



# Verified Carbon Standard

## BAMBOO PLANTATIONS BY FARMERS AND COMMUNITY IN THE COUNTRY



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<b>Project ID</b>	3570
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<b>Client</b>	Infinite Environmental Solutions Limited
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**Summary:****A description of the project**

**Infinite Environmental Solutions Limited** has appointed **Carbon Check (India) Private Limited** to carry out joint validation & verification of VCS project activity “**Bamboo plantations by farmers and community in the country.**” (hereafter referred to as “The project”) with regards to the relevant requirements of VCS Standard version 4.7 (dated 16 April 2024)<sup>B01/</sup>.

The VCS project titled “**Bamboo Plantations by Farmers and Communities in the Country**” is a grouped Afforestation, Reforestation, and Revegetation (ARR) initiative, with its first Project Activity Instance (PAI) located in the Karbi Anglong district of Assam, India. The project proponent is **Infinite Environmental Solutions Limited**, which has engaged **HLTEC** as the project implementer to ensure effective on-ground execution.

In the 1<sup>st</sup> PAI, project focuses on the plantation of ***Bambusa tulda***, a native bamboo species known for its positive ecological as well as socio-economic impact. It encompasses 834.33 hectares and involves the participation of 462 farmers, with plantations established in 2019, 2020, 2021, and 2022. Future project activity instances are anticipated to extend to other regions within the state Assam, India, with plans to scale up the initiative to 4,500 hectares. Project start date is 09<sup>th</sup> July 2019, with crediting period of 30 years from 09<sup>th</sup> July 2019 to 08<sup>th</sup> July 2049. Project will be maintained for period of 40 years to comply with VCS requirement of project longevity. The baseline conditions were degrading shrublands privately owned by farmers. Thus, this initiative presents opportunity for a sustainable afforestation model aimed at carbon sequestration in degrading shrublands, while simultaneously promoting the socio-economic upliftment of local communities by providing livelihood opportunities. By increasing green cover, the project contributes significantly to ecological restoration in the project area.

The project started on 09<sup>th</sup> July 2019 with an annual average GHG removal rate estimated to be **10,077 tCO<sub>2</sub>e/year**, and the net GHG removal for the entire project period (09<sup>th</sup> July 2019 to 08<sup>th</sup> July 2049 ) is expected to be **302,310 tCO<sub>2</sub>e** throughout the crediting period of 30 years, Considering bamboo harvesting, LTA is calculated and it is capped at **270,010 tCO<sub>2</sub>e** and expected to be reached at 6<sup>th</sup> year based on ex-ante calculations.

For the current monitoring period (09-July-2019 -- 16-December-2024), Ex-post calculations are done based on monitored data. The project has achieved net GHG removal **205,146 tCO<sub>2</sub>e**. Based on monitored data LTA is expected to be reached at 15<sup>th</sup> year with **562,816 tCO<sub>2</sub>e**.

The project is designed in compliance with the CDM methodology AR ACM0003: Afforestation and reforestation of lands except wetlands v2.0<sup>B02/</sup>. The five carbon pools selected for the project are:

- **Above ground biomass (AGB)**
- **Below ground biomass (BGB)**
- **Soil organic carbon (SOC)**

**A 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" or "CC IPL") to carry out the Joint Validation and 1<sup>st</sup> periodic verification of the grouped project and 1<sup>st</sup> PAI of "**Bamboo plantations by farmers and community in the country**" with regards to the relevant requirements of VCS Standard version 4.7<sup>B01/</sup>.

**Table I: Dates & Timelines of VCS grouped project**

<b>Start date</b>	09 <sup>th</sup> July 2019
<b>Crediting period</b>	09 <sup>th</sup> July 2019 to 08 <sup>th</sup> July 2049 (30 years)
<b>First monitoring period</b>	09 <sup>th</sup> July 2019 to 16 <sup>th</sup> December 2024
<b>Date of monitoring</b>	09 <sup>th</sup> July 2019 to 16 <sup>th</sup> December 2024

**The 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<sup>B01/</sup> the grouped project eligibility<sup>01/</sup>, project's baseline<sup>11/</sup>, monitoring plan<sup>13/</sup>, project implementation<sup>13/</sup>, carbon captured by the project<sup>02/</sup>, methodology requirements and compliance with the relevant VCS<sup>B01/</sup> and host party criteria. These are validated and verified 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 joint PD and MR<sup>01/</sup>. Carbon Check's objective is to perform a thorough, independent assessment of the validation and verification of the grouped project. Verification objectives include the evaluation of ex-post assessment of the monitored GHG data and information and should be in conformance with monitoring plan and are materially accurate.

**Validation and Verification Scope** is defined as an independent and objective review of the VCS Joint Project Description & Monitoring Report against the relevant criteria and guidance documents provided by VCS including the following:

- VCS Program Guide (v4.4, dated 29 August 2023)
- VCS Standard (v4.7, dated 16 April 2024)
- VCS Program Definitions (v4.5, dated 16 April 2024)
- Registration & Issuance Process (v4.6, dated 16 October 2024)
- AFOLU Non-Permanence Risk Tool (v4.2, dated 03 May 2024)
- VCS Validation and Verification Manual (v3.2, dated 19 October 2016)

Based on the requirements above, the VVB has assessed if the project meets the applicability criteria of the selected baseline and monitoring methodology, "AR-ACM0003: Afforestation and

reforestation of lands except wetlands -Version 02.0<sup>/B02/</sup>. VVB has also assessed the claims and assumptions made and further achieved in the VCS Joint PD & MR<sup>/01/</sup> in accordance with the monitoring plan provided in the VCS Joint PD & MR<sup>/01/</sup>.

### **The method and criteria used for validation and verification**

To conduct the validation and verification audit, Carbon Check (India) Private Limited (CCIPL) has conducted an assessment including a desk review of the Joint Project Description & Monitoring Report <sup>/01/</sup> and supporting documents<sup>/APPENDIX 3: Supporting documents/</sup> in compliance with the requirements stated in the VCS Validation and Verification Manual v3.2. Thereafter, verified the details and information from VCS Joint PD & MR<sup>/01/</sup> by conducting an on-site inspection from 25<sup>th</sup> March 2025 to 27<sup>th</sup> March 2025.

### **The number of findings raised during validation and verification**

During the joint validation and verification, a total of 26 findings have been raised, which includes 04 Corrective Action Requests (CARs), 22 Clarification Requests (CLs) and 00 Forward Action request (FAR). All findings were successfully closed after review of necessary documents and updates.

### **Any uncertainties associated with the validation and verification**

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

### **Summary of the validation and verification conclusions**

Based on the on-site inspection<sup>/VI01/-VI31/</sup> and the review of the VCS Joint PD & MR<sup>/01/</sup> and supporting documents, the CCIPL team confirms that the project Joint PD & MR<sup>/01/</sup> has been developed taking appropriate assumptions and values in compliance with the requirements of VCS Standard v4.7<sup>/B01/</sup> and the applied methodology<sup>/B02/</sup>. Also, the VV team, based on the review of VCS Joint PD & MR<sup>/01/</sup>, confirms that the project has been implemented in line with the VCS requirements<sup>/B01/</sup>, methodology requirements<sup>/B02/</sup> and monitoring plan stated in the VCS Joint PD & MR<sup>/01/</sup>.

Carbon Check (India) Private Limited has been commissioned by the Infinite Environmental Solutions Limited to perform joint validation and verification of VCS Grouped Project and 1st Project Activity Instance “**Bamboo plantations by farmers and community in the country**” The project monitoring activities were conducted by the PP from 25<sup>th</sup> March 2025 to 27<sup>th</sup> March 2025.

### **Validation conclusion:**

In accordance with the requirements of VCS Standard v4.7<sup>B01/</sup> and the methodology applied AR-ACM0003 v2.0<sup>B02/</sup>, the validation and verification team confirm that all the values and assumption included in the VCS Joint PD & MR<sup>01/</sup> including objectives, scope and criteria, level of assurance, baseline and monitoring plan<sup>13/</sup> are valid and applicable.

