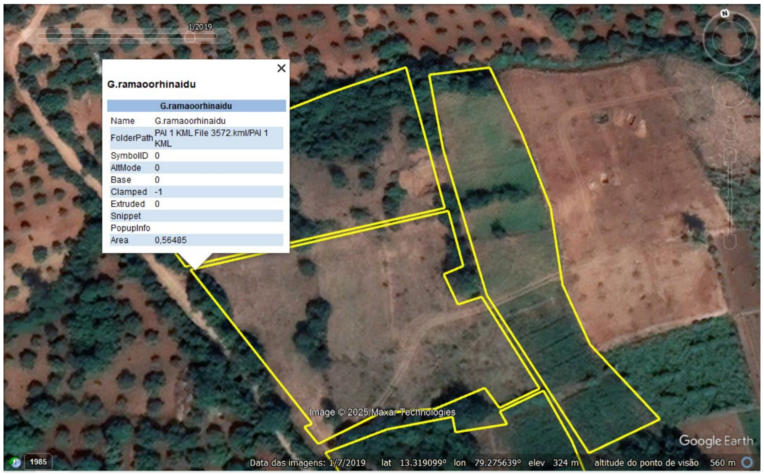
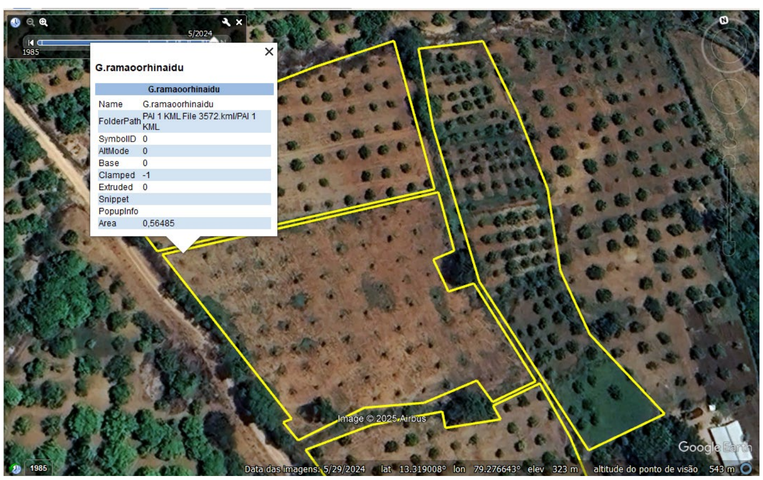


Image 2024 - Clean



1- Plot: Lakshman Raju

Image 2014

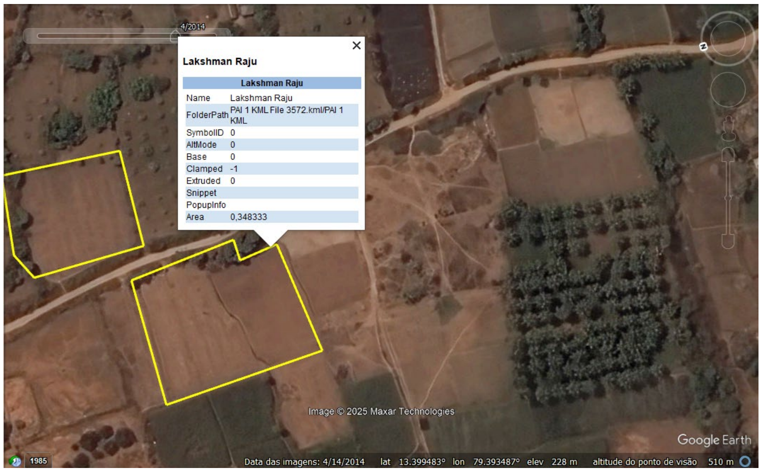
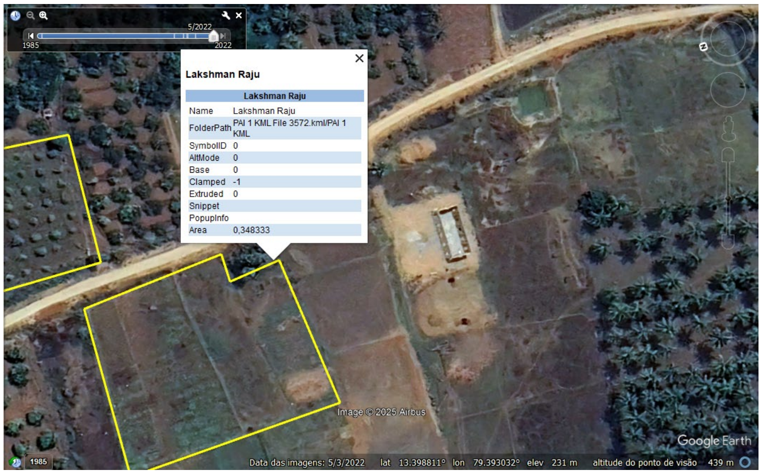


Image 2018

Image 2022 - Clean



Project participant response	**Date:** 05/06/2025

1. During the project implementation, multipurpose tree species are planted in the agroforestry system. Which is continuously delivering the services to farmers. And, based on the carbon credit agreement, farmers have the full right of all the tree-based product, which is including fruit, timber secondary products etc. Additionally, during the project implementation, the project is providing seasonal employment to farmers. Other than that, based on the carbon agreement, farmers are also involved in the Benefit sharing mechanism plan.

The project activity supports long-term economic growth for farmers involved in the project and communities by promoting sustainable agroforestry, creating jobs in planting and maintenance, and boosting agricultural productivity to enhance livelihoods and resilience.

The justification for the leakage has already been mentioned in section 5.3 of the VCS PDMR.

2. According to the PRA responses collected, no existing activities are displaced by the project. It is implemented through an agroforestry planting model that complements ongoing agricultural practices. The project area is clearly defined and consists of land privately owned by farmers, which has been under continuous cultivation for generations. As farmers do not have the right to cultivate land that does not belong to them. Therefore, there is no shifting of agriculture onto land that is not already under cultivation.

Hence, based on the above measures, the project ensures that the economic sustainability of local farmers is prioritized while minimizing the risk of leakage and displacement. 1- The baseline scenario is degrading agriculture lands, croplands with subsistence farming. The justification for leakage has been provided in section 1.19 and section 5.3 of the VCS PDMR.

Documentation provided by project participant	
PRA summery report, VCS PDMR	
VVB assessment	**Date:** 18/06/2025
Upon review of the response provided by the Project Proponent (PP), the VVB notes that the project promotes an agroforestry model involving the plantation of multipurpose tree species, which continuously delivers economic and ecological benefits to participating farmers. The PP has clarified that under the carbon credit agreement, farmers retain full ownership of all tree-based products, including fruit, timber, and other secondary outputs, thereby contributing to sustained income generation. Additionally, the project provides seasonal employment opportunities during plantation and maintenance phases, further supporting community livelihoods. The involvement of farmers in a structured Benefit Sharing Mechanism ensures equitable distribution of carbon revenue, thereby incentivizing long-term participation. These measures collectively support the economic sustainability of the farmers during the project period and minimize the risk of leakage by reducing the likelihood of displacement of agricultural activities to other areas. Based on this clarification and supporting rationale, the VVB considers the issue of potential leakage and economic displacement as adequately addressed for this monitoring period. **The finding is therefore closed.** 2.Upon review of the documentation, the VVB notes that in Section 5.3 of the Project Description (PD), the Project Proponent (PP) has stated that there were no grazing activities prior to project implementation, and therefore leakage emissions attributable to displacement of grazing are considered zero. However, based on the Participatory Rural Appraisal (PRA) report provided, it is evident that overgrazing was identified by approximately 78% of respondents as a primary cause of land degradation. This clearly indicates that grazing did occur in the baseline scenario, thereby contradicting the assertion in the PDMR.	

Given this inconsistency, the claim of zero leakage due to the absence of grazing is not substantiated. The PP is therefore expected to revise their justification by acknowledging grazing as a baseline activity and clarifying the measures adopted to prevent its displacement to surrounding areas. At the same time, the VVB acknowledges the PP’s clarification that the project does not displace existing agricultural practices, as it is implemented through an agroforestry model that complements ongoing subsistence farming. According to the PRA and the PP's response, the land under project activities is privately owned by farmers and has been under continuous cultivation for generations. Furthermore, farmers do not have access to or rights over additional land, thereby significantly reducing the risk of displacement of subsistence agriculture and associated leakage emissions from land use expansion.In conclusion, while the justification regarding the absence of grazing is not acceptable in its current form and needs correction, the risk of leakage due to displacement of cultivation is reasonably addressed and considered low. **CL point is still open.**

Project participant response	**Date:** 05/06/2025
2.In the PRA report, it was erroneously stated that 78% of respondents identified overgrazing as the primary cause of land degradation. However, both the baseline scenario assessment and remote sensing analysis clearly indicate that the land prior to project implementation was under agricultural use (long history of agriculture), with no evidence of grazing activity. This correction has been incorporated into the revised PRA report to ensure consistency with the actual land use conditions	

Documentation provided by project participant
PRA summery report

VVB Assessment	**Date: 20/06/2025**
VVB, based on the review of PRA report, confirms that the land was previously being used as agricultural land and not for grazing. Hence leakage due to displacement of grazing activities is not applicable for the project. Leakage has been accounted in compliance with the AR CDM AR Tool 15. **CL point is closed.**	

CL	09	Section no. 2.1.2	Stakeholder consultation	Date: 25/05/2025
Description of CL				
In section 2.1.2, the dates for the consultation conducted at HLTEC Office Dhipu, Karbi Anglong, Assam, are missing. PP shall include the same along with evidence.				
Project participant response				**Date:** 28/05/2025
In Section2.1.2 of the VCS PDMR, the dates for LSC consultation conducted by HLTEC has been incorporated as follows:				

Location	Date
Chingri Club (Kajagoan)	12/06/2019
Longki Tisso, Upper Deapani	18/07/2020
Kailamali	10/07/2021
Dakmuka, Rajpathar	15/06/2022
Longnit Bazzar	02/07/2023
Jengkha	06/06/2024

This is further supported by the LSC attendance sheet and feedback form serving as evidence proof.

Documentation provided by project participant	
Revised VCS PDMR LSC & Feedback (HLTEC)	
VVB assessment	**Date:** 17/06/2025
VVB has reviewed the revised VCS PDMR and acknowledges that PP has added details such as location and dates of stakeholder meetings conducted by HLTEC.VVB has also reviewed the LSC report feedback along with attendance of the stakeholder. Therefore, **CL 09 is now closed.**	

CL	10	**Section no.**	Section 2.1.4 (**Grievance redress procedure**)	**Date:** 26/05/2025
Description of CL				
As per the requirements of section 3.18.4 of the VCS standard and template instructions, the provided information in the Grievance procedure is not transparent on the specific time period for the resolution of the grievance received. PP shall clarify the same.				
Project proponent response				**Date:** 05/06/2025
In accordance with the CL description and Section 3.18.4 of the VCS Standard, the project proponent has incorporated the necessary revisions in the PDMR. While the core grievance procedure remains unchanged, detailed timelines have now been specified for each step of the process. This includes clear timeframes for acknowledging grievances, conducting eligibility screening, addressing and mediating resolutions, as well as handling escalations and their timely resolution.				
Documentation provided by Project proponent				
VVB assessment				**Date: 17/06/2025**
VVB based on the review of revised PDMR, confirms that that PP has revised the the grievance redressal mechanism in section 2.1.14 of the PDMR including clear timeframes for acknowledging grievances, conducting eligibility screening, addressing and mediating resolutions, as well as handling escalations and their timely resolution. **CL10 is closed.**				

CL	11	**Section no. 2.3.5**	Benefit sharing mechanism	**Date: 27/05/2025**
Description of CL				
As per the requirements of section 3.18.8 of the VCS standard, the PDMR section 2.3.5 is not transparent on "basis for allocation of funds to individual farmers" as part of benefit sharing mechanism. PP shall demonstrate the same.				
Project proponent response				**Date:** 05/06/2025

As per the requirements outlined in section 3.18.8 of the VCS Standard, the PP has made necessary revisions, particularly concerning the criteria for fund allocation. An objective approach has been adopted, factoring in elements such as the area of land each farmer has enrolled under the project and their compliance with implementation requirements, including land stewardship and adherence to monitoring protocols. The actual benefit sharing of the received carbon credit finance will be directly deposited in the bank account of the farmer. The same has been mentioned in section 2.3 of VCS PDMR.
Documentation provided by Project proponent

VVB assessment	**Date:17/06/2025**
The Project Proponent (PP) has provided a revised explanation in alignment with the requirements of Section 3.18.8 of the VCS Standard, clarifying the basis for allocation of funds to individual farmers as part of the benefit-sharing mechanism. As per the updated Section 2.3 of the VCS PDMR, fund distribution is determined based on objective and transparent criteria, including the area of land enrolled by each farmer and their level of compliance with implementation and monitoring requirements, such as land stewardship and participation in data collection protocols. Furthermore, it has been confirmed that benefits from carbon credit revenues will be transferred directly to the farmers' individual bank accounts, thereby ensuring traceability and accountability in disbursement. The VVB finds this approach to be consistent with the intent of the VCS Standard to ensure fairness and transparency in benefit sharing. Based on the clarifications provided and the revisions made in the PDMR, the VVB considers the finding to be adequately addressed. **CL 11 is closed.**	

CL	12	**Section no. 2.4.3**	**Ecosystem Conversion**	**Date: 25/05/2025**
Description of CL				
In section 2.4.3, Ecosystem conversion, it has been mentioned that "*It is documented that there has been no conversion of existing native ecosystems since the last 10 years. The claim has been substantiated with the on-ground PRA report*". PP shall therefore provide the PRA report/LULC to substantiate this claim.				

Project participant response	Date: 29/05/2025
In line with Section 2.4.3 of VCS PDMR, there has been no conversion of existing native ecosystems in the last 10 years. To support this, a PRA report has been submitted as part of a supporting document.	
Documentation provided by project participant	
PRA Report	
VVB assessment	**Date: 17/06/2025**
The Project Proponent has submitted the Participatory Rural Appraisal (PRA) report to substantiate the claim made in Section 2.4.3 of the VCS PDMR. The PRA explicitly states that there has been no alteration of native ecosystems over the past 10 years. This supports the PP's assertion of no ecosystem conversion. Based on this evidence, the VVB considers the finding to be adequately addressed. **CL 12 is closed.**	

CL	13	Section no.	Applicability conditions	Date: 25/05/2025
Description of CL				
In compliance with Section 2.2 of the applied methodology, AR-ACM0003 (v02.0) and VCS Standard v4.7, PP shall provide the GIS files, LULC maps and forest non forest analysis to demonstrate the following: a) The land subject to the project activity does not fall in wetland category (AR-ACM0003, v02.0). b) project areas were not cleared of existing natural non-degraded ecosystems due to the project activity (section 3.19.28, VCS Standard v4.7) c) No clearing or conversion took place at least 10 years prior to the proposed project start date.				

d) Soil distribution map and soil type in the project area.

Project proponent response	**Date:** 29/05/2025

Information has been added in compliance with section 2.2 of the applied methodology AR-ACM0003 as follows:

a) In accordance with Chapter 7 Wetlands, Volume 4, 2006 IPCC Guidelines, “Wetlands include any land that is covered or saturated by water for all or part of the year, and that does not fall into the Forest Land, Cropland, or Grassland categories”. The land parcels included in the project activity and first project activity phase are privately owned land and do not fall under the wetland category, the same has been supported by Wetlands of India Portal. LULC maps have been provided for the project area which concludes that the project does not fall under wetland category.

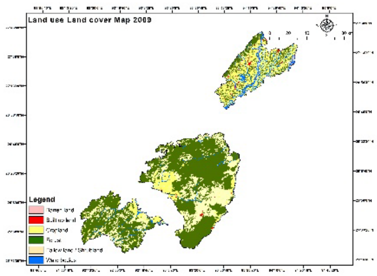
b) As per SOP, one of the eligibility criteria for admission of Land Parcels is “land parcel shall not have any native ecosystems within the 10 years period prior to the plantation date”. Furthermore, forest and non-forest map along with remote sensing and aerial imagery of each farmer parcel unit has been provided, which demonstrates that land under the project activity have not been cleared in the last 10 years ensuring that the project does not contribute to deforestation or habitat loss.

c) LULC map have been provided in section 1.14 of VCS PDMR, which demonstrates that no clearing or land conversion occurred at least 10 years prior to the proposed project start date.

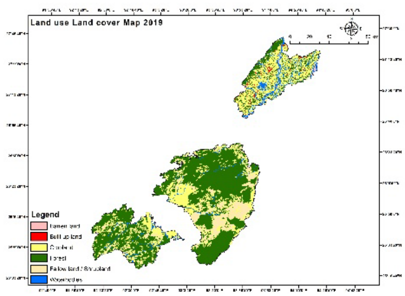
d) The soil distribution and soil type maps are provided in section 1.14 of VCS PDMR for the project area in Assam, Bihar, Karnataka and Andhra Pradesh and are supported by corresponding soil type maps.

Documentation provided by Project proponent

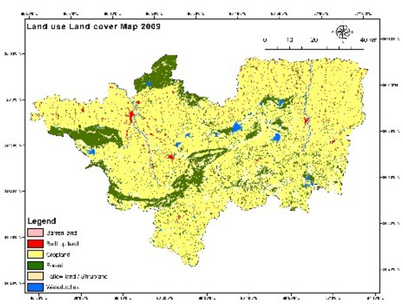
- Revised VCS PDMR
- LULC Maps



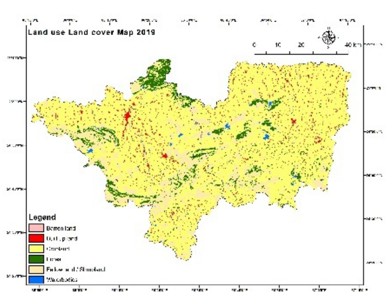
LULC of Assam (Karbi Anglong), year 2009



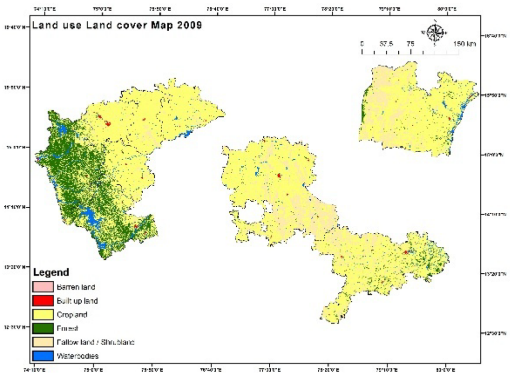
LULC of Assam (Karbi Anglong), year, 2019



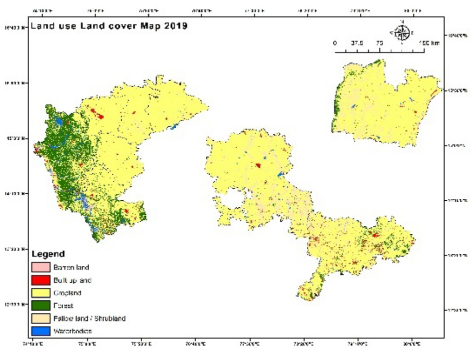
LULC of Bihar, year 2009



LULC of Bihar 2019

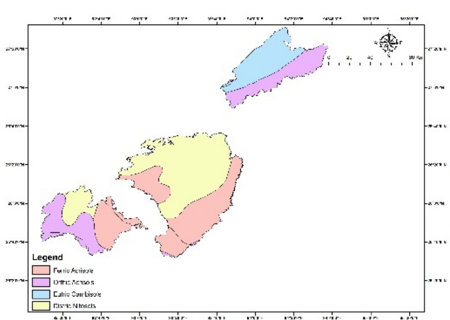


LULC of Karnataka and Andhra Pradesh, year 2009

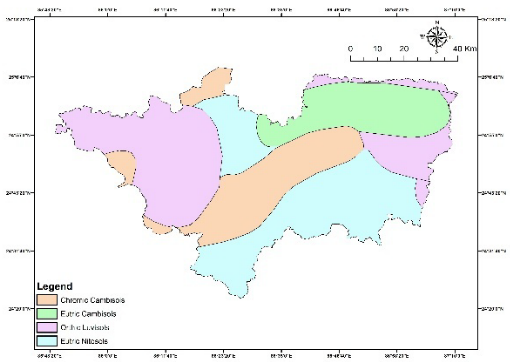


LULC of Karnataka and Andhra Pradesh, year 2019

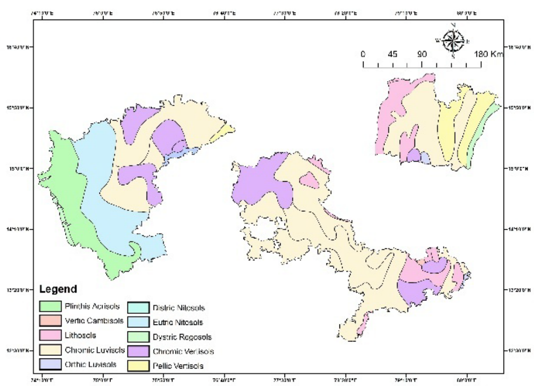
- Soil Type Maps



Soil Type of Assam



Soil Type of Bihar



Soil Type of Karnataka and Andhra Pradesh

VVB assessment	Date:

1. After analyzing the documents presented, cross-referencing the data with the Global Atlas of Wetlands and scanning the project areas in Google Earth Pro, no plots in wetlands were detected by VVB. **CL point is closed.**

2. The shapefiles "Forest_non_Forest_2009.shp" and "Forest_non_Forest_2019.shp" were analyzed and are consistent with the verified images, however, it is known that there is a certain error embedded in this classification, which was detected in some

	plots of the project area, as shown below. Therefore, the PP is requested to clarify these points, as well as review all other plots that are part of the project area. **CL point is still open.**

See plots B3, B9, B11, C1, C2, C3, C4 and C5 of the assessment below:

Initially, the evaluations of 14 parcels with eligibility problems according to VCS Standard 4.7, section 3.11.2 (3.c.) were presented, found in a total of 50 randomly selected parcels. Of these, 10 parcels were corrected by the PP, leaving 4 parcels still with eligibility problems, as follows:

2- B.3.Plot: G.sugunamma

Assessment: Forest remnant (2010 to 2019)

Image 2010

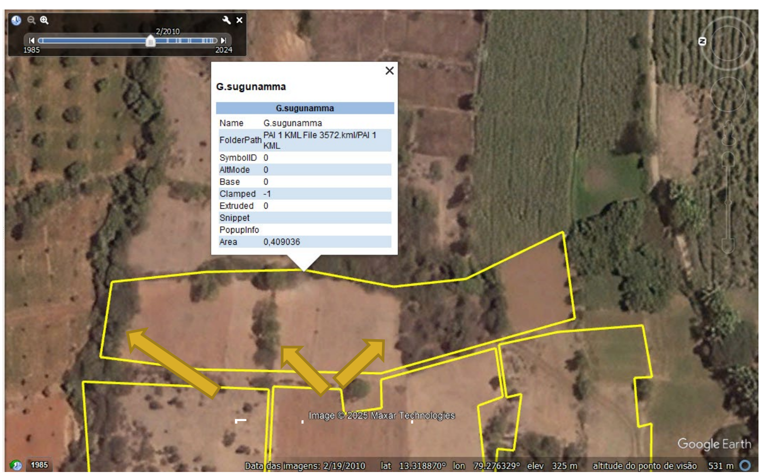


Image 2019

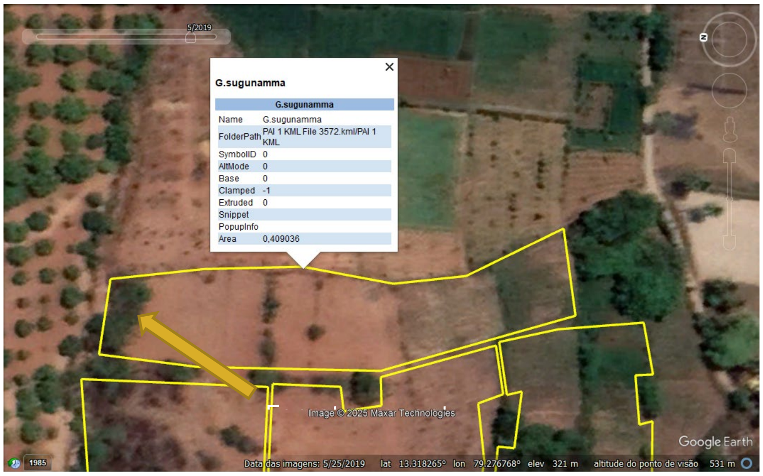
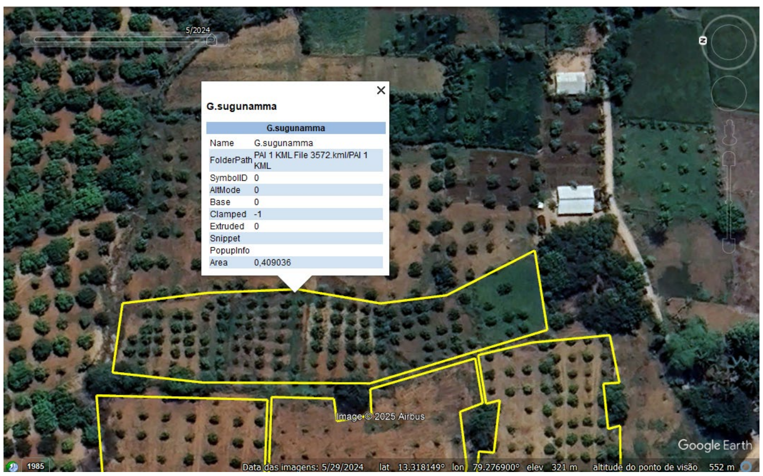


Image 2024 - Clean



Assessment 17/06/2025: Remodeled, but there was forest remaining in 2010

3- 7.Plot: K chinana papa – shrubland

Assessment: Road and Forest remnant (2010 to 2020)

Image 2010

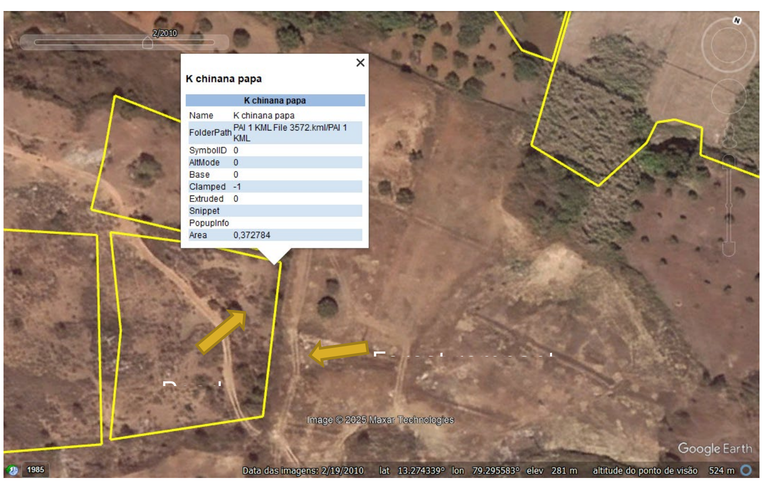


Image 2019

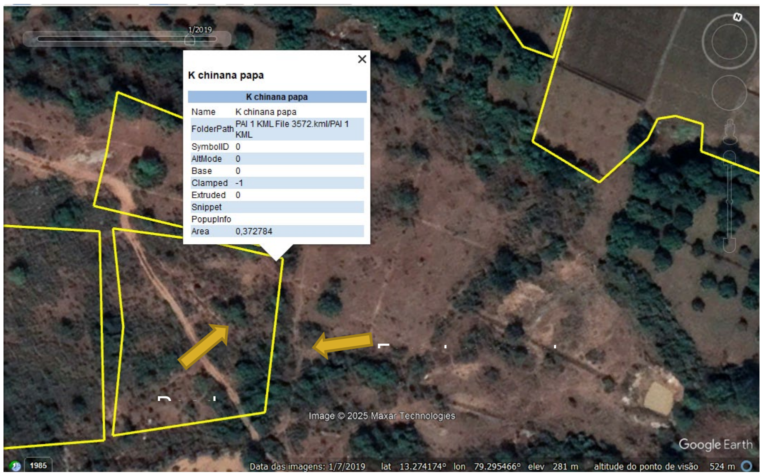
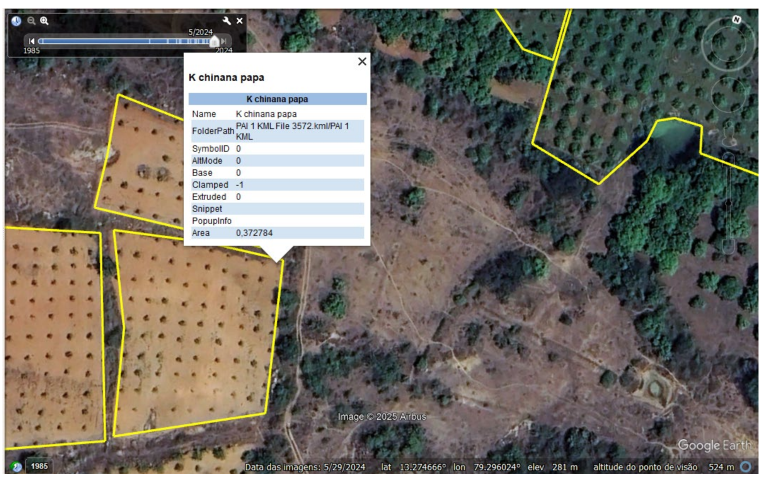


Image 2024 - Clean



Assessment 17/06/2025: There was a minor change in the boundaries, remaining with roads, remaining forest and/or scrub (Image 2019).

4- 9.Plot: Mukeshappa -

Assessment: Forest remnant (2014 to 2016)

Image 2014

Image 2016

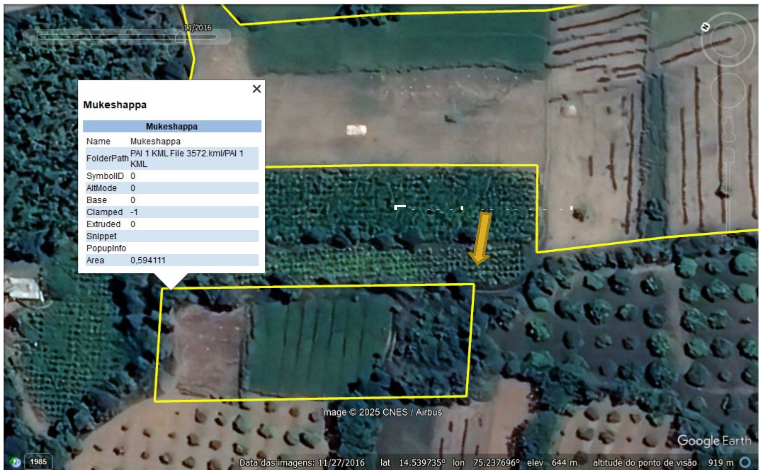


Image 2024 - Clean

Assessment 06/17/2025: There was no change in the boundaries, with remnants of forest remaining in the 10 years prior to the start of the project (Image 2014)

5- 11.Plot: Channabasappa v

Assessment: Trees on the edge and small structure (2021 to 2024)

Image 2014 - Clean

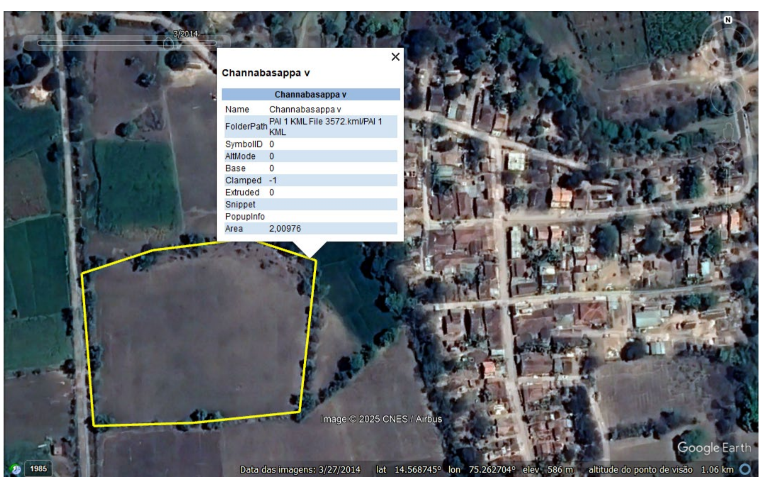
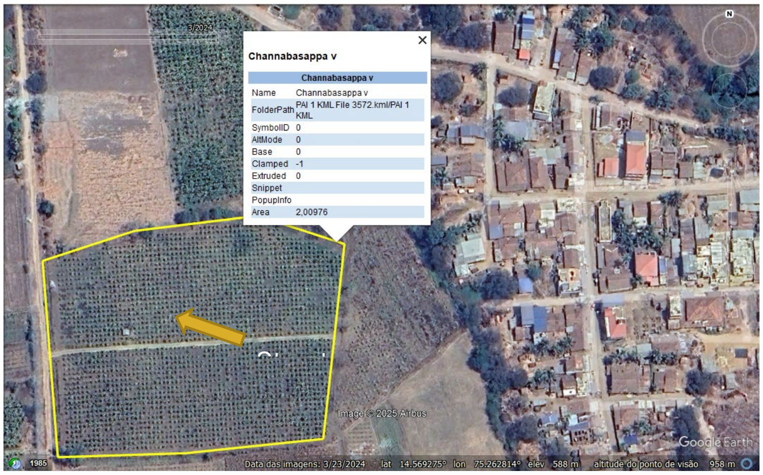
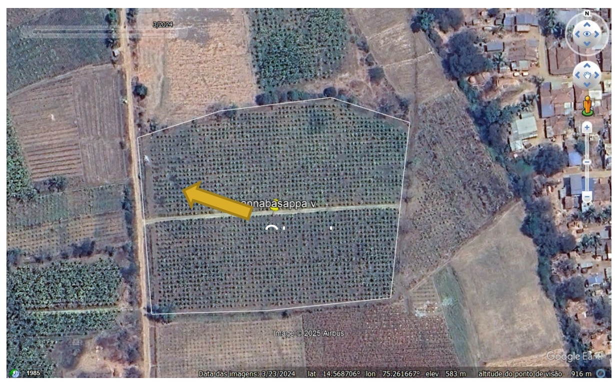


Image 2024 – Small structure



Assessment 17/06/2025:There were trees on the edge of the plot in the 10 years before the project started (Image 2016) and after the project started they built a small structure inside the plot (2024).