**Verification conclusion:**

The VVB, based on the on-site inspection<sup>VI01/-VI31/</sup> and the review of documents including VCS Joint PD & MR<sup>01/</sup>, confirms that the project implementation and the calculation of carbon captured by the project are in accordance with:

- Monitoring plan and other assumptions stated in the VCS Joint PD & MR<sup>01/</sup>
- Applied CDM methodology, AR-ACM0003 v 2.0<sup>B02/</sup>
- Host country regulations<sup>01/</sup>

Based on review of VCS PDMR<sup>01/</sup> and ER sheet<sup>02/</sup>, on-site assessments<sup>18/VI01/-VI31/</sup> and document review the VVB confirms:

- Total estimated ex-ante carbon removal for the 30 years crediting period is 302,310 tCO<sub>2</sub>e (including 19% buffer<sup>03/</sup>) with average annual ERs of 10,077 tCO<sub>2</sub>e/year<sup>01/02/</sup>. After deduction of buffer credits i.e. 19%<sup>03/</sup>, the estimated total VCU issuance are 254,683.
- For the current monitoring period (09-July-2019 -- 16-December-2024), Ex-post calculations are done based on monitored data. The project has achieved net GHG removal for current monitoring period is 205,146 tCO<sub>2</sub>e. After deduction of buffer credits i.e. 19%<sup>03/</sup>, the total VCU issuance are 166,168<sup>02/</sup>.

**Table II: Ex-ante carbon estimated and ex-post carbon<sup>02/</sup> (without deducting - 19% buffer) sequestered by the project:**

Year	Estimated (ex-ante) carbon sequestration	Achieved (ex-post) carbon sequestration
09 <sup>th</sup> July 2019 to 16 <sup>th</sup> December 2024	248,398 tCO <sub>2</sub> e	205,146tCO <sub>2</sub> e

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# 1 INTRODUCTION

## 1.1 Objective

The purpose of this validation and verification audit is to conduct an independent assessment of the project to determine whether the project complies with the validation 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 “**Bamboo plantations by farmers and community in the country**” (hereafter referred to as “project”) with the requirements of the Verified Carbon Standard (VCS) and the applied CDM methodology<sup>/B02/</sup>. As per the VCS PD & MR<sup>/01/</sup>, the project is owned by Infinite Environmental Solutions Limited (hereafter referred to as “PP”).

As per the VCS Joint PD & MR<sup>/01/</sup>, VVB has ascertained the following on the VCS project:

**Table III: General details**

<b>VCS category</b>	Afforestation, Reforestation and Revegetation (ARR)
<b>Applied methodology</b>	CDM Methodology “AR-ACM0003: Afforestation and reforestation of lands except wetlands -Version 02.0” <sup>/B02/</sup>
<b>Sectoral scope</b>	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<sup>/B01/</sup>, VCS Standard version 4.7<sup>/B01/</sup> and other relevant VCS requirements<sup>/B01/</sup>.
- ✓ Assessment of compliance with the applied CDM methodology AR-ACM0003 version 2.0<sup>/B01/</sup>.
- ✓ Assessment of project compliance with the relevant rules including host country legislation.
- ✓ Evaluation of monitoring plan 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, 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.
- ✓ 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 joint PD and MR<sup>/01/</sup> and other relevant supporting documents against the VCS requirements<sup>/B01/</sup> and applied methodology<sup>/B02/</sup> and tool<sup>/B03/</sup>, including the assessment of:

- ✓ Physical infrastructure, activities, technologies and processes of the VCS project<sup>/01/</sup>
- ✓ Project's physical boundaries<sup>/09/</sup>
- ✓ Project ownership<sup>/05/</sup>
- ✓ GHG sources, sinks and/or reservoirs<sup>/01/02/</sup>
- ✓ Grouped project eligibility for the inclusion of PAI<sup>/01/</sup>
- ✓ Eligibility of 1<sup>st</sup> PAI in line with grouped project inclusion criteria<sup>/01/</sup>
- ✓ Stakeholder involvement<sup>/14/</sup>
- ✓ Environmental impacts<sup>/12/</sup>
- ✓ Baseline and additionality justification<sup>/11/</sup>
- ✓ Sustainable development contributions<sup>/12/</sup>
- ✓ Monitoring plan<sup>/13/</sup> and
- ✓ Estimated GHG removals and calculation<sup>/02/</sup>

**Scope of verification:** The scope of the verification includes:

- ✓ VCS Project implementation
- ✓ Application of methodology and tools<sup>/B02/B03/</sup>
- ✓ Time period covered/ duration of monitoring period<sup>/01/</sup>
- ✓ Achieved GHG removals and ex post calculation<sup>/02/</sup>
- ✓ Adherence to the monitoring plan and SOPs<sup>/13/</sup>

The validation and verification criteria follow the guidance documents provided by VCS including the following<sup>/B01/</sup>:

- ✓ VCS Standard version 4.7
- ✓ VCS Program Guide version 4.4
- ✓ AFOLU Non- Permanence Risk Tool version 4.2
- ✓ VCS VVB Manual v3.2

### 1.3 Reasonableness of Assumptions and Level of Assurance

The assessment for validation and verification is conducted to provide a reasonable level of assurance of conformance against the defined audit criteria and materiality thresholds within the audit scope. Project uses agroforestry approach for plantations, with species specific equations to calculate for both ex-ante and ex-post carbon sequestration. During desk review, VVB has carried out through review of available literature to confirm reasonableness of assumptions and level of assurance. Based on the review of the VCS PDMR<sup>/01/</sup>, carbon calculation spreadsheets<sup>/02/</sup>, and relevant supporting evidence (i.e., peer review literature<sup>/17/</sup>, IPCC default values<sup>/B05/</sup>, species specific research studies<sup>/17/</sup>), VVB confirms that all the assumptions and statements made by PP area valid and appropriate with the possible reasonableness. Further, VVB assessed the relevant data and parameters in section 3.3.8 of this report. Indicate the reasonableness of assumptions, limitations, and methods that support a claim about the outcome of future activities.

VVB, based on the review of literature<sup>/17/</sup> confirms that the PP has appropriately adopted the species specific allometric equations developed from the review of study “Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019”<sup>/17/</sup>, confirms that this equation application is meeting the requirements of ARTool17 &14. As per CDM Tool-17, Paragraph 6, a species-specific allometric equation is valid for ex-post biomass estimation if certain conditions are met. Given the similar edaphic-climatic conditions between the project region and Myanmar<sup>1</sup>, and the fact that the equation was developed using over 30 culms with an R<sup>2</sup> value of 0.975 (well above the 0.85 threshold), which is satisfying the paragraph.6 condition (c) of the AR TOOL-17 requirements. Therefore, the equation applied is deemed to be appropriate and applicable for estimating aboveground biomass in the project activity.

VVB, based on the ex-ante carbon spreadsheet confirms that the project removal rate is 3.55 tC/ha/yr (13 tCO<sub>2</sub>e/ha/yr). Further VVB has reviewed and cross verified literature from the similar ecological conditions as follows.

Nath et al. (2015)<sup>2</sup> & <sup>/17/</sup> reported that the mean carbon storage and sequestration rates in bamboo range from 30 to 121 Mg ha<sup>-1</sup>, with annual sequestration rates between 6 and 13 Mg ha<sup>-1</sup>yr<sup>-1</sup>. The same was further supported by research conducted by P. Shanmugavel et al.<sup>/17/</sup> on biomass of bamboo species in India. In comparison, the proposed project activity estimates a rate of 3.55 tC/ha/yr or 3.55 Mg ha<sup>-1</sup> yr<sup>-1</sup>(equivalent to 13 tCO<sub>2</sub>e/ha/yr), which falls below the range indicated in the aforementioned study from the host country.

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<sup>1</sup> [Climate comparison: Myanmar / North East-India](#)

<sup>2</sup> [Managing woody bamboos for carbon farming and carbon trading - ScienceDirect](#)

Considering the estimated value calculated for current project is lower than the value reported in scientific literature, VVB deems that the project net GHG estimates are conservative and realistic

Additionally, a study titled "*Estimation of Biomass and Carbon Stock of Bamboo Species through Development of Allometric Equations*" by **ICFRE India**<sup>3</sup> reported total carbon dioxide emission reductions from bamboo ranging from 22.89 to 83.40 tCO<sub>2</sub>e/ha/yr. The estimated removal rate based on ex-ante calculations is 13 tCO<sub>2</sub>e/ha/yr, which is significantly lower than values reported in scientific literature from host country.

The above studies reported high sequestration rates as compared to the proposed project. Therefore, VVB confirms that the project estimated removal rate of 3.55 tC/ha/yr (13 tCO<sub>2</sub>e/ha/yr) including all the tree species is conservative and valid. 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. However, based on the assessment above, sectoral expertise and review of removal rate of project, VVB concludes that the carbon calculation from the project yields a plausible value and thus acceptable to the VVB.

## 1.4 Summary Description of the Project

The project, "**Bamboo Plantations by Farmers and Community in the Country,**" is a VCS grouped project, with its first Project Activity Instance (PAI) implemented in the Karbi Anglong district of Assam, India. The first PAI involves planting the native bamboo species *Bambusa tulda*<sup>4</sup> on degrading shrublands using an agroforestry approach to enhance carbon sequestration and support the socioeconomic development of the local community. The project has demonstrated compliance with the approved CDM Afforestation and Reforestation methodology, AR-ACM0003 (version 2.0)<sup>B02/</sup>

The first PAI covers 834.33 hectares of privately owned lands of 462 farmers. The Joint VCS PD & MR<sup>01/</sup> refers 4500 ha within state Assam, as a plan for the entire grouped project, which has no material impact on the validation and 1<sup>st</sup> periodic verification of this grouped project and the first PAI at time of initial registration/issuance.