<u>C- After analyzing 30 more random plots, some more eligibility issues were identified, as assessed below:</u>

1- Plot: A siddareddy

Assessment: Remaining forest deforested in 2023/2024 in the year of the project's planting.

Image 2010

Image 2019

Image 2023

Image 2024

2- Plot: Sila lekthepi

Assessment: Structure within the plot in 2011. Shrubland/forest remnant from 2014 to 2018. Clearing of the area in 2018. Planting in 2019, with the expected planting date for this plot being 2021.

Image 2011

Image 2018

Image 2019

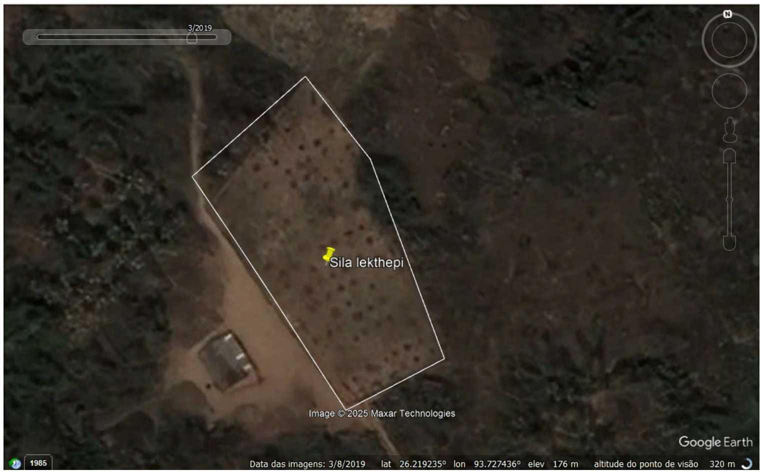


Image 2022

3- Plot: Borsing ingti

Assessment: Forest remnant from 2011 to 2015. Deforestation of the area began in 2018 and planting was carried out in 2019, as planned by the project.

Image 2011

Image 2015

Image 2018

Image 2019

4- Plot: Charge Tokbipi

Assessment: In 2011, it had a scrubland structure. In 2018, it already had a forest structure. In 2019, the area was cleared and in 2024, the image already shows the entire area planted.

Image 2011

Image 2018

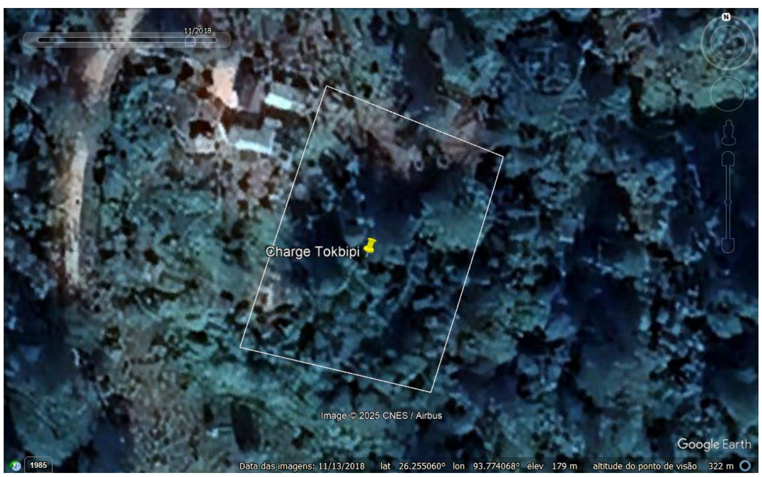


Image 2019

Image 2024

5- Plot: Salima tissopi

Assessment: In 2011, there were no crops or native vegetation in the area. After being abandoned until 2018, native vegetation took over. In 2019, the area was cleared and in 2024, the year the project was planted, the area was partially planted.

Image 2011

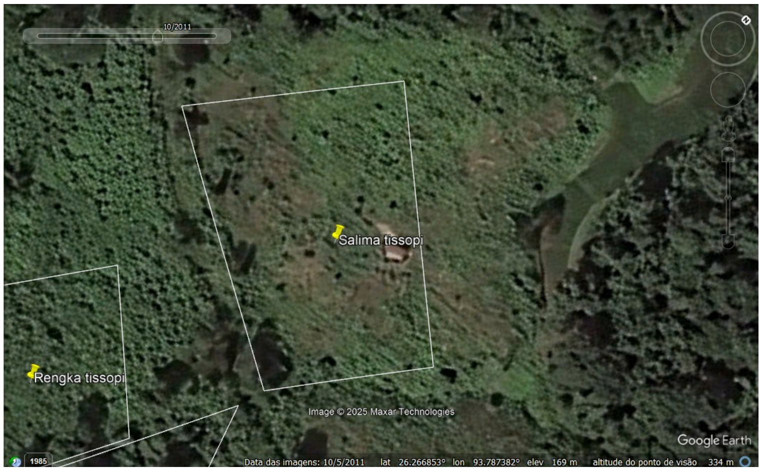


Image 2018

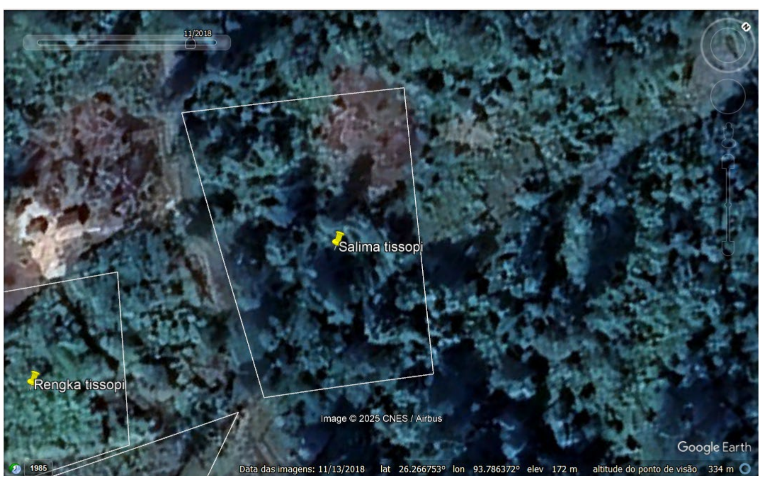


Image 2019

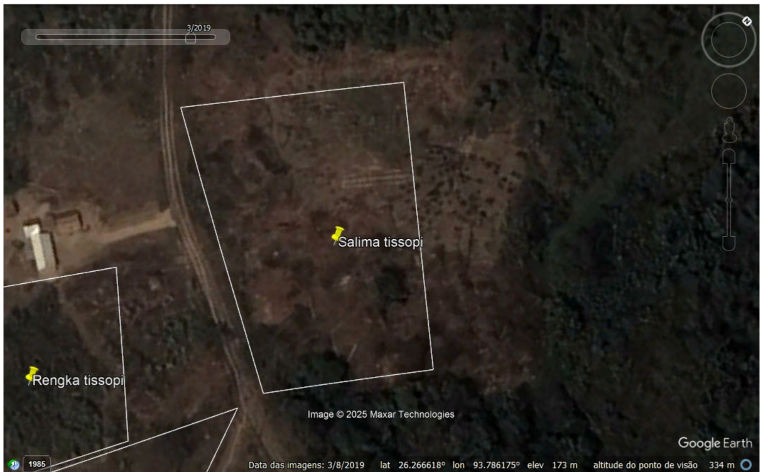
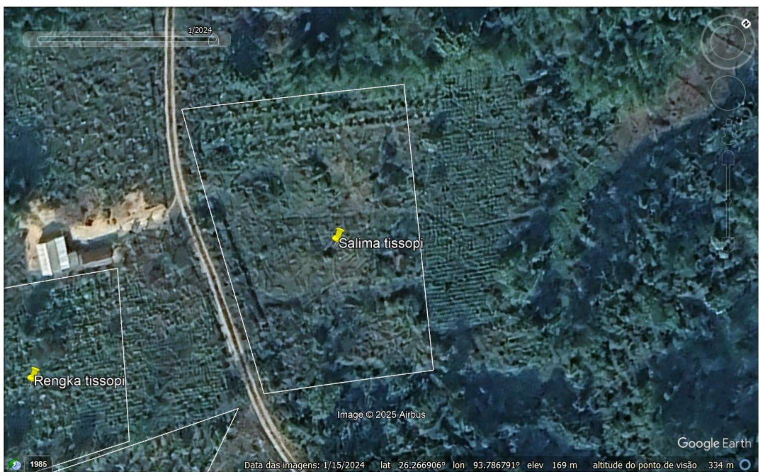


Image 2024



3. Subject to closure of point 2 above. **CL point is still open.**

4. The soil maps have been reviewed and are found appropriate. **CL point is closed.**

Project participant response	**Date:** 19/06/2025

PP has now revised all the kml files and the clarifications has been addressed. Revised kml files have been shared with VVB. B.Plot 3: G.Sugunamma, non-eligible area has been removed from the land parcel. B.Plot 7: K Chinana Papa, Before the project activity was implemented, the land parcel included a seasonal path or track that was not a permanent road. This path was occasionally used only when the land was left fallow and had no permanent features or administrative designation. It was located entirely within the private land of farmers and did not serve as an official or registered access road. After project implementation, this seasonal path is no longer in use and has been closed. B.Plot 9: Mukeshappa, this land parcel has been removed from the project. B.Plot 11: Channabasappa v, the settlement area has been revised in the land parcel KML. C.Plot 1: A siddareddy, non-eligible area has been removed from the land parcel. C.Plot 2: Sila lekthepi, this land parcel was excluded from the project due to Plantations were done prior to the project start date. C.Plot 3: Borsing ingti, this land parcel has been removed from the project. C.Plot 4: Charge Tokbipi, according to the Land Use Land Cover classification, the land parcel was categorized as fallow/shrubland.The area was cleared in 2019, and plantations were undertaken in 2022. C.Plot 5: Salima tissopi, according to the Land Use Land Cover classification, the land parcel was categorized as fallow/shrubland. The area was cleared in 2019, and plantations were undertaken in 2024.

Documentation provided by project participant	
Revised kml files, PDMR, ER calculations	
VVB Assessment	**Date: 20/06/2025**
VVB based on the review of updated KML files confirms that PP has clarified all the issues. **CL 13 is closed.**	

CL	14	Section no. 3.4	Baseline Scenario	Date: 25/05/2025
Description of CL				

According to section 3.13 of VCS Standard v4.7,

"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

According to section 3.6.13 of VCS Standard v4.7,

"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 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 PDMR, 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, degraded and degrading agricultural lands and water scarce shrub lands through the plantation of agroforestry trees across multiple states in India".

- Section 1.5 states that "The project consists of plantation of multipurpose tree species, which include (mention tree species) species to established green cover in degraded land or continues degrading land.*"*

.

- Section 3.4 states that "The land primarily consists of cropland with subsistence farming*".*

In view of above inconsistencies, PP shall clarify whether shrubland or low-output agriculture is part of the baseline. While doing so, PP must ensure that the PDMR 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 with subsistence farming**. Similarly, under eligibility criteria for inclusion of new project activity instances it is mentioned the land parcels must be **crop land or degrading land.** 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:** 05/06/2025
PP has now corrected all the discrepancies; the baseline scenario is now inline all over PDMR. • There was an editorial error in section 1.1, it has now been corrected. The activity is involved in carbon sequestration on small, degraded and degrading agricultural lands. • There was an editorial error in section 1.5, PP has now corrected the same. The list of species has been mentioned in section 1.12 of the VCS PDMR. • The pre-project scenario of the project is degraded and degrading agricultural lands, croplands with subsistence farming. The same has now been corrected and it is now consistent all over PDMR. PP has corrected the eligibility criteria for grouped project and inclusion of new project activity instances that the land parcels must be degrading agriculture land or crop land with subsistence farming. The baseline scenario is now consistent throughout the PDMR in compliance with Section 3.6.13 of the VCS Standard v4.7. PP has now transparently demonstrated 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.	

Documentation provided by project participant	
Revised VCS PDMR	
VVB assessment	**Date:** 18/06/2025
1. Upon review of the PP response and the updated VCS PDMR, the VVB confirms the following: The discrepancies in the baseline scenario description across Sections 1.1, 1.5, and 3.4 of the VCS PDMR have been addressed by the Project Proponent (PP) through appropriate revisions, aligning the description with the actual pre-project land use conditions. However, the VVB notes that **Section 1.19** still refers to the project area as comprising **"degraded shrubland and degraded land with low agricultural output"**, without acknowledging the presence of **subsistence farming**, as identified in the PRA and baseline analysis. **CL point is still open.** 2. The eligibility criteria for grouped projects and new activity instances have been clarified, specifying that land parcels must be degrading agricultural land or cropland with subsistence farming, in line with Section 3.6.13 of the VCS Standard v4.7. **CL point is closed.** 3. Based on the review of VCS PDMR, VVB confirms that the demonstration of the land-use and management practices in the project area prior to the project start, in compliance with Appendix 1 of the applied methodology is still missing in the VCS PDMR section 3.2. **CL point is still open.**	
Project participant response	**Date:** 05/06/2025
1.PP revise Section 1.19 to align it with other corrected sections (1.1, 1.5, and 3.4), accurately describing the baseline land use scenario. In PRA report actual baseline land use scenario are added. 3. PP has revised the section 3.2 of PDMR with incorporating demonstration of the land-use and management practices in the project area prior to the project start, in compliance with Appendix 1 of the applied methodology.	
Documentation provided by project participant	
Revised VCS PDMR	
VVB Assessment	**Date: 20/06/2025**

Based on the review of revised PDMR, VVB confirms the following: 1.The baseline scenario is now consistent throughout the document. **2.** PP has revised section 3.2 of PDMR incorporating demonstration of the land-use and management practices in the project area prior to the project start, in compliance with Appendix 1 of the applied methodology. **CL is closed.**

CL	15	**Section no. 3.4**	**Baseline scenario**	**Date: 25/05/2025**
Description of CI				
According to section 3.4 of VCS PDMR states that *"The land primarily consists of cropland with subsistence farming"* 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. 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 and in compliance with the "*Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities*". The PP shall provide justification, supported by evidence, to substantiate that the project area qualifies as degraded.				
Project participant response				**Date:** 05/06/2025
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. With reference to the tool, i.e. A reduction in plant cover or productivity due to overgrazing or other land management" outlined in sub section C in the section C for procedure III consist with the result of PRA survey. Based on the PRA survey it also 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				

VCS PDMR	
VVB assessment	**Date: 17/06/2025**
In response to the finding, the Project Proponent (PP) has clarified that the identification of degradation was conducted using the CDM A/R Tool for the Identification of Degraded or Degrading Lands, specifically referencing criteria under Procedure III, Section C. The PP has substantiated the claim of degradation with results from the Participatory Rural Appraisal (PRA), which confirm that the project area experienced biological degradation (decline in crop productivity), chemical degradation (due to excessive fertilizer use), and physical degradation (loss of plant cover and soil erosion linked to overgrazing). These findings are consistent with the degradation indicators prescribed by the tool and meet the requirements under Section 3.19.29 of the VCS Standard v4.7. Based on the evidence provided and alignment with the applicable degradation identification tool, the VVB considers this finding to be adequately addressed and closed. **CL 15 is closed.**	

CL	16	**Section no. 3.5**	**Additionality**	**Date: 28/05/2025**
Description of CL				
In PDMR section 3.5.2, additionality analysis; the provided information on Investment barrier analysis is not transparent on the costs involved for the identified alternative scenario.B. Therefore, PP shall clearly demonstrate the overall costs, (CAPEX & OPEX) involved for the same in section 3.5 of the PDMR.				
Project participant response				**Date:** 09/06/2025
In the PDMR, the term used for investment barrier analysis is belongs to the upfront investment for plantation activity as the high upfront expenses become a major obstacle to adopting such long-term plantation projects and long-term loans are provided to large farmers, leaving smallholders with limited financial support. These are the risk related to the plantation activity without being registered as the carbon project activity. The expense sheets of the plantation activity have been provided with the VVB.				

Documentation provided by project participant	
VVB assessment	**Date:** 18/06/2025
Upon review of the response provided by the Project Proponent (PP), VVB notes that the investment barrier analysis presented in the PDMR primarily refers to the high upfront investment requirements associated with plantation activities, particularly highlighting the limited financial accessibility for smallholders as compared to large landholders. The PP has clarified that such financial constraints present a significant risk in the absence of carbon project registration. Furthermore, VVB confirms that supporting expense sheets detailing the plantation activity costs have been submitted as evidence. Based on the clarification provided and the supporting documentation reviewed, VVB considers the information on the investment barrier to be sufficiently transparent and aligned with the requirements of the applied tool. **CL 16 is closed**.	

CL	17	**Section no. 5.1**	**Baseline Emissions (GIS)**	**Date: 25/05/2025**
Description of CL				
In section 5.1 of VCS PDMR, PP has stated that in accordance with AR Tool-14, project meets the stated conditions to consider carbon stock in trees in the baseline as zero: "*During the commencement of the Project Activity on the various small land parcels, and the land is solely used for the agricultural practices. Based on the PRA and satellite imaginary there is no evidence of shrub or trees in the bunds/boundary. These areas were traditionally used for cultivating annual/ multi seasonal crops. This practice has been a longstanding part of traditional farming. Consequently, there were no trees and shrub in the Project Area prior to the project's start date*." However during the GIS assessment of number of plots VVB has observed presence of trees before project start date. Refer to the images below: 6- Plot: Sandra nirmala				

Assessment: Forest remnant (2010) and in eligible Structures (2025)

Image 2010

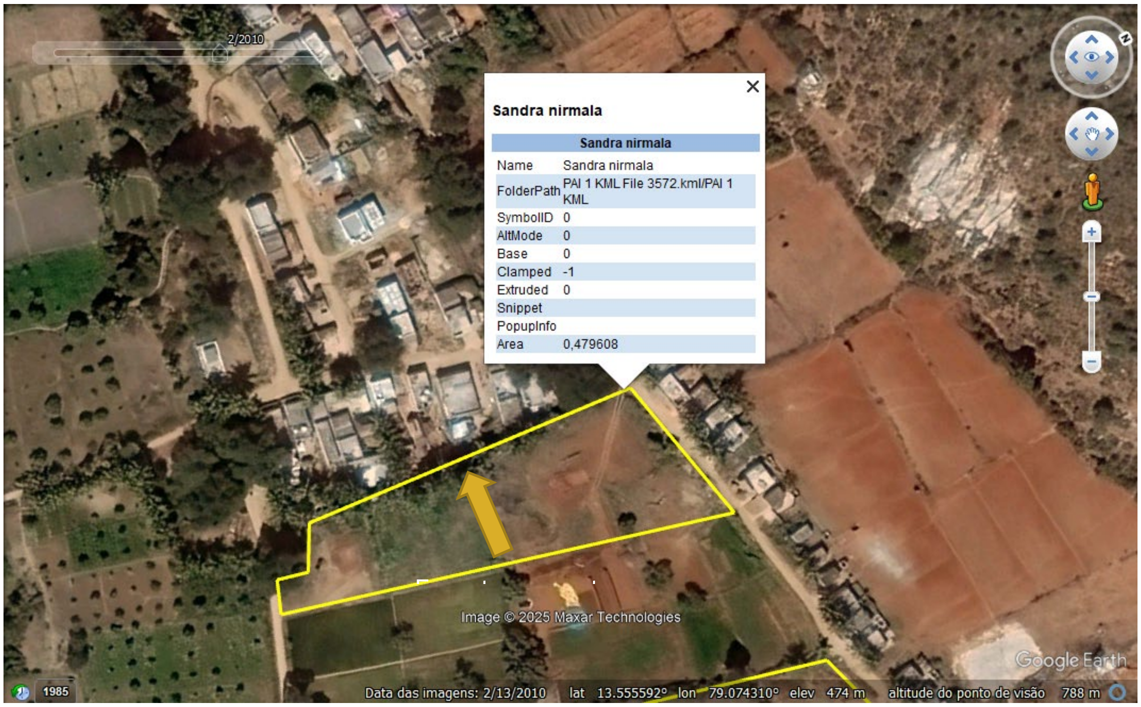
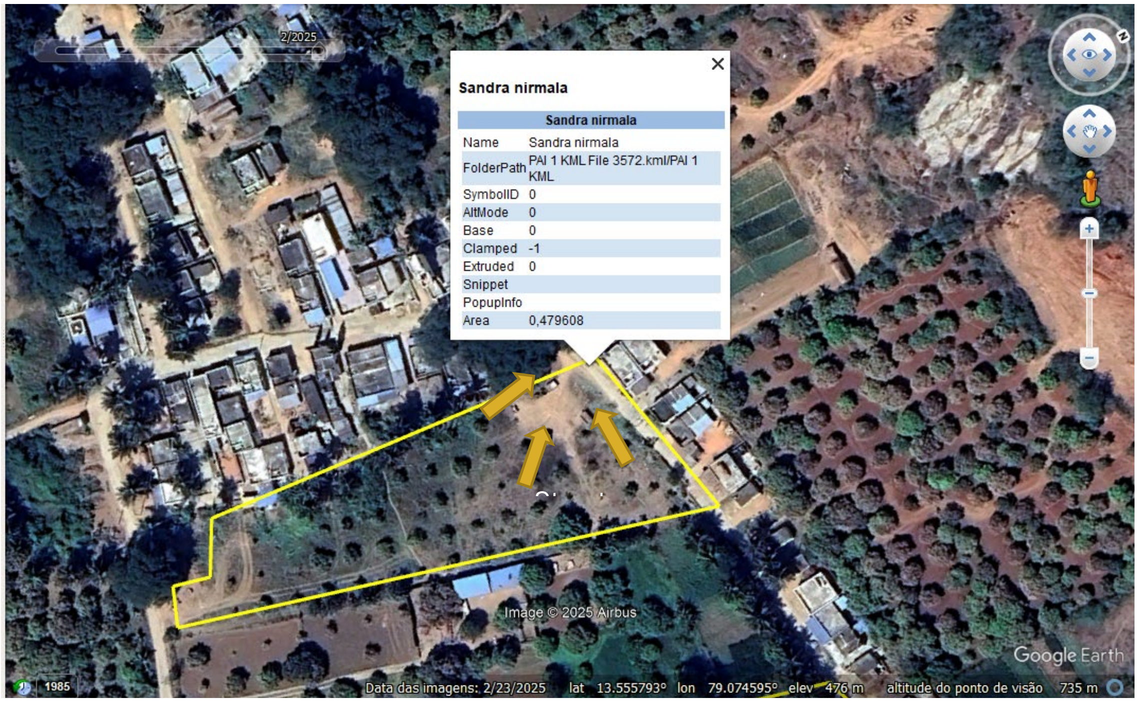


Image 2025



7- Plot: A. ramaiah

Assessment: Tree edge (2014 to 2022)

Image 2014

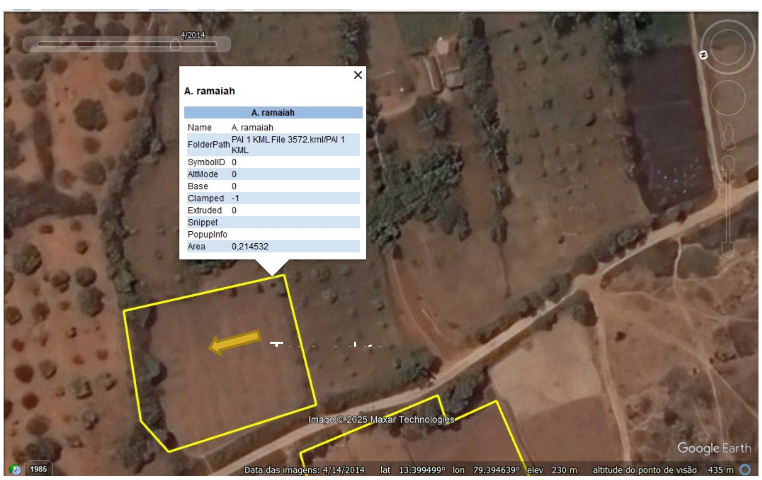


Image 2018

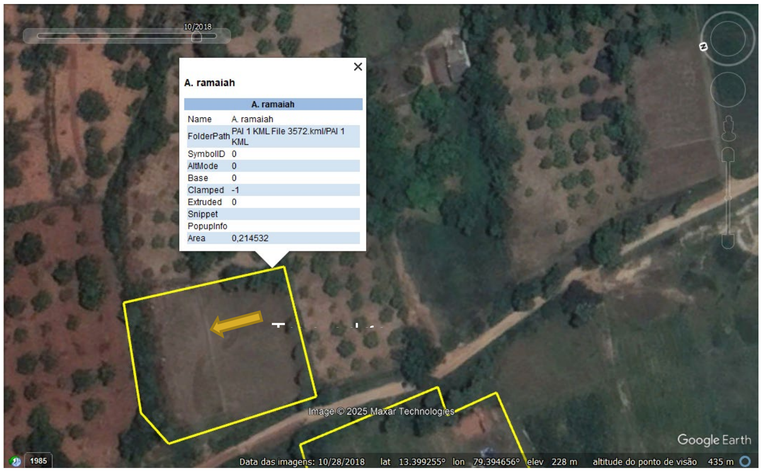
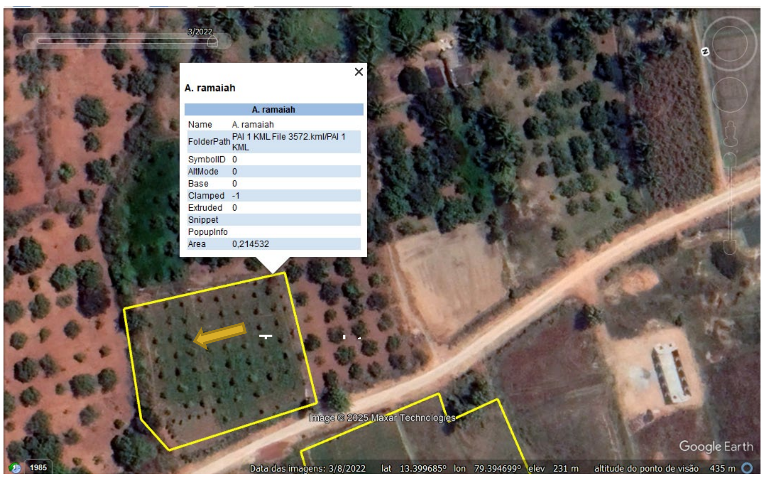


Image 2022



8- Plot: Lakshman Raju

Assessment: Forest remnant (2014 to 2022)

Image 2014

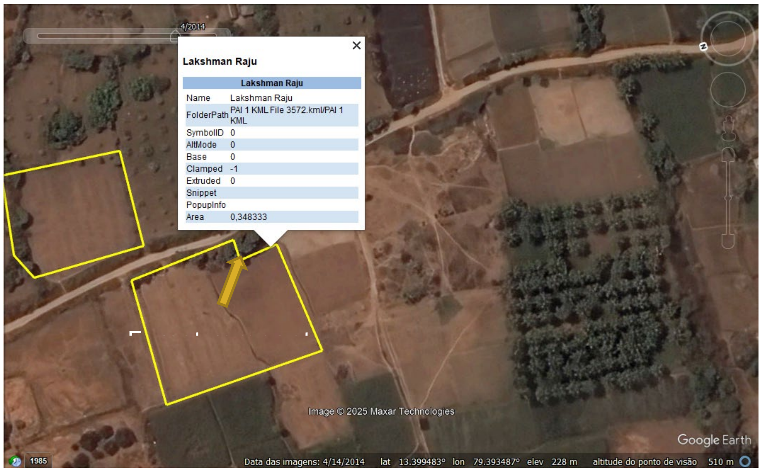


Image 2018

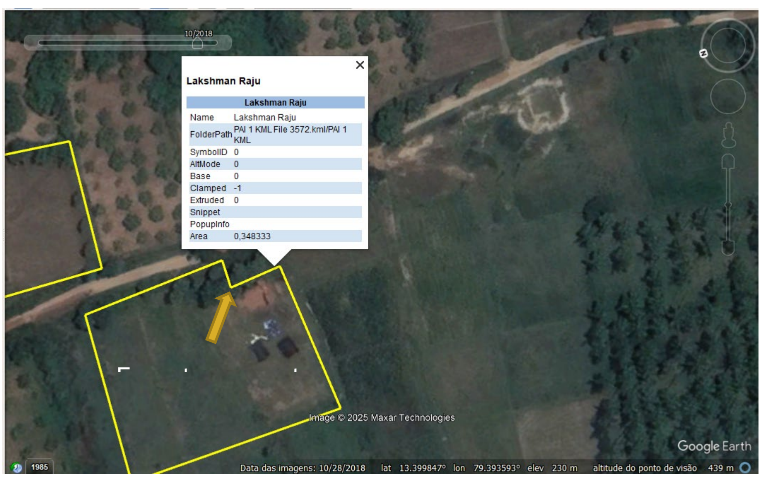
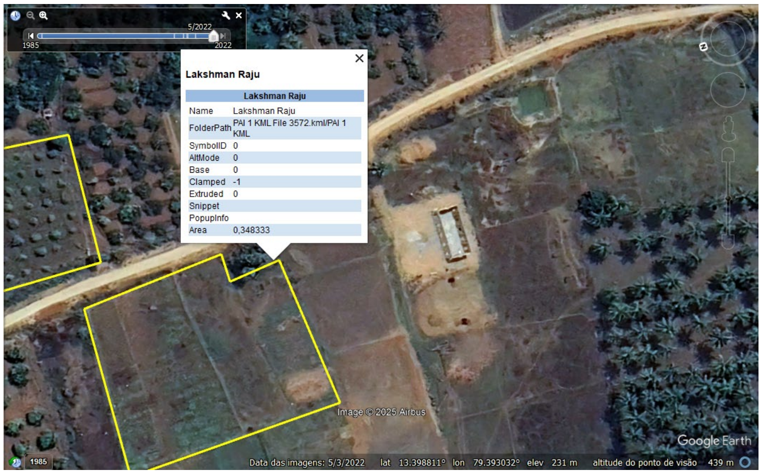


Image 2022 - Clean



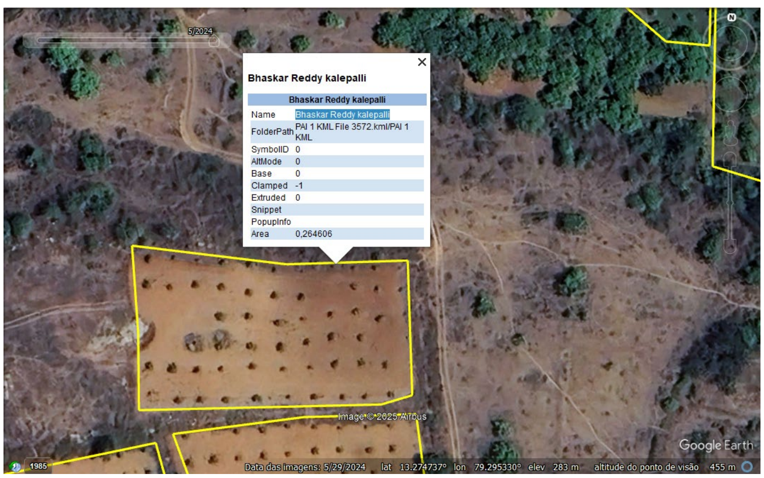
9- Plot: Bhaskar Reddy kalepalli

Assessment: Road and Forest remnant (2010 to 2020)

Image 2010

Image 2019

Image 2024 - Clean



Keeping this in view, PP shall clarify how the three conditions outlined in paragraph 11 and 12 of AR TOOL-14 has been fulfilled for considering carbon stocks in baseline as zero and also PP shall account for the carbon stocks present in the baseline.