The first PAI's stratification is based on year of plantation. PP has included plantations from 2019, 2020, 2021, and 2022. Stratification prioritizes the plantation years by assigning them significant weightage based on density planted.

The Pre-project scenario for the 1<sup>st</sup> PAI was degrading shrublands with presence of few baseline trees.

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<sup>3</sup> [publication26.pdf](#)

<sup>4</sup> [Bambusa tulda Roxb. | Plants of the World Online | Kew Science](#)

VVB reviewed the agreements<sup>/05/</sup> between the farmers and the Holistic Life Transforming and Empowering Community (HLTEC) which outline a collaborative effort to establish bamboo plantations for carbon credit generation. Each farmer voluntarily commits a portion of their land while retaining full ownership of the land and its produce. However, they transfer all rights to the carbon credits generated from these plantations to HLTEC. In return, HLTEC provides training, technical support, and project management. The revenue from carbon credits is shared with the farmer after deducting project-related costs. Farmers have agreed to maintain the plantation for 40 years, follow HLTEC guidelines, and allow access for monitoring and certification. The agreements emphasize transparency, mutual benefit, and long-term environmental stewardship, with the English version prevailing in case of translation discrepancies.

The VVB confirms that the project aims to restore 834.33 hectares of degrading shrublands under the first project instance on privately owned lands through plantation and reforestation in the Karbi Anglong district of Assam. The VVB has also reviewed the Standard Operating Procedure (SOP) for the Plantation Management Plan<sup>/13/</sup>, which outlines comprehensive procedures for the monitoring and management of project activities throughout the project period. Additionally, the VVB confirms that the Project Proponent (PP) has employed a stratified random sampling methodology, utilizing a square sample plot design measuring **25m x 25m** (0.0625 hectares) for permanent sampling plots. Each sample plot has been measured and marked within the designated land parcels. The sample plot size was determined using the “Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism: A Field Manual.” The number of Permanent Sampling Plots (PSPs) has been calculated using the A/R Methodological Tool, “Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities” (Version 02.1.0). The PSPs were selected from the project area parcels through random point generation using QGIS.

The project also addresses the socioeconomic aspects of the region by providing livelihood opportunities to the local community. The restoration of shrublands increases vegetation and sequesters carbon. Income from bamboo cultivation offers farmers a sustainable, long-term source of revenue, contributing to both environmental and social benefits.

As per the VCS Joint PD & MR<sup>/01/</sup>, the estimated to sequester 10,077 tCO<sub>2</sub>e annually, with a total target of 302,310 tCO<sub>2</sub>e over 30 years from 9<sup>th</sup> July 2019 to 8<sup>th</sup> July 2049. During the first monitoring period, from 9<sup>th</sup> July 2019 to 16<sup>th</sup> December 2024, the project achieved a carbon removal of 205,146 tCO<sub>2</sub>e. After including buffer reduction i.e. 19%<sup>/03/</sup>, Project has achieved 166,168 tCO<sub>2</sub>e VCUs for issuance.

The grouped project (including the first PAI) reported in the VCS Joint PD & MR<sup>/01/</sup>, the following five carbon pools are reported:

- Above ground biomass (AGB)
- Below ground biomass (BGB)

- Soil organic carbon (SOC)

## 2 VALIDATION AND VERIFICATION PROCESS

### 2.1 Method and Criteria

The validation & verification assessment has been performed through a combination of document review and on-site Inspection/ interviews<sup>/18/VI01/-/VI31/</sup> 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 2.5, Resolution of findings, APPENDIX:4 FINDING LOG have been issued to ensure that the project's conformance to all requirements<sup>/B01/B02/B03/</sup>.

The joint validation & 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 Joint PD & MR<sup>/01/</sup>, carbon sequestration calculation sheets (Ex ante & Ex post)<sup>/02/</sup> and other documents.
- ✓ Review of data and information presented by the PP to verify their completeness.
- ✓ 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.
- ✓ 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) during the on-site inspection<sup>/VI01/-/VI31/</sup>.
- ✓ Reporting and recording of assessment.
- ✓ Findings and their closure <sup>/APPENDIX 4: FINDINGS LOG/</sup>.
- ✓ Additional validation/verification activities.

- ✓ Submission of final report.

A project specific Validation and Verification plan was 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 is as follows:

- ✓ Inquiry
- ✓ Analytical testing
- ✓ Confirmation
- ✓ Recalculation
- ✓ Examination
- ✓ Retracing
- ✓ Sampling
- ✓ Cross-checking
- ✓ Reconciliation

The validation and verification of the VCS Joint PD & MR<sup>/01/</sup> were conducted in compliance with the requirement documents as stated in VCS documents<sup>/B01-B03/</sup>.

**VCS Validation and Verification Time Frame:**

A time frame envisaged for this assignment is as follows:

**Table IV: Time Frame**

Milestone description	Time
Date of contract signing with the VVB	05 <sup>th</sup> March 2025
Kickoff meeting	06 <sup>th</sup> March 2025
On-site Audit	25 <sup>th</sup> March 2025 – 27 <sup>th</sup> March 2025
DVR submission	28 <sup>th</sup> March 2025

**Sampling Plan**

**Verification Approach: Acceptance Sampling (ASP)** Refer to section 2.4

**Table V: 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 and Verifier or Outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Joint Validation & Verification findings
1.	Team Leader/Technical expert	IR	Chiluveri	Murari	CC IPL	×	×	×	×
2.	Trainee Assessor	IR	Redkar	Pranav	CC IPL	×	×	×	×
3.	Local expert	IR	Sarma	Koushiki	CC IPL	×	×	×	-

**Technical reviewer and approver of the Joint Validation & verification report**

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

## 2.2 Document Review

A detailed review of all project documentation has been conducted to ensure consistency with and identify any deviation from VCS program requirements<sup>/B01/B03/</sup> and the methodology<sup>/B02/</sup>. During the document review, CC IPL has applied standard auditing techniques to assess the quality of information provided. The validation and verification have been performed primarily based on the review of the VCS Joint PD & MR<sup>/01/</sup> and the supporting documentation.

**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)<sup>/01/</sup> requirements.

- ✓ A review of the Joint project description & monitoring report<sup>01/</sup>, monitoring methodology, paying particular attention to the applicability conditions of the methodology<sup>01/</sup>, baseline and additionality related requirements.
- ✓ A review of the monitoring plan and the project's compliance with relevant VCS criteria<sup>B01/</sup>

**For verification, this process includes:**

- ✓ 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, and
- ✓ VVB undertook independent measurements at selected PSPs to verify and cross-check the monitored data submitted by the PP.
- ✓ 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<sup>02/</sup>.

The VCS Joint PD & MR<sup>01/</sup> was initially reviewed and CCIPL requested the PP to present the supporting information and documents. Through the assessment process, the supporting documents were evaluated, and CARs and CLs were raised by the assessment team to confirm the actions taken by PP.

Refer to table in APPENDIX 4: FINDINGS LOG outlining the documentation reviewed during the Joint Validation & verification process.

## 2.3 Interviews

The table VI below describes the on-site inspection interview process and further identifies personnel, including their roles, who were interviewed<sup>18/V101-/V131/</sup> and/or provided information additional to that provided in the VCS Joint PD & MR<sup>01/</sup> and any supporting documents.

During the on-site inspection<sup>V101-/V131/</sup>, some farmers/landowners were interviewed on the VCS project and status of their plantation. The opening meeting was conducted on 25<sup>th</sup> March 2025 in, Karbi Anglong (Assam), with Infinite Environmental Solutions Limited team and the Holistic Life Transforming and Empowering Community (HLTEC) team. During period of 25<sup>th</sup> March 2025 to 27<sup>th</sup> March 2025, VVB has visited selected PSPs and interviewed stakeholders such as farmers/landowners, project implementors, MRV personnel etc. The closing meeting was held with the team of Holistic Life Transforming and Empowering Community (HLTEC) and Infinite Environmental Solutions Limited team on 27<sup>th</sup> March 2025.