Project participant response	**Date:** 05/06/2025

As per the PRA survey, and project implementation and management plan the baseline trees will remain undisturbed in the field until its life cycle. Proper spacing will be maintained for the plantation activity for the continuous growth, if there is any baseline tree present in the project area. pre-project trees will neither be harvested, nor cleared, nor removed, and baseline trees will not suffer mortality due to competition from trees planted in the project or damage from the implementation of project activities, as no machinery has been used for preparation or tree plantation. Baseline trees will not be accounted during carbon stock monitoring only the trees planted solely for this project will be inventoried.

PP has now provided the justification to consider carbon stock in trees in the baseline as zero, in accordance with AR Tool-14, in section 5.1 of VCS PDMR.

Documentation provided by project participant	
Revised VCS PDMR	
VVB assessment	**Date:** 18/06/2025
VVB has reviewed the justification provided by the Project Proponent and confirms that baseline trees present within the project area will be clearly identified and monitored separately from trees planted as part of the project activity. It has also been confirmed that pre-project trees will not be harvested, cleared, or removed, and will not experience mortality due to competition or damage from project interventions, as no mechanical equipment has been used for land preparation or planting. This approach is consistent with the provisions of AR-TOOL 14, allowing the baseline carbon stock to be considered as zero. Based on the clarification, the VVB finds the justification acceptable. However, PP is requested to include the same in SOP also. **CL 17 is open.**	
Project participant response	**Date: 19/06/2025**
The PP has revised the Standard Operating Procedure (SOP) to incorporate specific precautions and care measures for baseline trees.	
Documentation provided by project participant	
Updated SOP-3572	
VVB Assessment	**Date: 20/06/2025**
VVB based on the review of revised VCS PDMR and SOP confirms that confirms that baseline trees present within the project area will be clearly identified and monitored separately from trees planted as part of the project activity. It has also been confirmed that pre-project trees will not be harvested, cleared, or removed, and will not experience mortality due to competition or damage from project interventions, as no mechanical equipment has been used for land preparation or planting. **CL is closed.**	

CL	18	**Section no. 5.1**	**Baseline Emissions**	**Date: 25/05/2025**
Description of CL				
In the VCS PDMR, it is stated that: *"The land parcels involved in the project undergo degrading cropland with a periodic cycle of trees in the cycle of clearing and regrowing traditional crops, resulting in biomass oscillation between minimum and maximum values every 90 to 180 days. Consequently, as per AR-TOOL 14, clause 5.12(f), the change in carbon stock in shrubs (ΔCSHRUB_BSL,t) in the baseline scenario is zero."* In accordance with the requirements of AR-TOOL 14, clause 5.12, PP shall substantiate this assertion by providing supporting documentary evidence or by presenting findings from participatory rural appraisal (PRA) that confirm the applicability of the stated scenario to the project area.				
Project participant response				**Date:** 05/06/2025
As part of the baseline assessment, the Project Proponent (PP) conducted a Participatory Rural Appraisal (PRA) to validate the relevance and potential success of the project. The PRA findings indicate that the vast majority of farmers (over 95%) are engaged in cultivating traditional annual crops. The PRA report has been submitted to the Validation and Verification Body (VVB) for reference. According to Section 3.3 of Chapter 3 in the *Good Practice Guidance for Land Use, Land-Use Change and Forestry*, annual crops are harvested each year, meaning there is no long-term carbon storage in aboveground biomass. Therefore, based on this guidance and the PRA findings, the selected scenario is considered appropriate for the project area, and the change in carbon stock in shrubs ($\Delta C_{SHRUB\_BSL,t}$) under the baseline scenario is deemed to be zero.				
Documentation provided by project participant				
Revised VCS PDMR PRA Summary Report				
VVB assessment				**Date:** 17/06/2025

The Project Proponent has provided justification for applying the baseline assumption under Clause 5.12(f) of AR-TOOL 14, which requires that the change in carbon stock in shrubs (ΔCSHRUB_BSL,t) be considered zero in croplands where short-cycle crops dominate and biomass fluctuates seasonally without long-term accumulation. This claim has been substantiated through the Participatory Rural Appraisal (PRA), which confirms that over 95% of farmers engage in traditional, annual cropping practices. Furthermore, the PRA indicates that the land is under subsistence agriculture with low productivity and no persistent tree or shrub cover, aligning with the IPCC GPG description of annual cropping systems. Based on this evidence and the alignment with AR-TOOL 14 and IPCC GPG, the VVB considers the justification to be valid. **CL 18 is closed.**				
CL	19	**Section no. 6.3**	**Monitoring Plan**	**Date: 25/05/2025**
Description of CL				
1. In accordance with VCS PDMR template guidelines, PP shall provide following “Procedures for handling non-conformances with the validated monitoring plan” in the VCS PDMR, section 6.3, the same was not transparent. 2. In section 6.1 of the PDMR, it has been noted that for the parameters “Project trees” and “Permanent Sample Plot (PSP)” the value applied is missing. PP shall provide the same. 3. PDMR section 4.1 is not transparent on the dates of on field monitoring activities conducted during the current monitoring period. PP shall demonstrate same. 4. VVB based on the review of the ER sheets and PDMR, noted that the project has been stratified based on the plantation year, species mango and mixed. However, it is unclear on how followed approach of considering species other than mango into one stratum (i.e. mixed) is appropriate and representative.				

5. The data parameters mentioned in the 6.2 of the PDMR are inconsistent with the section 7.2. PP shall provide all the parameters monitored.

Project participant response	**Date:** 02/05/2025
1. In accordance with the VCS PDMR template guidelines, "Procedures for handling non-conformances with the validated monitoring plan" has been updated in VCS PDMR under Section 6.3. 2. In Section 6.1 of the VCS PDMR, Value applied for "Project Trees" is 2,327,233 trees while the value for "Permanent Sample Plot (PSP), has been applied as 42. 3. Field monitoring activities conducted during the current monitoring period were carried out up to April 01, 2025 and have been updated in Section 4.1 of VCS PDMR. 4. The stratification approach followed for the project activity based on plantation year and species type (Mango & Mixed) is considered appropriate. As the area covered and number of trees planted under the Mango stratum across different years is significantly greater than that of Mixed species stratum for different years. Stratification of non-Mango species into "Mixed" stratum was considered as of smaller area and a smaller number of trees planted for the mixed species in comparison to Mango plantation across all years. Mango plantations contribute the majority in terms of area, tree count and biomass accumulation. 5. The data parameters mentioned in Section 6.2 & Section 7.1 have been updated to ensure consistency in data parameters monitored and for quantification of GHG emission reductions and removals.	
Documentation provided by project participant	
Revised VCS PDMR	
VVB assessment	**Date:** 18/06/2025

Upon review of VCS joint PDMR, VVB confirms the following; 1. Based on the review of revised VCS PDMR, VVB confirms that PP has updated the procedures for handling non-conformances in Section 6.3 of the VCS Joint PDMR.**CL point is closed.** 2. PP has updated Section 6.1 of the VCS Joint PDMR, applying a value of 2,327,233 trees for "Project Trees" and 42 for "Permanent Sample Plots. "However, the list of PSPs provided gives a total of 69 PSP. PP should clarify this inconsistency. **CL point is still open.** 3. VVB based on the review of revised VCS PDMR confirms that PP has revised Section 4.1 of the VCS PDMR, confirming that field monitoring activities for the current monitoring period were conducted up to April 1, 2025. **CL point is closed.** 4. Based on the review of revised VCS PDMR, the VVB confirms that the stratification approach based on plantation year and species type (Mango and Mixed) is reasonable. The PP has clarified that Mango plantations represent a significantly larger portion of the project area, tree count, and biomass accumulation compared to the other species.

	Grouping the remaining non-Mango species into a single "Mixed" stratum is considered acceptable, given their limited area and contribution to overall biomass. Thus stratification approach adopted by the PP is appropriate. **CL point is closed.** **5.** Based on the review of revised VCS PDMR, VVB confirms that the PP has updated Sections 6.2 and 7.1 of the PDMR to ensure consistency in monitored data parameters. **CL point is closed.**
Project participant response	**Date:** 18/06/2025

3. In Section 6.1 of the VCS PDMR, Value applied for “Project Trees” is 2,327,233 trees while the value for “Permanent Sample Plot (PSP), has been applied as 42. As per the Winrock model, total 42 plots were required to monitor throughout the project area. PP following the conservative approach monitored extra plots (73).

Stratum name	PSPs (Winrock)	PSPs (Monitored)
Mango 2019	2	9
Mango 2020	3	4
Mango 2021	2	7
Mango 2022	3	5
Mango 2023	1	4
Mango 2024	0	1
Mix 2019	6	7
Mix 2020	7	7
Mix 2021	9	10
Mix 2022	7	13
Mix 2023	1	5
Mix 2024	0	1

	Total	**42**	**73**
Documentation provided by project participant			
Revised VCS PDMR			
VVB Assessment			**Date: 20/06/2025**
Based on the clarification provided by PP, VVB confirms that the total number of PSPs monitored is 73. **CL is closed.**			

CL	20	**Section no.**	**NPRT**	**Date: 25/05/2025**
Description of CL				
1. Internal Risks **A. Project Management** PP is requested to provide the CVs of the management team in alignment with the selected mitigation score rating under Question 3 of the risk tool. B. Financial viability: PP to provide financial analysis sheet to confirm the projects selected payback period as per the NPRT requirements. **Natural Risks** 2. PP has assigned a score of “0” for fire, pests and disease outbreaks, and geological risks under the historical natural risk category. While supporting evidence has been submitted, it is noted that according to the NPRT tool, a risk factor can be assigned a score of zero only when it is demonstrably inapplicable to the project.				

Given that the PP has submitted evidence regarding the historical and potential significance of these risks, clarification is requested on how the risk score “0” has been justified in this context.

4. In the evidence demonstrating likelihood and significance of pests and disease outbreaks, PP has stated:

“Our project locations in Andhra Pradesh, Assam, Karnataka and Bihar are in remote areas, where limited data availability makes it challenging to provide historical records of pest and disease outbreaks in agroforestry tree plantations. However, the PP has a Project Management Manual outlining practices to prevent such occurrences. The significance has been found to be non-applicable.”

However, as per the NPRT tool guidance where specific data is unavailable, the likelihood and significance of risk should be determined using conservative estimates, ensuring potential frequency or severity is not underestimated. Considering this, PP shall reassess and update the scoring conservatively, in line with tool requirements.

5. The literature cited by PP to demonstrate the significance and frequency of extreme weather events appears to contradict the low score chosen.

Examples from the cited studies include:

- *Assam:*
    - The study (http://dx.doi.org/10.12944/CWE.17.2.15) notes a decrease in rainfall and increasing instances of flash floods due to sudden heavy rainfall events, emphasizing growing climate-related risks.
    - *Journal of Earth System Science* reports both historical flood and emerging drought risks due to erratic rainfall patterns.
- *Andhra Pradesh:*
    - Study (8)B-3937.pdf highlights that increasing monsoon rainfall during September is negatively impacting harvests.

- *MoEFCC Report (2017)* identifies Andhra Pradesh as one of the top three drought-prone states in India.
- *Assessment of Drought using Meteorological Indices* found widespread extreme drought and wet conditions over different years and districts.

- *Bihar:*
  - The study "Drought Management in Bihar" states that 19–21 districts frequently encounter agricultural drought, despite substantial annual rainfall.
- *Karnataka:*
  - The ScienceDirect article indicates that climate change has led to reduced rainfall, significantly impacting agriculture and water resources.

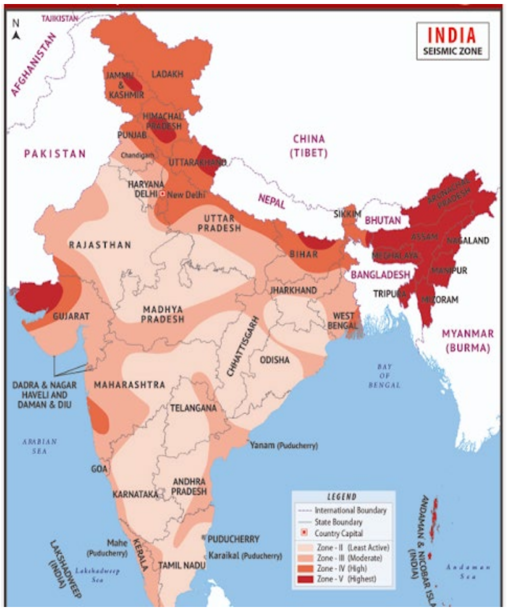
These sources consistently highlight significant and recurrent extreme weather events in the identified regions. Hence, PP is requested to reassess the scoring for extreme weather risk using conservative assumptions in line with documented regional trends.

6. In the evidence provided for Geological Risks, PP has mentioned:

"Since the regions are located in seismic zone IV, there is a possibility of earthquakes occurring with the magnitude less than 4 Richter Scale, potentially within a span of less than 10 years."

However, independent verification by the VVB reveals:

- Assam lies in **Seismic Zone V** (high risk)
- Bihar falls under **Zones IV and V**
- Karnataka and Andra Pradesh fall under **Zones II and III**



(Reference: https://en.wikipedia.org/wiki/Earthquake_zones_of_India)

Given this, PP shall justify for assigning a score of "0" for geological risk and revise the historical likelihood and significance scoring using conservative assessments based on verified seismic classifications.

7. For CID categories that are expected to result in a negative impact with a CID impact level of one, the PP is requested to reference relevant external sources (e.g., peer-reviewed studies, government publications) to support this classification, as required by the Non-Permanence Risk Tool.

8. For CID categories deemed not applicable to the project, the PP shall provide a brief, clear justification for their exclusion, outlining the reasoning behind their irrelevance to the project activity.

9. In the tool, VVB has noted that the PP has selected "Yes" in response to the question: *"Does the project demonstrate at least five criteria of adaptive capacity?"*

PP shall explicitly identify and substantiate the five adaptive capacity criteria being met, with supporting rationale and documentation, to justify the selected score.

Project participant response	**Date:**

1. **Internal Risks**

A. **Project Management**

CVs of the management team individuals with significant experience in AFOLU Projects have been provided in the supporting document under Question 3 of the risk tool.

B. In accordance with NPRT requirements, the payback period has been supported with the supporting document titled "Financial Viability".

- **Natural Risks**

2. Taking the submitted evidence in consideration for fire, pest and disease outbreak and geological risks under the Natural Risk category, the historical natural risk score has been updated to 3 (fire), 1 (pest and disease outbreak) and 1 (geological risks).

3. In the evidence demonstrating likelihood and significance of pests and disease outbreaks, our project locations in Andhra Pradesh, Assam, Karnataka, and Bihar are in remote areas. As per the participatory rural appraisal (PRA) survey, and summary report, the natural calamities in the region, like pests and diseases, are minimal, and the likelihood of occurrence is very low. However, the project proponent (PP) has a project management manual outlining practices to prevent such occurrences. The risk score has been updated taking the likelihood in consideration.

4. The literature cited to highlight the severity and frequency of extreme weather events supports the basis for assigning a low score, are as follows:

- **Assam:** In reference to http://dx.doi.org/10.12944/CWE.17.2.15, on seasonal scales, premonsoon and monsoon rainfall over Assam witnessed increasing trends with statistically high significance levels. Whereas postmonsoon and winter rainfall recorded decreasing trends, but the trend was statistically non-significant. Overall, the trend of rainfall in Assam indicates an increasing rainfall with an average value of 16.092 mm/yr. it has been found that the increasing trends of PRMS rainfall may help to perform the agricultural activities of field preparation and planting of crops at the beginning of the season. The project sites are in the upland areas not affected by the flash floods.

- **Andhra Pradesh:**
    - Study (8)B-3937.pdf highlights significant features of rainfall patterns during year 2011-2020 for the state of Andhra Pradesh. September month contributes to the highest monsoon rainfall (28.5%), followed closely by August (27.5%), July (26.3%), and June (17.7%). Monthly and seasonal rainfall exhibited an upward trend. The trend is upward and moderately significant during September and the entire monsoon season. Among the districts of Andhra Pradesh, the rainfall has less impact on the four crop yields while a strong impact is observed with three crop yields in Visakhapatnam and Vizianagaram districts. The districts with the strong impact are not covered under the project activity areas.