During the on-site inspection<sup>VI01-VI31/</sup>, some farmers/landowners were interviewed on the VCS project and status of their plantation. VVB noted positive response from farmers. It was also confirmed by the interviewees that local stakeholder consultation took place before the implementation of the project and the farmers have provided free, prior, and informed consent to participate in the project activity. Farmers also confirmed that, during stakeholder consultations, they raised queries on species, models, soil, and harvesting, which was addressed by PP. The farmers have also confirmed their awareness regarding the grievance redress process by claiming that they can reach out to the project implementors team as needed. It was confirmed that no grievances were submitted by farmers. Considering accountability of PP, clarity of communication in grievance and ongoing communication process, negative impacts are mitigated.

**Table VI: The project representatives and stakeholders interviewed, and the topic discussed:**

Sr. No	Interview		Date	Subject
	Name	Affiliation		
1	Dr. Indu Dwivedi	Infinite Environmental Solutions Limited	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>PP and implementation partner - roles and responsibilities.</li> </ul>
2	Himanshu Sachan	Infinite Environmental Solutions Limited	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Baseline and additionality.</li> <li>Sustainability and local stakeholders meeting.</li> </ul>
3	Rajat Singh	Infinite Environmental Solutions Limited	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Organization structure, roles and responsibilities.</li> </ul>
4	Joyhind Engleng	Holistic Life Transforming and Empowering Community (HLTEC)	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>No-net Harm Assessment.</li> <li>Non-Permanence Risk Assessment.</li> </ul>
5	Katharson Engli	HLTEC, Field staff	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Ownership of the land titles</li> </ul>

6	Bimal Tisso	HLTEC, Field staff	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Ownership of carbon revenues</li> <li>Benefit sharing mechanism</li> </ul>
7	Bhagyashri Engtyai	HLTEC, Field staff	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Project implementation.</li> </ul>
8	Harbamon Rongpi	HLTEC, Field staff	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Future project plans.</li> <li>Training of personnel with respect to monitoring.</li> </ul>
9	Angtong Terang	HLTEC, Field staff	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Safeguards.</li> <li>SDGs.</li> </ul>
10	Sonjoy Rongphang	HLTEC, Field staff	25 <sup>th</sup> March 2025- 27 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>FPIC procedure.</li> <li>Grievance and ongoing communication channels.</li> </ul>
11	Babu Rongphan	Farmer, Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025	<ul style="list-style-type: none"> <li>Monitoring plan and results.</li> <li>QA/QC procedure.</li> </ul>
12	Rupson Terang	Farmer, Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025	
13	Sujit Engli	Farmer, Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025	
14	Lokhiram Tokbi	Farmer,	25 <sup>th</sup> March 2025	

		Kania village, Karbi Anglong community	
15	Her Sing Bey	Farmer,  Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025
16	Sonju Teron	Farmer,  Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025
17	Sri Man Karo	Farmer,  Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025
18	Longdili Terang	Farmer,  Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025
19	Babu Sing Ragphar	Farmer,  Kania village, Karbi Anglong community	25 <sup>th</sup> March 2025
20	Phumen Phangcin	HLTEC	25 <sup>th</sup> March 2025
21	Kamola Hanser	Farmer,  Men Taro village, Karbi Anglong community	25 <sup>th</sup> March 2025
22	Asha Ronghangpi	Farmer,	25 <sup>th</sup> March 2025

		Men Taro village, Karbi Anglong community	
23	Sandip Terang	Farmer,  Men Taro village, Karbi Anglong community	25 <sup>th</sup> March 2025
24	Rajesh Hanse	Farmer,  Men Taro village, Karbi Anglong community	25 <sup>th</sup> March 2025
25	Babu Rongphang	Farmer,  Men Taro village, Karbi Anglong community	25 <sup>th</sup> March 2025
26	Rohan bey	Farmer,  Men Taro village, Karbi Anglong community	25 <sup>th</sup> March 2025
27	Dibi sing Kramsa	Farmer,  Chandra sing kramsa village, Karbi Anglong community	25 <sup>th</sup> March 2025
28	Kadom Roghongbi	Farmer,  Men taro village	26 <sup>th</sup> March 2025
29	Rajen Kro	Farmer,  Men teron village	26 <sup>th</sup> March 2025
30	Lokharam Togbi	Farmer,  Kania bey village	26 <sup>th</sup> March 2025

31	Sarin Terang	Farmer, Kania bey village	26 <sup>th</sup> March 2025	
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## 2.4 Site Visits

The joint validation and verification on-site inspection/interviews<sup>/18/ & /VI01/-/VI31/</sup> was conducted from 25<sup>th</sup> March 2025 – 27<sup>th</sup> March 2025. A ground truthing of the project area was conducted during the on-site inspection and members of the CCIPL Team visited randomly selected permanent sample plots. The first PAI’s stratification is based on year of plantation. For current verification, PP has included plantations from 2019, 2020, 2021, and 2022. Stratification prioritizes the plantation years by assigning them significant weightage based on plantations done (demonstrated in table below).

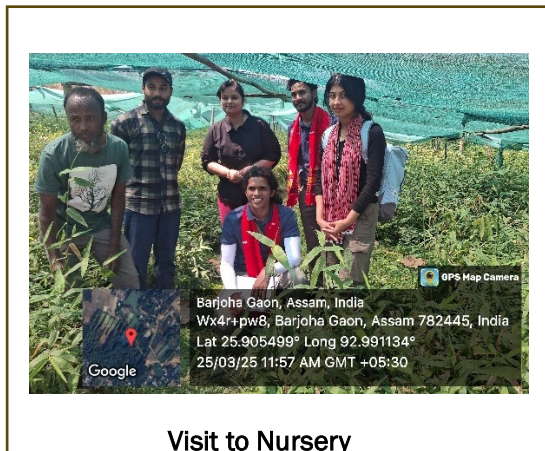
VVB confirms that the Project Proponent (PP) has employed a stratified random sampling methodology, utilizing a square sample plot design measuring **25m x 25m** (0.0625 hectares) for permanent sampling plots. Each sample plot has been measured and marked within the designated land parcels. The sample plot size was determined using the “Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism: A Field Manual, “The number of Permanent Sampling Plots (PSPs) has been calculated using the A/R Methodological Tool, “Calculation of the Number of Sample Plots for Measurements within A/R CDM Project Activities” (Version 02.1.0). VVB has conducted acceptance sampling within the project boundary of 1<sup>st</sup> PAI i.e. project area from Karbi Anglong district of Assam. VVB confirms that no material discrepancy has been found.

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 using Raosoft sampling software <http://www.raosoft.com/samplesize.html>. The total permanent sample selected by PP i.e., 43 sample plots. Accordingly, VVB team plan to take 05 representative samples from the designated project region included under the project activity for the reported monitoring period with pro-rata sample size calculated based on sample size taken by the PP (i.e., weightage of sample size for a project area taken by PP) multiplied by the VVB sample size, further VVB confirms that sample size selected is representative of project areas.

PP’s population size/ No. of PSPs- 43. The stratification for the first Project Activity Instance is based on the year of plantation.

Year of plantation	PSPs	VVB population size- 05
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2019	30	2
2020	10	1
2021	2	1
2022	1	1



The VVB has conducted on site interviews with the farmers/land owners corresponding to the randomly selected plots for acceptance sampling as mentioned above. During the interviews, VVB observed and confirmed that the plantations have been done from 2019 to 2022. The size of the land parcels varies from 3 bigha to 15 bigha (Bigha is local unit of land

measurement. 7.5 Bigha = 1Ha). The details of the interviews and list of interviewees are mentioned in sections 2.3 and 2.4 of this report. Further, VVB noted that the project location falls under the jurisdiction of an autonomous district council, i.e. the Karbi Anglong Autonomous Council. This council has jurisdiction over the two districts Karbi Anglong and West Karbi Anglong. This has been confirmed by the VVB via interviews with representatives of the PP as well from the website: <https://karbianglong.gov.in/>. Therefore, land ownership in the villages of the region is usually determined by the village headman which has been confirmed by the VVB via interviews with the farmers/ land owners/ relatives of the land owners. The same has been cross checked based on the land ownership certificates which is signed between the village headman and the land owner<sup>105/</sup>. Furthermore, the VVB has also confirmed that before project implementation, land was fallow, unattended shrubland with no activity. For current project implementation, saplings were provided by the project implementors, and the farmers confirmed that there is no use of any kind of fertilizers in the plantations.

It was also confirmed by the interviewees that local stakeholder consultation took place before the implementation of the project and the farmers have provided free, prior, and informed consent to participate in the project activity. The farmers have also confirmed their awareness regarding the grievance redress process by claiming that they can reach out to the project implementors team as needed. The longevity of the project was confirmed to be 40 years during the interviews with the farmers, confirming that they are aware of the same. The farmers have also confirmed that they are aware of carbon credits and the percentage of revenue sharing for the same. This has also been confirmed by the verification team from the signed agreements which mention the percentage sharing of the credits. The mature bamboo is harvested and sold by the farmers or used for household purposes such as for making furniture or house fences, etc.



It was also noted that none of the farmers claimed any negative impacts, issues, disputes regarding the land. Neither have they complained of any natural calamities, fire incidents, flooding, pest attacks or plant diseases affecting the plantation. It was also confirmed that PP has ensured the safeguard throughout the project implementation. The benefits mentioned by them include revenue earning from selling bamboo and as well as domestic usage of bamboo. Therefore, it was also confirmed that the farmers are pleased to be participating in the project activity and have shown active interest in doing and continuing the same.




During onsite visit, VVB physically verified the agreement between farmers and implementation partner i.e. Holistic Life Transforming and Empowering Community (HLTEC). According to agreements and interviews with farmers, VVB confirmed following points:

- Farmers Voluntarily participated into program after stakeholder consultation and has given their consent prior to project implementation.

- Farmers are aware about positive from project including carbon credits and the benefit sharing mechanism.
- Farmers have committed to maintain plantation for 40 years. During this period thinning will be done to remove mature culms of bamboo. In case of mortality replantation will be done.
- Farmers have transferred the rights of carbon credits generated through plantations to implementation partner i.e. Holistic Life Transforming and Empowering Community (HLTEC).
- Farmers confirmed that the information was communicated in the local language i.e. Karbi and Assamese.

**Table VII: Sample sites visited by VVB**

Sample No.	Land Owner/ Farmer and year of plantation	Area	Co-ordinates	Onsite picture	Interview description
1	Dibising Kramsa 2019	4 Bigha	Latitude : 26.252872 Longitude: 93.026782		During interviews, the VVB verified that plantations were established from 2019 to 2022 across parcels ranging from 3 to 15 bigha (7.5 bigha = 1 hectare). Land ownership, overseen by village headmen, was confirmed via interviews and ownership certificates.
2	Kadom Roghongi 2019	4 Bigha	Latitude : 26.248617 Longitude: 93.068448		Before implementation, the land was unused shrubland, and saplings were provided without fertilizer use. Farmers gave informed consent

3	Rajen Kra 2020	3 Bigha	Latitude : 26.318 997 Longitude: 93.085 274		<p>and confirmed awareness of grievance mechanisms, project longevity (40 years), and carbon credit revenue-sharing agreements. Bamboo is harvested for sale or household uses like furniture or fences.</p>	
4	Kodom Rogpipi 2021	7 Bigha	Latitude : 26.311 846 Longitude: 93.108 279			<p>No negative impacts, disputes, or issues such as natural calamities or pests were reported. Safeguards ensured benefits like revenue generation and domestic bamboo use.</p>
5	Bidyaram Terang 2022	4 Bigha	Latitude : 26.249 816 Longitude: 93.069 957			<p>Farmers expressed satisfaction and enthusiasm for continuing participation. The VVB confirmed the project's adherence to stakeholder engagement, carbon credit agreements, and safeguards, with positive economic and environmental impacts for farmers and sustainable land use practices.</p>

During the on-site inspection<sup>VI01-VI31/</sup>, VVB have used the following evidence-gathering activities and techniques in the validation:

- ✓ Observation.
- ✓ Inquiry.
- ✓ Analytical testing.
- ✓ Confirmation.
- ✓ Recalculation.
- ✓ Examination.
- ✓ Retracing.
- ✓ Tracing.
- ✓ Control testing.
- ✓ Sampling.
- ✓ Estimate testing.

- ✓ Cross-checking.
- ✓ Reconciliation.

The following aspect of the project has been assessed during the on-site inspection<sup>/V101/-V131/</sup>:

- ✓ Applicability of the methodology applied to demonstrate<sup>/B02/</sup>
- ✓ Project Proponent's roles and responsibilities<sup>/13/</sup>
- ✓ Project Implementation framework
- ✓ SDG Impacts associated with the project<sup>/12/</sup>
- ✓ Project Start date<sup>/07/</sup>
- ✓ SOP's and QA/QC Procedures<sup>/13/</sup>
- ✓ No Net Harm
- ✓ Baseline scenario<sup>/11/</sup>
- ✓ Additionality<sup>/11/</sup>
- ✓ Forest and non-forest analysis<sup>/10/</sup>
- ✓ Project implementation<sup>/13/</sup>
- ✓ Future project plans<sup>/13/</sup>
- ✓ Organization structure, roles and responsibilities<sup>/13/</sup>
- ✓ Non-Permanence Risk Assessment<sup>/03/</sup>
- ✓ Ownership of land titles<sup>/05/</sup>

### **Sampling/Verification Plan**

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

#### **Step 1- Identification of Materiality threshold**

As per section 4.1.8 of VCS Standard (version 4.7),

*"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".*

Based on the VCS Joint PD & MR<sup>/01/</sup>, the annual average GHG emission mitigation (t CO<sub>2</sub>e) from the project have been estimated as < 300,000 tCO<sub>2</sub>e/year i.e., 10,077 tCO<sub>2</sub>e/ year. Hence, the applied materiality threshold would be 5%.

#### **Table VIII: Materiality Threshold**

Check the relevant box against applicable threshold level	Threshold	Related to
<input type="checkbox"/>	1 %	Large projects: Emission reductions or removals for registered large scale project activities achieving a total emission reduction or removal more than 300,000 tonnes of CO <sub>2</sub> e per year.
<input checked="" type="checkbox"/>	5 %	Projects: Emission reductions or removals for registered small-scale project activities achieving total emission reductions less than or equal to 300,000 tonnes of CO <sub>2</sub> e per year.

The validation and verification team concluded that the materiality threshold applicable to the project activity based on estimated GHG removals achieved is 5% of 10,077 tCO<sub>2</sub>e/ year. Hence, the applied materiality threshold would be 5% which is equal to 503.85 tCO<sub>2</sub>e.

**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

**Table IX: Identification of risks, their level and assessment for validation:**

Sr. 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.	<p><b>VCS project activity requirements</b></p> <p>Adherence to VCS rules and requirements related to AFOLU and applicable category i.e., ARR, including criteria for inclusion of future project instances.</p>	High	<p>This corresponds to high risk since compliance with the VCS rules and requirements is critical for the project.</p> <p>Further, criteria for inclusion of future project instances are important as this would be the basis of inclusion of new project instances.</p>	<p>The risk has been mitigated by reviewing the VCS PDMR and supporting documents<sup>/01-18/</sup> thoroughly in compliance with each section of VCS template instructions and VCS Standard, v4.7.</p>
2.	<p><b>Ownership</b></p> <p>Adherence to ownership and legal right of the project including the proof of right of carbon credits and land ownership.</p>	High	<p>Since, this is a grouped project and involves Farmers with low producing and barren lands, Purncare has overall control and responsibility for the project and the carbon credits produced as the project proponent. The evidence of title agreements of Project implementor with each landowner/ farmer (for each project instance) is pertinent, hence, VVB considers this as high risk.</p>	<p>The risk has been mitigated by checking the agreement<sup>/05/</sup> between Project implementor &amp; farmers/landowners identified for project implementation, by reviewing proof of title, and on-site interviews<sup>/18/V101-/V131/</sup> in line with section 3.7 of VCS Standard v4.7.</p>
3.	<p><b>Baseline methodology</b></p> <p>Adherence to selected baseline protocol as per the applied methodology, AR-ACM0003, Version 2.0 and applicability and identified project boundary.</p>	High	<p>This corresponds to high-risk category since compliance with the applied methodology, AR-ACM0003 v2.0 is critical for the VCS project.</p>	<p>The risk has been mitigated through the analysis of the actual baseline scenario observed during the on-site visit and interviews<sup>/V101-/V131/</sup>, review of the historical/baseline assessment records and other supporting documents including analysis of GIS and remote sensing data.</p>
4.	<p><b>Time period (for e.g., project start date, start date of crediting period and length of crediting period) covered by Project Report</b></p>	Medium	<p>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).</p>	<p>The risk has been mitigated by reviewing the evidence pertaining to the project start date including the time stamped pictures, contracts, and receipts. Moreover, to confirm the continuation of project</p>