    - https://moef.gov.in/uploads/2017/08/Andhra-pradesh.pdf highlights Andhra Pradesh as one of the top three drought- prone states in India historically. "*Andhra Pradesh has historically been prone to drought conditions especially in Rayalaseema, Telangana, parts of Andhra region and has been third highest drought prone State after Rajasthan and Karnataka"* considering the literature cited in 2005, which analyzed drought events from year 1980-2003.

    - *Assessment of Drought in Andhra Pradesh using Different Meteorological Drought Indices* found extreme droughts and wet conditions over different years and districts. How are the Drought Categories Assigned? | National Drought Mitigation Center defines extreme drought as "the conditions that would be expected to occur once every 20 to 50 years".

Literature review for the state of Andhra Pradesh highlights erratic rainfall distribution in different districts. Coastal Andhra receives rains mainly through south-west monsoon (80%), while Rayalaseema to a large extent during the north- east monsoon. In Andhra Pradesh about 50% of the area falls under dry land agriculture and rest is irrigated 15107.pdf. To address these challenges, agroforestry emerges as a promising solution to enhance the resilience of agriculture, particularly in drought or water-deficit situations Agroforestry and Climate Adaptation: Overcoming Drought and Heat Challenges | SpringerLink. Majority of the farmers participating in the project are maintaining the plantations through irrigation, using their own bore wells or irrigation channels to ensure the survival of the project trees. Most of the tree species planted under the project activity are drought-resistant.

- **Bihar:**
    - The study (PDF) Drought Management in Bihar: Mitigation and Adaptation Strategies highlights agroforestry practices as a mitigation strategy to agricultural drought. Most of the tree species included in the project are capable to withstand a wide range of weather conditions 21 Indian Trees That can Withstand Any Weather such as :

        a) Mahogany WI Mahogany final draft.pub,

        b) Eucalyptus https://sciendo.com/pdf/10.1515/fsmu-2017-0014#:~:text=Our%20review%20shows%20an%20important%20effect%20of%20drought,signifi%20cantly%20among%20species,%20genotypes,%20hybrids%20and%20clones.

        c) Teak Dendroclimatology of teak indicates prevailing climatic conditions of tropical moist forests in India - ScienceDirect

        d) Sissoo (Shisham) Differential responses of leguminous tree species to drought stress: implications for agroforestry and restoration in arid and semi-arid climates | Agroforestry Systems

        e) Tamarind Water relations and drought tolerance of young African tamarind (Tamarindus indica L.) trees - ScienceDirect

f) Jamun Jamun Tree: A Tree of Life in Our Garden – Grow Billion Trees, IJAS_Vol 11_1st Issue_2020_4, Ecological impacts of forest fire on composition and structure of tropical deciduous forests of central India - ScienceDirect (fire resistant)

g) Mango 25 Best Drought Tolerant Fruit Trees | Low Maintenance Fruit Trees – Urban Plants™

h) Cashew Cashew | APEDA

- **Karnataka:**
    - **Assessment of Rainfall Variability over Karnataka state in India - ScienceDirect** highlights the magnitude of rainfall is higher, more than 900 mm, in the west coast Karnataka region due to orographic effect and the remaining region receives the lower and moderate rainfall between 300 and 800 mm.
    - Karnataka experienced a significant 174% excess in pre-monsoon rainfall from March to May, benefiting farmers across 31 districts as they prepare for monsoon sowing. Karnataka records 174% excess pre-monsoon rain from March to May; 31% last year | Mysuru News - Times of India

Identified extreme weather events and risk scoring indicates that prevailing weather conditions in the project areas have not significantly impacted the project sites in terms of carbon loss. Most of the tree species planted under the project activity are drought- resistant and remain largely unaffected by extreme weather events such as drought and water stress. Additionally, certain species are found to be fire and pest resistant such as Teak Ecological impacts of forest fire on composition and structure of tropical deciduous forests of central India - ScienceDirect, Jamun IJAS_Vol 11_1st Issue_2020_4 and Terminalia genus Exploring the Combretaceae or Terminalia Family of Plants | Varieties, — Mahindra Nursery. These characteristics of tree species contributes to the ecological stability of the project area and reduces the risk due to climate extremes.

5. Assam lies in Seismic Zone V which is classified as a high risk area for earthquakes. However, no earthquakes with a magnitude of 7 or above have occurred near Assam

during this time. Usually, higher magnitudes are less common than lower magnitudes The complete Assam, India earthquake report (up-to-date 2025).

It has been found that the project areas have not experienced any events exceeding a magnitude scale more than 5.5. Based on this evidence and supporting documentations, historical likelihood score has been revised to 2.

6. For CID categories that are expected to result in a negative impact with impact level 1 has been supported by the following references for mean air temperature, extreme heat and mean precipitation are as follows:

    a) Microsoft Word - 08-R-Raju Mandal

    b) (3) Extreme Temperatures and Crop Yields in Karnataka, India

    c) Severe decline in large farmland trees in India over the past decade | Nature Sustainability

    d) The risks of tree plantation in grassland and non-forest areas

    e) Carbon stocks of tree plantations in a Western Ghats landscape, India: influencing factors and management implications - PubMed

7. CID categories deemed not applicable to the project are as follows:

Cold Spells: The project areas such as Bihar, Assam, Karnataka and Andhra Pradesh are not lying in the mountainous regions to be affected by low temperature dropping to zero or as low as three or in negative 20250103_pr_3523.pdf.

River Floods: The project areas such as Bihar, Assam, Karnataka and Andhra Pradesh are not located near rivers or lying in the adjoining areas of rivers.

Land Slides: The project areas such as Bihar, Assam, Karnataka and Andhra Pradesh are not affected by rives or in the adjoining areas of rivers. About 15 per cent of our country covering over 0.49 million square kilometers is prone to landslides 1238.pdf

Tropical Cyclone: The project areas are not affected by tropical cyclone atlas_summary.pdf

8. The five adaptive capacity criteria's selected for the project are as follows:

Criteria 2 - Management plan as a supportive document has been shared

Criteria 3 - The project activity has been implemented in various agro-ecological region of India, involved in the tree plantation in different niche of the species.

Criteria 4 - The project longevity is more that 40 years which is the long-term vision to address the existing climate change issues. Moreover, collection of data on the various tree species will help in the future projection of the species diversity which will in turn aid in the climate change benefits. **Criteria 5 -** Infinite Solutions is an international "Environment & Sustainability Consulting Company", with office in India. With their in-depth experience, they are supporting private and public sector organizations by imparting tailor-made solutions to achieve Climate Change and Sustainability objectives. They have extensive experience in carbon market, climate change mitigation and adaptation projects. **Criteria 7 -** Project proponent is nature-based solution provider company based in India. PP is well aware of the farmer community challenges by rendering them with innovative solution for the climate change and Imparting knowledge about the importance of agroforestry model and mitigation strategies against climate change.
Documentation provided by project participant
Revised NPRT Excel Report NPRT Hub Notes NPRT Report

VVB assessment	**Date:** 18/06/2025
1. A & B. Upon review of the CVs and the Financial Viability Sheet, the VVB noted that the Project Proponent (PP) has submitted the CVs of Mr. Jayhind Engleng and Mr. S. Meerasa. who brings over 20 years of experience in environmental conservation, which adds significant technical credibility to the project. The financial projections indicate that the total cost of cultivation and associated operational expenses will increase steadily, reaching approximately ₹1.7 crore by year 30. Revenue from carbon credit sales is projected to begin from year 5 and will gradually increase as successive verification cycles are completed. According to the cash flow analysis, the breakeven point where cumulative revenues equal cumulative costs is expected around year 12. This indicates that the initial investment and operational expenses will be fully recovered by that time, with subsequent years generating net positive returns. Also, the VVB confirms that the project's payback period is estimated to be greater than seven years and up to 10 years, based on the current risk assessment. 2. Upon review of the submitted evidence on Fire, Geological Risk, and Pest and Disease Outbreaks, the overall risk to the project is considered minimal. Fire-related tree cover loss from 2001 to 2023 in Assam, Andhra Pradesh, Bihar, and Karnataka was low, with	

the highest losses in isolated years and no significant impact on carbon stocks. Geological risks such as earthquakes vary across regions, with Assam and Bihar experiencing higher activity, but the project's dispersed nature and prior experience mitigate potential impacts. Pest and disease outbreaks are rare, with a conservative likelihood of once in 10 years or less, and are effectively managed through training, monitoring, evaluation, and potential biological control. VVB observed that the Project Proponent (PP) has updated the risk scores as follows: Fire - 3, Pest and Disease Outbreaks (PD) - 1, Extreme Weather (W) - 2, and Geological Risk – 1 and it is acceptable to VVB.

3. The Project Proponent indicates a low likelihood of pest and disease outbreaks due to remote locations and preventive management practices. The Participatory Rural Appraisal (PRA) survey shows strong community support, with approximately 93% of farmers expecting positive social and economic impacts. Among natural calamities, pests and diseases represent a lower risk (11%) compared to extreme weather (37%) and geological risks (32%). Pest and disease outbreaks are considered rare, with a likelihood of once in 10 years or less, and are managed through training, monitoring, evaluation, and potential biological control. VVB confirms that PP has updated the risk score value for pest and disease outbreaks to 1.

4. The Project Proponent has provided a detailed response with clarifications and literature-based justifications for the low extreme weather risk score assigned to the project areas. The PP has explained that, while historical data indicates the presence of extreme weather events in the broader regional context, the **specific project sites are either upland or irrigated areas**, not significantly impacted by such events. Additionally, the use of **drought- and pest-resistant tree species** and agroforestry practices further enhances the resilience of the project.

Based on the evidence provided, including references to PRA observations, localized impact analysis, and species selection strategy, the VVB considers the justification to be reasonable and aligned with the risk scoring guidance.

5. The Project Proponent has acknowledged that Assam falls under Seismic Zone V and has revised the geological risk assessment accordingly. While the region is classified as high risk, the PP has provided evidence indicating that no significant seismic events exceeding a magnitude of 5.5 have occurred in the project area. Based on updated regional data and documentation, the **historical likelihood score has been conservatively revised to 2**, reflecting a more accurate assessment of geological risk.

The VVB considers this response reasonable and aligned with the seismic classifications and risk scoring guidelines.

6. VVB has reviewed the evidence provided and confirms that the scientific references cited are reputable and align with the Non-Permanence Risk Tool requirement to support Impact Level 1 scoring. The justification is, therefore, acceptable and demonstrates conservative judgment.

7. Based on the justifications and the general geographic risk profiles of the identified regions, the VVB considers the rationale for excluding these CID categories to be reasonable and compliant with the requirements of the Non-Permanence Risk Tool.

8. The Project Proponent (PP) has selected "Yes" to the question on demonstrating at least five adaptive capacity criteria, identifying Criteria 2 (Learning Capacity), 3 (Room for Change), 4 (Leadership), 5 (Resources), and 7 (Innovation). Upon review, the VVB confirms that the justifications provided are consistent with the definitions outlined in the tool.

Criteria 2 is supported through the existence of a project management plan, reflecting the capacity to incorporate learning into implementation.

Criteria 3 is demonstrated by the project's implementation across varied agro-ecological regions and the use of species suited to local conditions.

Criteria 4 is justified by the project's long-term duration of over 40 years and ongoing data collection to support future climate-related decision-making.

Criteria 5 is supported by the involvement of Infinite Solutions, an experienced climate consulting firm, ensuring access to technical and institutional resources.

Criteria 7 is demonstrated through the use of innovative, nature-based solutions and community-focused agroforestry models.

Based on the information provided, the VVB concludes that the project meets the requirement of demonstrating at least five adaptive capacity criteria.

CL 20 is closed.

<table>
<tr><td>CL</td><td>21</td><td>Section no.</td><td>On site inspections</td><td>Date: 28/05/2025</td></tr>
<tr><td colspan="5">Description of CL</td></tr>
<tr><td colspan="5">1. The section 6.3 of the PDMR states that “selecting a stratified random sampling procedure with a Square (30m x 30m) sample plot design” however, VVB during the onsite inspections observed that few plots were slightly deviated from the said design. Thus, PP shall clarify monitoring SOPs in place to ensure proper plot boundary demarcation and plant marking.

2. During the onsite interviews with local stakeholders, VVB observed that the trainings related to the project activities are still somewhat insufficient in some locations. PP shall provide evidence records for trainings conducted during this monitoring period along with training plan place.

3. VVB, based on the onsite inspections found that the species “Sesbania Grandiflora” is included as part of the project, however no Ex-ante ER estimations are provided for the same. PP shall clarify.

4. VVB during the onsite inspections and review of GIS files found that the plantation activities seems to be prevalent in the project region. PP shall clarify and demonstrate how the project is meeting the common practice requirements as per the AR tool-02.

- Also, demonstrate the similarities and differences of those activities in comparison to project activities.</td></tr>
<tr><td colspan="4">Project participant response</td><td>Date: 05/06/2025</td></tr>
<tr><td colspan="5">1. A uniform quadrat size of 30m × 30m has been applied to all Permanent Sample Plots (PSPs) across the project area, consistent across all strata, regardless of planting spacing or species composition. In instances where a corner tree is found dead, an adjacent tree is marked to maintain clear identification of PSP boundaries and corners. Consequently, the field implementation remains fully aligned with the documented approach used for PSPs.PP’s approach for marking the

2. A comprehensive training report, accompanied by attendance records, has been submitted as supporting documentation. The training sessions were designed to be inclusive and thorough, utilizing a specific training model. This model grouped two or more geographically adjacent villages or localities to facilitate efficient and coordinated training dissemination. Such an approach enabled the active participation of all the stakeholder representatives and project beneficiaries. To enhance knowledge transfer and outreach, the training incorporated detailed presentations and electronic media tools. Additionally, a structured and well-defined training plan was disseminated to all trainers to ensure consistency and quality in delivery.</td></tr>
</table>

3. Ex-ante calculations have been corrected with the inclusion of Sesbania grandiflora in the calculations Which was previously omitted from calculations due to an error. 4. The National Agroforestry Policy (2014) envisaged the significant contribution to afforestation target set under National Forest Policy and had launched various objectives facilitate the growth of agroforestry in India. However, diffusion of agroforestry is minimal which is evident from the diffusion rate stated in the PDMR section. Additionally, while plantation activities are present in the region, the proposed project introduces a distinct and advanced model that goes beyond common practice. Key differentiators include: • Multi-species native plantations tailored to local agro-climatic zones. • Customized land-use planning and free sapling distribution to farmers. • End-to-end capacity building, technical guidance, and GPS-based monitoring. • Structured community involvement, including local farmers, women's groups, and tribal communities. • Integration with a carbon finance mechanism, providing sustained financial incentives linked to performance and ecological outcomes.

Documentation provided by project participant	
Training records	
VVB assessment	**Date:** 18/06/2025
1. Based on the review of the VCS PDMR and the Standard Operating Procedure (SOP), the VVB has identified an inconsistency regarding the size of Permanent Sample Plots (PSPs). While both the VCS PDMR and parts of the SOP state that a uniform quadrat size of 30m × 30m has been applied across all strata, another section of the SOP mentions that a standardized plot size of 144 m² has been established for all strata. The Project Proponent's justification for deviations in some sample plots and their marking methodology is considered acceptable by the VVB. However, to maintain consistency and clarity, the SOP should be updated to reflect the applied approach accurately.**CL point is still open.** 2. VVB confirms that the PP has submitted the training report, attendance records, and the training plan as evidence. The approach of grouping nearby villages for joint sessions	

and using structured materials and media tools demonstrates an effort toward inclusive and consistent knowledge dissemination. **CL point is closed.** 3. VVB has reviewed the revised Ex-ante ER spreadsheet and confirms that the PP has included **Sesbania grandiflora** in the calculations. The correction has been appropriately incorporated. **CL point is closed.** 4. The PP has demonstrated that the project goes beyond common practice as defined under AR-TOOL-02. The diffusion of agroforestry remains limited despite national policies promoting it, and the project introduces clear distinguishing features such as multi-species native plantations, GPS-based monitoring, structured community engagement, and integration with carbon finance. The PP has also highlighted key differences in implementation scale, technical support, and incentive structures when compared to existing regional practices. These distinctions support that the project activity is not part of common practice. Therefore, The VVB finds the PP justification acceptable and confirms that the project meets the common practice requirements under AR-TOOL-02. **CL 21 is now closed.**	
Project participant response	**Date:** 18/06/2025
1. A uniform quadrat size of 30m × 30m has been applied to all Permanent Sample Plots (PSPs) across the project area, consistent across all strata, regardless of planting spacing or species composition. SOP has been updated with the standardized plot size of 900m^2 (30m×30m) to maintain clarity and consistency.	
Documentation provided by project participant	
Revised SOP	
VVB Assessment	**Date: 20/06/2025**
VVB based on the review of revised SOP confirms that the SOP has been updated with the standardized plot size of 900m^2 (30m×30m) to maintain clarity and consistency. **CL is closed.**	

Table 2. CAR from this Validation and Verification

<table>
<tr><td>CAR</td><td>01</td><td>Section no.</td><td>ERR Sheet</td><td>Date: 25/05/2025</td></tr>
<tr><td colspan="5">Description of CAR</td></tr>
<tr><td colspan="5">1. The total number of species provided in ER sheets is not consistent with the VCS PDMR. PP shall provide the same.

2. The total area mentioned in ER EX ante sheet is 1778.27 ha whereas in VCS PDMR it is mentioned as 1927.73 ha. Thus, PP shall clarify and correct the inconsistency.

3. In calculation of total Emission reductions in sheet – Total ER, the formula used for calculating annual ERs comprises of double counting of annual CO_2 sequestrated by the species leading to over estimations ERs. PP shall rectify the same.

4. In cell I36 of the summary tab of ex ante ER sheet to calculate the annual ER/ha PP has applied formula “I35/Overview!N8” in which area applied is found to be incorrect. PP shall correct the same.

5. VVB, based on the review of Ex-ante ER sheet found that no ex-ante LTA estimations are provided for harvesting species. PP shall demonstrate LTA for the same.

6. VVB, based on the review of Ex-post ER sheet tab “Vintage period” found that the values provided in the cells E11 and O4 (71,323tCO2 round down) are inconsistent. PP shall correct the same.

Also, PP shall use the round down estimates to be on conservative side.</td></tr>
<tr><td colspan="4">Project participant response</td><td>Date: 09/06/2025</td></tr>
<tr><td colspan="5">1.The total number of species (17) has been revised as throughout the PDMR and ER sheets.
2. Total project has been revised and made consistent throughput the PDMR as 1951.23 ha.

3. Annual ERR are calculated basis the annual change in biomass/AGB/Volume of the tree that ultimately result into annual CO2e removals. Hence, It do not result into double counting or overestimations of ER</td></tr>
</table>

4. Correction has been made incorporated in the Ex-ante ER sheet. 5. Harvesting practices are involved in Guava, Red sanders, Eucalyptus and Sesbania grandiflora species only which constitute less than 20% of the total project area or biomass. Hence Biomass removing of these species will not result into loss of more than 20% of carbon stock from the project area. So, as per the VCS standard requirement it doesn't fall under the harvesting definition. Hence LTA calculations are not required. 6. Correction have been incorporated

Documentation provided by project participant	
VVB assessment	**Date:** 17/06/2025
Upon review of the VCS Joint PDMR and Er Sheet, the VVB confirms the following: 1. The PP has updated the total number of species to 17, ensuring consistency throughout the PDMR and ER sheets. This correction is now addressed appropriately.**CAR point is closed**. 2. The total area has been revised to 1951.23 ha in the ER EX-ante sheet, which is now consistent with the corrected value in the VCS Joint PDMR. **CAR point is closed**. 3. In calculation of total Emission reductions in sheet – Total ER, the formula used for calculating annual ERs comprises of double counting of annual CO_2 sequestrated by the Gamhar species leading to over estimations ERs. PP shall rectify the same. **CAR is still open.** 4. The PP has corrected the formula in cell I36 of the Ex-ante ER sheet regarding the area applied. The correction has been made and is now consistent with the area values. **CAR point is closed**.	

5. The PP has mentioned that harvesting applies to Guava, Red Sanders, Eucalyptus, and Sesbania grandiflora, which constitute less than 20% of the project area or biomass. As such, LTA calculations are not required according to VCS standards. This explanation is deemed acceptable. **CAR point is closed**. 6. VVB confirms that the discrepancies in the Vintage Period section (cells E11 and O4) of the Ex-post ER sheet has been corrected. **CAR point is closed**.	
Project participant response	**Date:** 19/06/2025
.3.PP had erroneously double-counted the annual CO_2 sequestration by Gamhar trees. This error has now been corrected."	
Documentation provided by project participant	
1. Revised ERR	
VVB Assessment	**Date: 20/06/2025**
Based on the review of revised EX ante sheet, VVB confirms that the required changes has been incorporated in the calculations. **CAR is closed.**	

CAR	02	**Section no.**	**General eligibility**	**Date: 25/05/2025**
Description of CAR				
1. As per the PDMR template instructions, PP shall "*Provide information to demonstrate that the project meets requirements related to the pipeline listing deadline, the opening meeting with the validation/verification body, and the* ***validation deadline***". The information provided in the PDMR section 1.4.1 is not transparent on the **methodology AR-ACM0003 deadline**. PP shall demonstrate the same.				
Project participant response				**Date:** 27/05/2025
Project is listed on 20-July-2022 i.e., within three years of the project start date (in line with the section 3.8.2 of the VCS standard v4.7) and shall be validated before 29-June-2027 (As per 8 years deadline for ARR projects, given in the section 3.8.3 of the VCS standard v4.7).				

The opening meeting for the validation of this project activity with the validation/verification body was conducted on 27-May-2025 at Hubli, Karnataka. The project uses CDM approved A/R Large-scale Methodology: Afforestation and reforestation of lands except wetlands Version 02.0 which is eligible under the scope of the VCS program for ARR projects and follows the eligibility requirements as specified by this methodology. Under the applied methodology, project validation is authorized through 30-June-2025.
Documentation provided by project participant
VVB assessment — **Date:** 17/06/2025
The PP has provided sufficient information to demonstrate compliance with the PDMR template instructions. The project was listed on 20-July-2022, within the required three years from the project start date, as per Section 3.8.2 of the VCS Standard v4.7. The validation will occur before 29-June-2027, adhering to the 8-year deadline for ARR projects outlined in Section 3.8.3 of the VCS Standard v 4.7. The opening meeting for validation was held on 27-May-2025 in Hubli, Karnataka, in accordance with the requirements. The project uses the CDM-approved A/R Large-Scale Methodology: Afforestation and Reforestation of Lands Except Wetlands (Version 02.0), which is eligible under the VCS program, and the project follows the methodology's eligibility requirements with validation authorized through 30-June-2025. However, the PP is requested to include this deadline information explicitly in Section 1.4 of the VCS Joint PDMR as well. **CAR 02 is still open.**
Project participant response — **Date:** 18/06/2025
Under the applied methodology, project validation is authorized through 30-June-2025, in accordance with Updated Deadline to Transition from CDM ARR Methodologies | Verra, the same information has been included in Section 1.4 of the revised VCS PDMR.
Documentation provided by project participant
Revised VCS PDMR

VVB Assessment	**Date: 20/06/2025**
Based on the review of revised PDMR, VVB confirms that the required information has been updated in section 1.4 of the VCS PDMR. **CAR is closed.**	

CAR	03	**Section no. 1.13**	**Editorials & Project Location**	**Date: 25/05/2025**
Description of CAR				
1. As per the section 3.11.2 of the VCS standard, "*The description of the project location shall include the following information:* *-Total size of the project zone.* *- Details of ownership".* The same was not transparent in the PDMR section 1.13, PP shall include the same. 2. Under section 1.13 of the PDMR, it was noted that the six districts are mentioned in the state of Karnataka however, in the below table in same section includes only four districts with their corresponding latitude and longitude. PP shall correct the inconsistency. 3. In section 1.1 of the PDMR, it has been noted that the date of monitoring period is mentioned as 1st July 2018, however the project start date is July 2019. PP shall correct the inconsistency. 4. VVB based on the PDMR review noted that the no. of species reported throughout the PDMR is inconsistent. PP shall correct wherever applicable.				
Project participant response				**Date:** 05/06/2025

1. PP has now corrected the following information in line with the section 3.11.2 of the VCS standard: - Total project area covering in this project activity instance and for future instances, - Ownership details have been updated in section 1.13 of the VCS PDMR. 2. There was an editorial error in section 1.13 of the PDMR, PP has now corrected and it is now consistent overall PDMR. 3. The same has been corrected in VCS PDMR and it is now consistent with all the documents. 4. PP has now revised the list of species involved in this project activity; it is now consistent all over PDMR, ER sheets.
Documentation provided by project participant
Revised VCS PDMR ER sheets (Ex-ante, Ex-post, and Grouped ER)

VVB assessment	**Date:** 17/06/2025
Upon reviewing the VCS Joint PDMR, the VVB confirms the following: 1. Based on the review of VCS PDMR, VVB confirms that the total project area has been updated in section 1.13. However, the ownership details are still missing from the same section. PP is requested to provide the same. **Subject to closure of CAR 04.** **CAR point is still open.** 2. The inconsistency between the six districts listed and the four districts in the table has been corrected in the VCS PDMR **CAR point is closed.** 3. The discrepancy regarding the monitoring period dates has been resolved, and the dates are now consistent with the project start date of July 2019. **CAR point is closed.** 4. The species list has been revised and is now consistent throughout the PDMR and ER sheets. **CAR point is closed.**	

Project participant response	Date: 19/06/2025
1.PP has updated the PDMR with incorporating total project area, ownership detail.	
Documentation provided by project participant	
Revised PDMR	
VVB Assessment	**Date: 20/06/2025**
VVB based on the review of revised PDMR confirms that the ownership details are now updated in section 1.13 of the PDMR. **CAR is closed.**	

CAR	04	Section no. 1.13	Project Location	Date: 25/05/2025
Description of CAR				
Following VVB's GIS assessment of project shapefiles, VVB has observed the presence of human settlements, water ways and other structures (in eligible areas) in multiple plots. Refer to the images below: Plot: Sima devi Assessment: Water way Image 2010				

Image 2017 – Water way

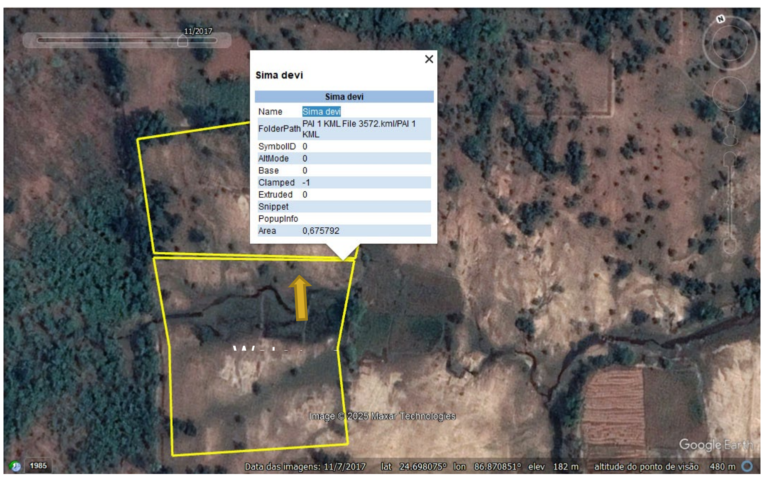
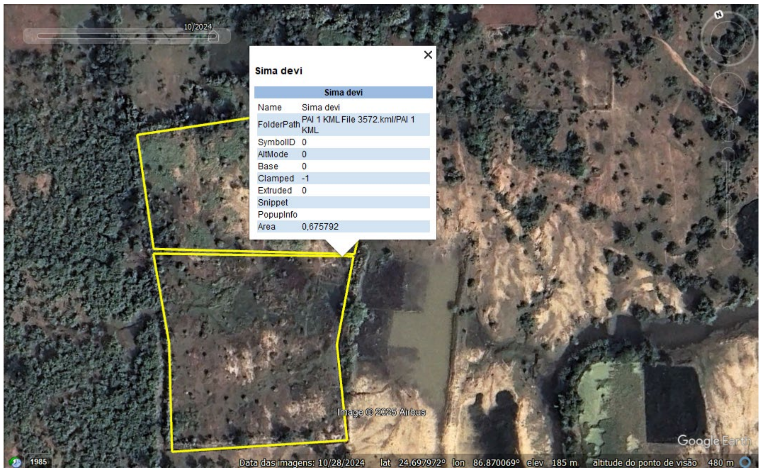


Image 2024



10- Plot: Mukeshappa

Assessment: Water tank (2014 to 2022)

Image 2012 - Clean

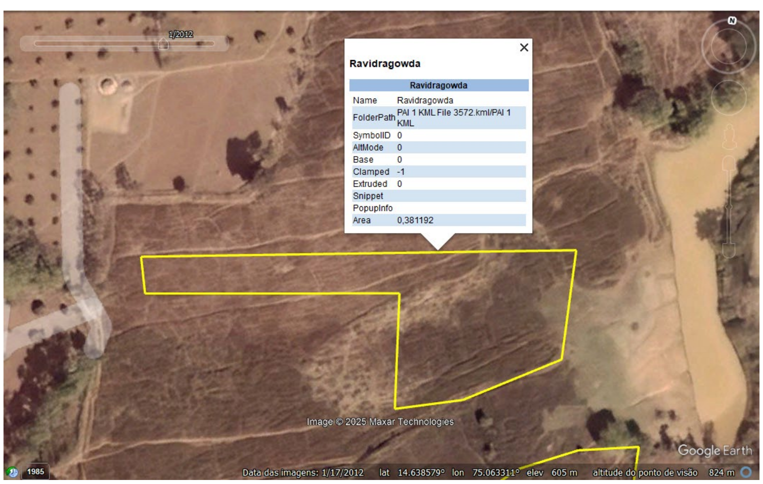


Image 2014

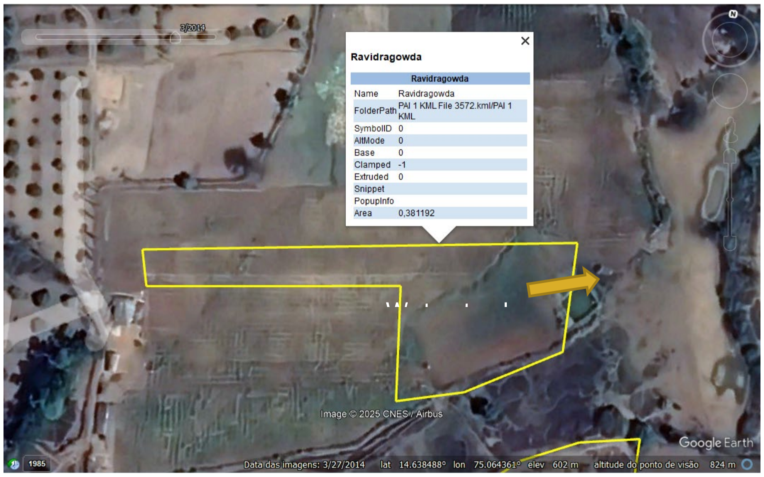
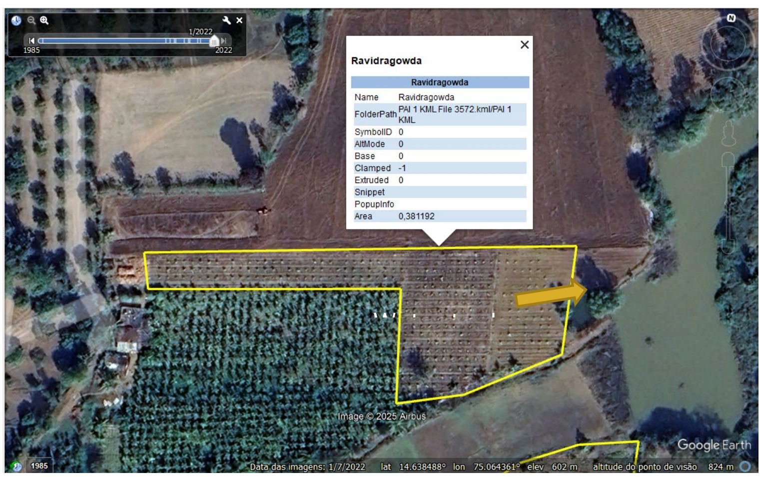


Image 2022



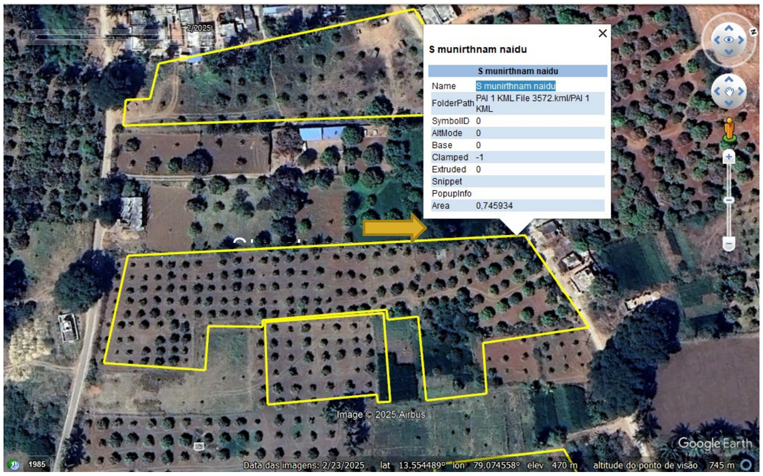
11- Plot: S munirthnam naidu

Assessment: Forest remnant (2010) and structures (2010 to 2025)

Image 2010

Image 2018

Image 2025



According to section 3.11.2 – 3 (c) of VCS Standard 4.7 requirements,

KML files shall exclude at the start of the project:

i) Any non-eligible areas (e.g., if a project activity relates to improved crop management, the KML file should only be for the participating croplands and should exclude any surrounding land that may be part of the property)

ii) Areas not part of the project area, as defined by the applied methodology (e.g., roads, water bodies, water ways, settlements).