	Adherence to the VCS requirements for start date, crediting period, and project longevity.		<p>Further as per section 3.9.4 of the VCS Standard v4.7, project shall have a credible and robust plan to ensure continuation of project implementation &amp; management over the identified crediting period.</p> <p>In the opinion of the VVB this risk is considered as medium.</p>	<p>implementation Project management manual is provided by PP. Further verification of the project compliance in line with the section 3.8.3 &amp; 3.9.4 of the VCS Standard v4.7.</p>
5.	<p><b>Baseline Scenario and Additionally</b></p> <p>Accuracy of baseline scenario identification and additionality demonstration as per VCS requirements, applied methodology, and applicable tools.</p>	High	<p>Since this is a grouped project which intends to include new activity instances, the baseline determination and additionality demonstration for all project activity instances under grouped project present at validation and criteria for future instances forms a high risk.</p>	<p>The risk has been mitigated by identifying the actual baseline scenario through on-site visit interviews<sup>/18/VI01/-/VI31/</sup> and assessment in combination with a thorough desk review including independent research and review of supporting document.</p>
6.	<p><b>Baseline assertion</b></p> <p>Accuracy of baseline assertion</p>	High	<p>Considering the project is not a common practice 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.</p>	<p>The risk has been mitigated based on the comparison of actual baseline scenario observed during the on-site visit<sup>/18/VI01/-/VI31/</sup> and desk reviews with the baseline scenario provided in the VCS PDMR and checking the compliance with the applied methodology and associate tool.</p> <p>Further by reviewing sampling methodology, source of data and calculations.</p>
7.	<p><b>Correctness of source of data used for Emission removal estimation/ calculation.</b></p> <p>Accuracy of default/ex-ante fixed</p>	High	<p>In line with the methodology applied and/or associated tool, sources for the data such as default values (i.e., carbon fraction, root-shoot ratio) from secondary sources such as Peer-reviewed</p>	<p>The risk has been mitigated by assessment of all sources, sinks and reservoirs that are included in the project description report during the on-site inspection<sup>/VI01/-/VI31/</sup>. A thorough desk review of all the data sources will be</p>

	values, formula and equations used for the ex-ante and ex-post carbon calculation.		national and/or international database, published data, and procedures for field measurement forms a high risk for overall carbon removals from the project.	conducted to evaluate the applicability, accuracy and compliance with the applied methodology.
8.	<p><b>GHG removals estimation including future estimate / calculation.</b></p> <p>Accuracy of default/ex-ante fixed values and allometric equations used for the ex-ante carbon calculation.</p>	High	<p>PP has used IPCC default values for some of the tree parameters such as soil organic carbon, root shoot ratio. Furthermore, accuracy in equations and formulas applied in the spreadsheet has material impact on the carbon removals from the project. This forms a high risk for overall carbon removals from the project.</p>	<p>This risk has been mitigated by cross-checking emission removal calculation spread sheet including all baseline emission, project emission, leakage emission (if applicable) and final emission reduction calculation including a through desk-review of all the data sources.</p>
9.	<p><b>Monitoring Plan</b></p> <p>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</p>	High	<p>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, sampling points, project monitoring and reporting adds further complexity to the monitoring. Thus, in opinion of VVB, this possesses high risk.</p>	<p>The risk has been mitigated by reviewing the measurement, calculation, and management /sampling plan of monitoring parameter during the desk-review and verification with the monitoring records/logbooks during on-site inspection<sup>/I01/-V131/</sup>, as per the applied methodology. Furthermore cross-verification and physical inspection of project site to assess data records and SOPs for field measurement<sup>t/13/</sup>.</p>
10.	<p><b>VCS project description</b></p> <p>Completeness and correctness of project description.</p>	Medium	<p>Aligning with the requirement of VCS Standard v4.7, VCS project description template v4.4, AR-ACM0003 v2.0, and associated tools, the appropriate interpretation of all the project particulars is pertinent. Hence, in the opinion of</p>	<p>The risk has been mitigated by reviewing adherence of the VCS PD to the actual site condition for e.g., the existence of the project; project start date; GHG inventory of sources and sinks; records kept on site; historical data; GIS and remote sensing data<sup>/09/</sup> and other</p>

			VVB, this risk is considered as medium.	supporting documents <sup>01-18/</sup> .
<b>11. Non-Permanence Risk</b>	High	Accuracy of assessment of permanence of carbon stock and buffer credits in line with requirement of section 3.2.10 to 3.2.27 of the VCS Standard v4.7.	Non-permanence risk analysis should correspond with VCS AFOLU Non-Permanence Risk Tool (version 4.2). The grouped project is being developed by Infinite and local implementation partners being Purncare 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.	The risk has been mitigated by cross-checking each and every risk affecting the permanence nature of carbon stock as per the non-permanence risk tool <sup>03/</sup> with evidence provided by the PP. The project management plan (including implementation plan <sup>13/</sup> ) & ownership of land, roles & responsibility to be checked during the on-site inspection <sup>VI01/-VI31/</sup> and through document review.
<b>12. Leakage</b>	Medium	Identification of source of project emissions such as leakage due to burning of woody biomass, activity shifting leakage.	As the project includes adoption of agroforestry land management practices and the baseline of the project is low Productive, nutrient scarce agricultural lands, in the opinion of VVB, no site preparation is attributable to plantation and thus this risk corresponds to medium category.	The information on leakage assessment provided by PP in the VCS PDMR <sup>01/</sup> has been evaluated based on desk review and on-site inspection <sup>VI01/-VI31/</sup> interviews by VVB and any non-conformities observed will be reported followed by revision in VCS PDMR <sup>01/</sup> to represent actual leakage assessment.
<b>13. Project Area and Eligibility</b>	High	Assessment of eligibility of land and calculation of area for each geographic	This corresponds to high risk since compliance with VCSA eligibility for non-clearance of native ecosystems (within the 10-year period prior to the project start date), the	The land use change has been evaluated based on historical vegetation analysis by a GIS expert appointed by VVB. The actual present land use will also be evaluated during

<p>area specified in the PD.</p>		<p>eligibility for the project area being non-wetland area and evidence to support eligibility that soil disturbance does not exceeds &gt;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.</p>	<p>on-site inspection<sup>/VI01-VI31/</sup> to check the compliance with the methodology.</p>
<p><b>14. Participation under any other GHG Program</b></p> <p>Risk of double counting of project or carbon credits</p>	<p>Medium</p>	<p>The grouped project is being implemented by collaborating with the farmer community and local implementing partners on privately owned 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.</p>	<p>The risk has been mitigated by reviewing agreement of PP with landowners/farmers<sup>/05/</sup>, land ownership proof<sup>/06/</sup>, proof for waiver of carbon credits<sup>/05/</sup> by the other entities along with checking the project on other registries.</p>

**Table X: Identification of risks, their level and assessment for Verification**

Sr. 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.	<p><b>Raw data generation</b></p> <p>Raw data generation including sampling approach, Implementation of monitoring procedures, mal operation by operational personnel,</p>	High	<p>Inadequate implementation of monitoring procedures including the sampling plan/equations of AR sampling standard errors in counting of trees, canopy/ Height data and other sampling plot data, Change of personnel, Undetected measurement errors, inappropriateness of Management system procedures w.r.t.</p>	<p>The risk has been mitigated by reviewing the raw data sheets<sup>/04/</sup> and cross-checking the same with the carbon calculation spreadsheets, VCS PD and MR<sup>/01/</sup>.</p>

	change of monitoring procedures, Insufficient accuracy, change of technology, Accuracy of values supplied by Third Parties.		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.	
2.	<p><b>Data collection, Transposition and aggregation/ Data and Information Flow</b></p> <p>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.</p>	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 data base entries, Problems caused by updating/upgrading or change of applied software.	The risk has been mitigated by reviewing the raw data sheets <sup>04/</sup> and cross-checking the same with the carbon calculation spreadsheets, registered VCS PD and MR <sup>01/</sup> .

<p><b>3.</b></p>	<p><b>Calculation Methods</b></p> <p>Applied formulae Miscalculation including AGB, BGB, C<sub>TREE</sub> etc. and errors in spread-sheet calculation</p>	<p>Medium</p>	<p>Risk due to miscalculation of applied formulas.</p>	<p>The risk has been mitigated by reviewing the raw data sheets<sup>/04/</sup> and cross checking the same with the carbon calculation spreadsheets<sup>/02/</sup>, registered VCS PD and MR<sup>/01/</sup>.</p>
<p><b>4.</b></p>	<p><b>Project Implementation &amp; Operation</b></p> <p>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.</p>	<p>High</p>	<p>Deviation from the project design and plan as mentioned in registered VCS PD and MR</p>	<p>The risk has been mitigated by cross-checking the raw data<sup>/04/</sup>, management plan<sup>/13/</sup>, cross-check of carbon calculation sheet data<sup>/02/</sup> including area, check of trainings<sup>/13/</sup>, check of responsibilities, check of QA/QC documentation. Same with the carbon calculation spreadsheets<sup>/02/</sup>, registered VCS PD and MR<sup>/01/</sup>.</p>

## 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 from the VCS joint PDMR<sup>/01/</sup> and subsequently the project implementation, monitoring practices and achieved GHG removals from the PD & MR<sup>/01/</sup>. Material discrepancies identified during the validation and verification are addressed either as CARs, CLs or FARs <sup>/Appendix-4 Findings log/</sup>.