PP shall therefore provide the updated KML files excluding all areas falling in the categories mentioned above for the entire project areas.

Project participant response	**Date:** 05/06/2025
PP has now revised all the KML files and the clarifications has been addressed. Revised kml files have been shared with VVB.	
Documentation provided by project participant	
Kml files	
VVB assessment	**Date:** 18/06/2025

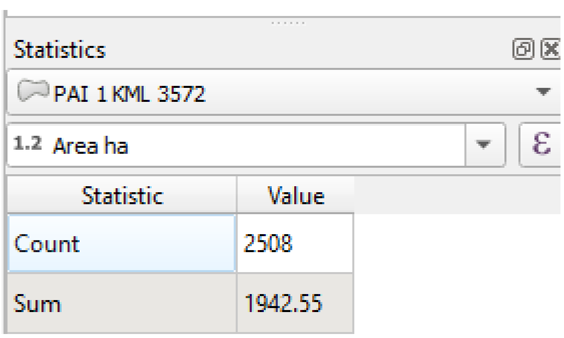
VVB based on the assessment of project shapefiles confirms that the three plots that were inserted above were reformulated by the PP and their areas are now considered eligible. However, other plots were found that do not comply with section 3.11.2 – 3 (c) of VCS Standard 4.7, as shown in the figures given in **CL 17** (**Plots B7 and C2 of the Assessment).** Therefore, the PP is requested to provide the updated KML files.

Additionally, the PP is requested to clarify the difference present in the project area, since in the VCS PDMR, section 1.1 and in the "Key Data" tab of the " Ex post PAI-1 09062025 " spreadsheet and it indicates a total project area of 1951.23 ha, however when adding the area of each parcel presented in the file "PAI 1 KML File 3572" the total is 1945.38 ha.The inconsistency in area were also found in the implementation plan of the project. Hence PP is requested to correct the same.

CAR 04 is still open.

Project participant response	**Date:** 19/06/2025

PP has revised all KML files in accordance with the findings and as per Section 3.11.2 – 3(c) of the VCS Standard Version 4.7.



According to the KML data from Google Earth, the total area is 1948.41 hectares. However, when calculated in Q GIS software, the area is found to be 1942.55 hectares. This 5.86-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 1948.41 hectares.

Documentation provided by project participant

VVB Assessment	**Date: 20/05/2025**

Based on the review of KML files VVB confirms that PP has provided the updated KML fies after addressing all the issues. As described in "6.3 Monitoring Plan" of "VCS PDMR 3572 01JUL2019-1APR2025_09062025 clean", the PP uses the ArcGis software to calculate the areas used in the project, and it is advisable to always use data from the same software to inform a given data, in addition to the fact that the information from specific GIS software is more accurate than Google Earth. **CAR 04 is closed.**

CAR	05	**Section no. 2.4.2**	**Introduction of Species.**	**Date: 25/05/2025**
Description of CAR				
In Section 2.4.2 of the VCS PDMR, the species *Citrus limon* has been identified as "Native." However, based on VVB's web-based review (https://powo.science.kew.org/taxon/urn:lsid:ipni.org:names:60454758-2#distributions), the species is classified as non-native to India and is considered to have been introduced. Furthermore, the literature provided in support appears to contradict the classification of the species as native. Accordingly, the PP shall review and correct the classification of *Citrus limon* in the documentation and demonstrate the adverse effects and mitigation, as per the section 3.19.25-26 requirements of the VCS standard. - Further according to the above requirements, for all the non-native species used in the project, PP shall demonstrate the adoptability and include explanation of possible adverse effects of its use, and a description of how the project will mitigate such risks and has mitigated such risks during the monitoring period. The same was unclear in the PD (species like Eucalyptus, Gauva, Coconut)				
Project participant response				**Date:** 27/05/2025

In line with Section2.4.2 of VCS PDMR, *Citrus limon* has been identified as “Native” species with its native nature supported by various literature sources as below: • Herbarium JCB • Citrus limon (L.) Osbeck • A Brief History of Food: Lemons • Citrus Limon - an overview | ScienceDirect Topics Based on the literature review, *Citrus limon* is native to India, therefore; adverse effects and mitigation for the mentioned species are not applicable. Demonstration for the adaptability of the species like coconut, eucalyptus and guava has not been found with adverse effects and risk on ecosystem. So, the mitigation for risks are **not applicable** and are supported by the following: • **Eucalyptus:** Eucalyptus has been adapted to native ecological conditions and is not harmful for native species and ecosystem Eucalyptus in India - R.M. Palanna. • **Gauva:** Guava has been adapted to native ecological conditions and is not harmful for native species and ecosystems. It was introduced in India in the seventeen century GUAVA. • **Coconut:** Coconut has been adapted to native ecological conditions and is not harmful for native species and ecosystem History | Coirboard. Nature-based solutions in agriculture: A review of the coconut (Cocos nucifera L.)-based farming systems in Kerala, “the Land of Coconut Trees” - ScienceDirect.
Documentation provided by project participant
Revised PDMR

VVB assessment	**Date:**18/06/2025
Upon reviewing the PP justification regarding the species used in the project, the following points were noted:	

The PP has classified *Citrus limon* as a "native" species in India, supported by literature sources including:

- Herbarium JCB
- Citrus limon (L.) Osbeck
- A Brief History of Food: Lemons
- Citrus Limon - an overview | ScienceDirect Topics

The PP has provided a clear justification based on these references, asserting that no adverse effects or mitigation measures are required for *Citrus limon*. The PP justification for the native classification of *Citrus limon* is accepted based on the provided references. No adverse effects or mitigation are required for this species, as confirmed by the PP.

Further, the PP has provided additional justification regarding the adaptability of other species used in the project, namely:

- **Eucalyptus**: Cited as adapted to native ecological conditions in India and not harmful to native species and ecosystems, with supporting literature from R.M. Palanna.
- **Guava**: Described as well-integrated into the native ecosystem since its introduction in the 17th century, with no adverse ecological effects.
- **Coconut**: The PP justifies that coconut has adapted to native ecological conditions in India and poses no risk to native species or ecosystems, with supporting references.

These species have been demonstrated to be well-adapted to the local environment, with no identified risks to ecosystem integrity.

The VVB has identified inconsistencies in the species nomenclature and classification used across project documentation. In Section 1.1, Table 1 of the VCS PDMR, the local name "Lemon" is listed with the botanical name *Citrus spp.* Additionally, the nativeness and growth models have been referenced specifically for *Citrus limon*. However, in the Ex-Post calculation sheet (Sheet i=7 – 2019 mixed), the species is listed only as "Lemon," while subsequent sheets (i=8 – 2020 mixed, i=10 – 2022 mixed, and i=11 – 2023 mixed) also include "Sweet orange."

The Project Proponent is requested to clarify the specific citrus species planted, ensure consistency in botanical naming across all project documentation, and confirm which species the growth models and nativeness justification apply to.

CAR 05 is still open.

Project participant response	Date: 18/06/2025
The species planted belongs to the genus *Citrus,* and the growth model used is specifically designed for *Citrus* species. Consistency has been maintained for both botanical (*Citrus spp.*) and common name (Citrus) throughout the revised VCS PDMR document. References for Native nature of citrus has been revised in the PDMR section 2.4.2.	
Documentation provided by project participant	
Revised VCS PDMR, Revised Ex-post ER sheet	
VVB Assessment	**Date:20/06/2025**

CAR	06	Section no. 3.3	Project Boundary	Date: 25/05/2025
Description of CAR				
In the table related to the burning of woody biomass, the Project Proponent has included CH_4 and N_2O emissions for GHG accounting. However, these gases have not been reflected in the quantifications in VCS PDMR and Emission Reduction (ER) sheets. Whereas in the provided justification, PP states that neither the burning of woody biomass nor slash-and-burn practices occur within the project boundary. This presents a contradiction. Therefore, PP shall revise the inclusion/exclusion of GHGs in accordance with the project scenario and applicable methodology along with appropriate justification. The ER sheets should be updated accordingly to reflect this alignment.				
Project participant response				**Date:** 02/06/2025
There was an editorial error in the table related to the burning of woody biomass in the section 3.3, The table has now been corrected. The project activity includes CH_4 and N_2O emissions for GHG accounting due to burning of woody biomass for the purpose of site preparation, or as part of forest management. PP has now revised the justification, and it is				

now in line with the statement and the GHGs selected for accounting in PDMR and ER calculation sheets. However, no fire incidents or biomass burning have occurred during the plantation of PAI-1 that would lead to CH_4 and N_2O emissions; therefore, the emissions are considered to be zero.
Documentation provided by project participant

VVB assessment	**Date:** 17/06/2025
Based on the review of VCS PDMR. VVB confirms that the table has now been revised in VCS PDMR. The justification is deemed satisfactory to the VVB. **CAR 06 is closed.**	

CAR	07	**Section no. 5.3**	**Leakage Emissions**	**Date: 25/05/2025**
Description of CAR				
In section 5.3, VCS PDMR, the equation mentioned for estimation of Leakage due to the displacement of agricultural activities in year t i.e. $LK_{AGRIC,t}$ is not consistent with the actual equation (4) given in the AR tool 14 - 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 equation mentioned in VCS PDMR is $LK_{AGRIC,t} = (44/12) \times (\Delta C_{BIOMASS,t} + \Delta SOC_{LUC,t})$ whereas the equation 4 given in the tool is $LK_{AGRIC,t} = 44/12 * f/T_{cred} * \Delta Cd_{t}$.. PP shall correct the same.				
Project participant response				**Date:** 02/06/2025
Leakage emissions shall be calculated in accordance with Equation 4 of the applied methodology AR-ACM0003:				

$LKt = LK_{AGRIC,t}$ Where, $LK_{AGRIC,t}$ is leakage due to the displacement of agricultural activities in year t. The equations 1, 2, and 3 of the "tool 15: Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity" have been used for the leakage estimation due to the displacement of agricultural activities in year t. As per equation 1 to 3 of the tool 15, leakage shall be estimated as follows: $LK_{AGRIC,t} = (44/12) \times (\Delta C_{BIOMASS,t} + \Delta SOC_{LUC,t})$ (Equation 1) $\Delta C_{BIOMASS,t} = [1.1 \times b_{TREE} \times (1+R_{TREE}) + b_{SHRUB} \times (1+ RS)] \times CF \times A_{DISP,t}$ (Equation 2) $\Delta SOC_{LUC,t} = SOC_{REF} \times (f_{LUP} \times f_{MGP} \times f_{INP} - f_{LUD} \times f_{MGD} \times f_{IND}) \times A_{DISP,t}$ (Equation 3) However, there was an editorial error in the equation number referenced in Section 5.3 of the VCS PDMR, which has now been corrected to align with the applied methodology and Tool 15.

Documentation provided by project participant	
VVB assessment	**Date:** 17/06/2025
Based on the review of the VCS PDMR, PP has demonstrated that AR tool 15 has been used for calculating the project leakage. VVB has cross verified the equation used and their numbers with the tool applied and confirms that PP has updated the equation number in alignment with the tool. **CAR 07 is closed.**	

CAR	08	**Section no. 5.4**	**Estimated GHG Emission Reductions and Carbon Dioxide Removals**	**Date: 25/05/2025**

Description of CAR	
In VCS PDMR Section, 5.4 in the table for estimated net GHG emissions, the final vintage year has been mentioned as –"01-July-2019 to 31-December-2019". PP should correct the same.	
Project participant response	**Date:** 28/05/2025
As per the template instructions https://verra.org/documents/vcs-joint-project-description-and-monitoring-report-template-v4-4/ for Section 5.4 "Estimated GHG Emission Reduction and Carbon Dioxide Removals" of VCS PDMR, the final vintage year is defined as the calendar year of crediting period from *DD-Month-YYYY to 31-December-YYYY* . In line with template instruction vintage year "01- July- 2019 to 31-December-2019" has been mentioned for the project activity. This vintage period covers 184 days in year 2019 and the accounted GHG emissions in the Ex-ante and Ex-post Calculation sheet are based on the same period.	
Documentation provided by project participant	
VVB assessment	**Date:** 18/06/2025
Upon review of the revised VCS Joint PD&MR, the VVB notes that the vintage years still require correction. In accordance with the template requirements, the format should be "DD-MMM-YYYY to 31-Dec-YYYY. Therefore, **CAR 8 is still open.**	
Project participant response	**Date:** 18/06/2025
In line with template instruction for Section 5.4 "Estimated GHG Emission Reduction and Carbon Dioxide Removals" of VCS PDMR vintage year "01-Jul-2019 to 31-Dec-2019" has been updated for the project activity.	
Documentation provided by project participant	
Revised VCS PDMR	
VCS Assessment	**Date:20/06/2025**

VVB Based on the review of VCS PDMR, confirms that the required changes have been updated in the PDMR. **CAR is closed.**

Table 3. FAR from this Validation and Verification

FAR	01	**Section no.**	Baseline and additionality applicability demonstration for future instance	**Date: 09/11/2025**
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:** DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				**Date:** DD/MM/YYYY

APPENDIX 5: COMPETENCY CERTIFICATES OF TEAM

Carbon Check (India) Private Limited

Certificate of Competency

Chiluveri Murari

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
- [x] Validator/Verifier
- [x] Team Leader
- [ ] Acting Team Leader
- [x] Technical Expert
- [ ] Technical Reviewer
- [ ] Trainee Assessor
- [x] Assessor
- [x] Regional Expert: India
- [ ] Gender Expert
- [ ] Financial Expert
- [ ] 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
- [x] TA 14.1 - Afforestation and reforestation (except REDD & REDD+)

- [x] TA 14.1 - Afforestation and reforestation (only REDD & REDD+)
- [x] TA 15.1 - Agriculture (With Model Validation)
- [x] 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 13-01-2026 **Expiry Date** 13-01-2027

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
- [x] Validator/Verifier
- [ ] Team Leader
- [ ] Acting Team Leader
- [x] Technical Expert
- [ ] Technical Reviewer
- [ ] Trainee Assessor
- [x] Assessor
- [x] Regional Expert: India
- [ ] Gender Expert
- [ ] Financial Expert
- [ ] 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
- [x] TA 14.1 - Afforestation and reforestation (except REDD & REDD+)

- [x] TA 14.1 - Afforestation and reforestation (only REDD & REDD+)
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- [ ] 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

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
- [x] Validator/Verifier
- [x] Team Leader
- [ ] Acting Team Leader
- [x] Technical Expert
- [x] Technical Reviewer
- [ ] Trainee Assessor
- [x] Assessor
- [x] Regional Expert: India
- [ ] Gender Expert
- [ ] Financial Expert
- [ ] Plastic Waste Expert
- [ ] Health Expert
- [ ] CCB Expert
- [x] SDG Expert
- [x] Expert Social Aspect
- [x] 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
- [x] TA 14.1 - Afforestation and reforestation (except REDD & REDD+)

- [x] TA 14.1 - Afforestation and reforestation (only REDD & REDD+)
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- [ ] 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 26-11-2025 **Expiry Date** 26-11-2026

Vikash Kumar Singh
Director - Compliance

- [x] TA 14.1 - Afforestation and reforestation (only REDD & REDD+)
- [x] TA 15.1 - Agriculture (With Model Validation)
- [x] TA 15.1 - Agriculture (Without Model Validation)
- [ ] TA 16.1 Carbon Capture and Storage
- [ ] TA 2.1 - Energy Distribution
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- [ ] TA PWRP 1 - Plastic Waste Collection & Recycling

Issue Date 26-11-2025 **Expiry Date** 26-11-2026

Vikash Kumar Singh
Director - Compliance