Corrective Action Requests (CAR) are issued, where:

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

A Clarification Request (CL) is 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 process has used the table format given below:

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

A total of 26 findings has been raised, which includes 04 Corrective Action Requests (CARs), 22 Clarification Requests (CLs) and 00 Forward Action request (FAR) which are successfully closed. Please refer to Appendix 4.

### 2.5.1 Forward Action Requests

No FARs has been raised during the current validation and verification process.

## 3 VALIDATION FINDINGS

### 3.1 Project Details

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 other land use (AFOLU) with the use of CDM methodology AR ACM0003 v2.0.

**Table XI: Project Details**

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Audit history	VVB confirms that this is the Joint Validation and 1 <sup>st</sup> Periodic Verification; hence there is no previous audit history.
Sectoral scope	VCS sectoral scope 14: Agriculture, Forestry and other land use (AFOLU) <sup>B01/</sup>
AFOLU project category, if applicable	Afforestation, Reforestation and Revegetation (ARR)
Project activity type	The project activity involves plantation of Bamboo species, ARR - A1.1. - Establishing wood vegetation through planting, sowing, or other methods of woody vegetation.
General eligibility of the project to participate in the VCS Program	<p>Table under para 2.1 of the VCS standard v4.7 is not applicable as the project is an ARR project.</p> <ul style="list-style-type: none"> <li>• VVB confirms that the project meets requirements related to pipeline listing deadline as the project has been listed with the applied methodology before the end date of 31 December 2024. According to VCS standard 4.7, “<i>Clause 3.8.2 AFOLU projects shall initiate the pipeline listing process (as set out in the Registration and Issuance Process) within three years of the project start date.</i>” Project started on 09<sup>th</sup> July 2019 and was listed on 20 July 2022.</li> <li>• According to VCS standard 4.7, “<i>Clause 3.8.3 All AFOLU projects with ex-ante emission reduction/removal estimates of 20,000 tCO<sub>2</sub>e per year or less, and ARR, RWE and IFM (with the exclusion of</i></li> </ul>

*Logged to Protected Forest (LtPF) projects of any size shall complete validation within eight years of the project start date.*” Project is currently undergoing joint validation and verification. Hence complying with requirement, project shall be validated before 08 July 2027 (8-year deadline).

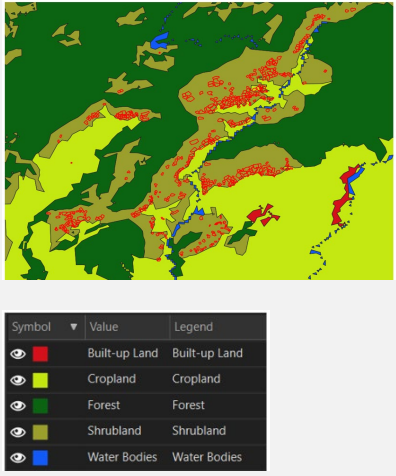
- In compliance with the sections 3.18.9 to 3.18.16 requirements of the VCS standard, the project is currently under validation and verification. After listing on 20<sup>th</sup> July 2022, the project was open for public comment from 15<sup>th</sup> August 2022 to 14<sup>th</sup> September 2022 and received no comments during the 30-day public comment period. Same has been crosschecked with verra registry project page [Verra Search Page](#). Furthermore, VVB conducted an opening meeting with the Project proponents on 25<sup>th</sup> March 2025 in line with VCS requirements.
- It should be noted that the applied CDM methodology ACM0003 v2.0 is under a grace period until 30<sup>th</sup> June 2025, Updated Deadline to Transition from CDM ARR Methodologies | Verra, the project meets above mentioned deadline.

S.No.	VCS Eligibility Criteria <sup>/B02/</sup>	VVB Assessment
	<p><b>Project 1. Activity DO NOT convert native ecosystems or degrade hydrological functions to generate GHG credits</b></p>	<p>VVB, through the on-site inspection/interviews<sup>/18/V101/-/V131/</sup>, the project includes the plantation of native bamboo species in areas that are degrading shrub lands or continue to be degrading in the baseline. The project's activities are focused on the plantation and restoration of degrading shrubland and do not entail the conversion of existing native ecosystems in the project region. Based on onsite observations VVB confirms that projects do not degrade hydrological functions to generate GHG credits.</p>

	<p>2. <b>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.</b></p>	<p>VVB, based on review of the satellite images through Google Earth images for each polygon<sup>09/</sup> and Forest/ Non-forest Analysis Report<sup>10/</sup>, confirms that there was no clearing or conversion of land due to the project activity and the project area was under degrading land category, 10 years prior to the project start date. Based on the analysis of the plot boundaries against the provided LULC shapefiles<sup>09/</sup>, VVB has determined that a vast majority of the plots fall under the shrubland class. Detailed assessment on the same was provided below in AFOLU eligibility assessment table.</p>
	<p>3. <b>If the AFOLU project area was drained or converted, such draining, or conversion took place prior to 1 January 2008</b></p>	<p>Based on the on-site inspection<sup>VI01-VI31/</sup>, and through the review of the Remote Sensing GIS Shapefiles<sup>09/</sup>, Forest/ Non-Forest Analysis Report and land use land change analysis<sup>10/</sup> and VCS PDMR<sup>01/</sup>, VVB confirms that before the project's initiation, the project land was degrading shrubland. VVB has ascertained that the project area has not been drained or converted due to implementation of the project as the pre-project scenario was degrading land. Henceforth, VVB confirms that the project is in line with the requirements of Para 3, AR-ACM0003, v2.0.</p>
	<p>4. <b>Project Activity is requesting for registration within eight years of the project start date</b></p>	<p>In line with section 3.8.4 of VCS Standard v4.7, based on the VCS<sup>01/</sup>, the start date of the project activity is 09<sup>th</sup> July 2019<sup>07/</sup>. Therefore, VVB confirms that the project complies with VCS requirement as project can undergo validation till 08 July 2027. The project listed on (20<sup>th</sup> July 2022) the VERRA registry within three years of its start date and underwent validation within eight years of</p>

		<p>initiation. further the project has been listed as "under validation" and received no comments during the 30-day public comment period. The same verified through the VERRA project hub<sup>B04/</sup> thereby VVB confirms that the project meets the requirements of section 3.8.2 and 3.8.3 of the VCS standard v 4.7.</p>
<p><b>AFOLU project eligibility, if applicable</b></p>	<p>The project activity is eligible under the scope of the VCS Program, according to section 3.2 of the VCS Standard version 4.7:</p> <ul style="list-style-type: none"> <li>• 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 Afforestation, falls into the eligible AFOLU project category “Afforestation, Reforestation and Revegetation (ARR) in line with section A1.1 of VCS standard requirements.</li> <li>• There are no jurisdictional REDD+ programs developed in the project region.</li> <li>• The project has conducted a non-permanence risk analysis<sup>03/</sup> according to the VCS Program Document AFOLU Non-Permanence Risk Tool, v4.2. The project complies with the section 3.2.10 to 3.2.27 of the VCS standard.</li> </ul>	
	<p><b>Afforestation, Reforestation and Revegetation (ARR) requirements</b></p>	<p><b>VVB Assessment</b></p>
	<p>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</p>	<p>VVB, through the on-site inspection<sup>/VI01-VI31/</sup> and on review of the PDMR<sup>01/</sup> KML files<sup>09/</sup>, project management plan<sup>/13/</sup> confirms that the project complies with the VCS requirement<sup>B01/</sup> as the project includes plantation of Bamboo species across Karbi, Anglong district of Assam in the first PAI.</p>

	<p>human-assisted natural regeneration of woody vegetation</p>	<p>The grouped project is aiming at plantations of up to 4500 hectares.</p>
	<p>Eligible ARR projects may include timber harvesting in their management plan.</p>	<p>As per the VCS Joint PD &amp; MR<sup>/01/</sup>, SOPs<sup>/13/</sup> and on-site inspection and interviews<sup>/18/VI01/-/VI31/</sup>, VVB confirms that the project activity includes harvesting. SOPs<sup>/13/</sup> regarding the plantation and harvesting plan have also been reviewed by VVB and is deems to be appropriate. Furthermore, VVB confirms that PP has demonstrated long term average for based on ex-ante and ex-post calculations<sup>/02/</sup>.</p>
	<p>The project area shall not be cleared of native ecosystems within the 10-year period prior to the project start date.</p>	<p>VVB has reviewed the Land use Land cover analysis<sup>/10/</sup> and reviewed satellite images through Google Earth images for each polygon and Fores/Non-Forest maps<sup>/10/</sup> for Assam. Based on the GIS analysis of the KML files<sup>/10/</sup>, the plot boundaries, VVB has determined that a vast majority of the plots fall under the shrubland class. Hence, Pre-Project vegetation that has been observed in project area is classified as shrubland. Based on the GIS analysis of the LULC data for Assam<sup>/10/</sup> VVB has determined this to be true. The carbon stock for shrubs has also been accounted for in the baseline scenario as per para</p>

		<p>61 of the AR TOOL014. Thus, the VVB has determined that all requirements to justify the presence of pre-project shrubs have been satisfied by the PP. VVB has also observed no disturbance or clearing of native ecosystems prior to or post-project start date based on the analysis of historical data using Google earth imagery<sup>/10/</sup>. The same was further confirmed based on the review of the project management and implementation plan in place<sup>/13/</sup> and onsite inspections<sup>/VI01/-VI31/</sup>. Overall, in conclusion the VVB confirms that no native ecosystems are cleared prior, and post project start date.</p> 
	<p>Where an implementation partner is acting in partnership with the project proponent, the implementation partner shall be identified in the project description. The</p>	<p>Based on the onsite inspections<sup>/VI01/-VI31/</sup> and through the review of the agreements between PP and HLTEC and VCS PD MR<sup>/01/</sup>, VVB confirms that project is implemented via implementation partner</p>

	<p>implementation partner shall identify its roles and responsibilities with respect to the project, including but not limited to, implementation, management, and monitoring of the project, over the project crediting period.</p>	<p>'HLTEC'. The agreements<sup>/05/</sup> and the comprehensive details of all implementation partners have been outlined in relevant sections of the PDMR<sup>/01/</sup>. The roles &amp; responsibilities of implementation partners involves carrying out plantation activities in collaboration with farmers, conduct local stakeholder engagement, coordination and other activities ground implementation.</p>				
<p><b>Transfer project eligibility, if applicable</b></p>	<p>Based on the review of VCS PD &amp; MR<sup>/01/</sup> the project has not been registered under any other GHG programs and is not seeking registration under any other GHG programs. VVB confirms this by checking the double counting declaration<sup>/06/</sup> from the PP and by checking the VERRA webpage as well as public website of other registries<sup>/B04/</sup> (GS /Plan Vivo/ ICR).</p>					
<p><b>Project design</b></p>	<p>As per program definitions v4.5<sup>/B01/</sup>,</p> <p><i>“A project to which additional instances of the project activity, which meet pre-established eligibility criteria, may be added subsequent to project validation”</i></p> <p>VVB confirms that the VCS project is developed as a grouped project. The grouped eligibility criteria is assessed as follows and also in section 3.2 of the this report.</p> <table border="1"> <thead> <tr> <th>Grouped project eligibility requirements</th> <th>VVB Assessment</th> </tr> </thead> <tbody> <tr> <td> <p>A delineation of the geographic area(s) within which all project activity instances shall occur</p> </td> <td> <p>VVB based on the review of the PDMR<sup>/01/</sup> and GIS files<sup>/09/</sup> confirms that the geographical areas have been delineated down to state of Assam, which establishes the eligibility criteria for farmers to be included in the grouped</p> </td> </tr> </tbody> </table>		Grouped project eligibility requirements	VVB Assessment	<p>A delineation of the geographic area(s) within which all project activity instances shall occur</p>	<p>VVB based on the review of the PDMR<sup>/01/</sup> and GIS files<sup>/09/</sup> confirms that the geographical areas have been delineated down to state of Assam, which establishes the eligibility criteria for farmers to be included in the grouped</p>
Grouped project eligibility requirements	VVB Assessment					
<p>A delineation of the geographic area(s) within which all project activity instances shall occur</p>	<p>VVB based on the review of the PDMR<sup>/01/</sup> and GIS files<sup>/09/</sup> confirms that the geographical areas have been delineated down to state of Assam, which establishes the eligibility criteria for farmers to be included in the grouped</p>					

		<p>project activity. According to the PDMR, the baseline scenario and rationale for additionality are intended to remain consistent or be applied more conservatively for any future instances of the project implemented outside the initial PAIs. In line with this, the VVB has raised a FAR to assess the applicability and robustness of the baseline when future instances are added. This assessment will help ensure that the methodological integrity and justification for additionality are maintained across all project expansions.</p>
	<p>One or more determinations of the baseline for the project activity in accordance with the requirements of the methodology applied to the project</p>	<p>It has demonstrated that the land parcels included in the project must meet the following baseline criteria:</p> <ul style="list-style-type: none"> <li>- No native forests cleared in the past 10 years<sup>09/</sup>.</li> <li>- Areas must not have wetlands<sup>09/</sup>, and</li> <li>- less than 10% soil disturbance for project area with organic soil.</li> </ul> <p>Compliance is ensured for each farmer through SOPs before inclusion in the grouped project activity.</p>
	<p>One or more demonstrations of additionality for the project activity in accordance with</p>	<p>VVB, based on the review of the PDMR<sup>01/</sup> confirms that the grouped project additionality has been</p>

	<p>the requirements of the methodology applied to the project</p>	<p>demonstrated as per the requirements of AR tool 02 requirements and the same will be followed for the future instances.</p>
	<p>One or more sets of eligibility criteria for the inclusion of new project activity instances at subsequent verification events</p>	<p>VVB based on the review of the project plantation plan<sup>/13/</sup> PDMR<sup>/01/</sup> and SOPs<sup>/13/</sup> confirms the inclusion criteria for the new project activity appropriately includes:</p> <ul style="list-style-type: none"> <li>- The land parcels must be cropland or degrading land.</li> <li>- Within geographical boundaries of Assam.</li> <li>- Privately owned lands must have clear land title with accessible boundaries, distinct from government-protected areas.</li> </ul> <p>As noted in the PDMR, the baseline and additionality rationale will remain consistent or more conservative for future instances beyond the initial PAIs.</p>
	<p>A description of the central GHG information system and controls associated with the project and its monitoring</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> and SOPs in place<sup>/13/</sup> confirms that the project operations are supervised by the PP including governance, controls, and monitoring of the GHG information system. The project director, MRV Team, AFOLU expert are</p>

		responsible for the tasks required for the implementation of the project.
	<b>Eligibility criteria for New Project Instances (PAI) as per the VCS standard.</b>	
	Meet the applicability conditions set out in the methodology applied to the project	It is demonstrated that the new project activity instances of the project will meet the applicability conditions as per the applied methodology AR ACM0003 <sup>/B02/</sup> and further the VVB assessment on the applicability conditions are provided in the 3.4.2 of this report.
	Use the technologies or measures specified in the project description.	VVB based on the review of the project management plan <sup>/13/</sup> , PDMR <sup>/01/</sup> confirms that all the new Instance will be under ARR category as described in section 1.12 project description <sup>/01/</sup> as per the requirements of the VCS standard.
	Apply the technologies or measures in the same manner as specified in the project description.	VVB based on the review of the project management plan <sup>/13/</sup> , PDMR <sup>/01/</sup> confirms that all the new Instance will be under ARR category as described in section 1.12 project description <sup>/01/</sup> as per the requirements of the VCS standard.
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 <sup>/01/</sup> confirms that the future project Instances will have baseline scenario and additionality demonstration as per the AR tool-02 requirements. The same was assessed by	

		<p>the VVB in section 3.4.4 and 3.4.5 of this report. As noted in the PDMR, the baseline rationale will remain consistent or more conservative for future instances beyond the initial PAIs. Accordingly, the VVB has raised a FAR to reassess baseline applicability when such expansions occur.</p>
	<p>Have characteristics with respect to additionality that are consistent with the initial Instances for the specified project activity and geographic area.</p>	<p>VVB based on the review of the PDMR<sup>/01/</sup> confirms that for new instances, criteria for the baseline scenario and additionality will remain consistent with the 1<sup>st</sup> instance. As noted in the PDMR, the additionality rationale will remain consistent or more conservative for future instances beyond the initial PAIs. Accordingly, the VVB has raised a FAR to reassess baseline applicability when such expansions occur.</p>
	<p>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.</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> confirms the project's baseline and additionality framework is designed to ensure consistency across all activity instances, including future additions under the grouped structure. Geographic delineation using geodetic polygons ensures spatial traceability in line with VCS Standard v4.7 Section 3.6.16 (2) and (3) requirements. The initial</p>

		bamboo plantation activities in Assam serve as the reference case, and any future instances across other districts of state Assam must align with the same methodological rigor and eligibility criteria.
	<b>Eligibility criteria for Inclusion of New Project Activity Instances</b>	
	Occur within one of the designated geographic areas specified in the project description	VVB based on the review of the project management plan <sup>/13/</sup> , PDMR <sup>/01/</sup> confirms that the project's reporting structure aligns with the requirements of VCS Standard v4.7 regarding the inclusion of new project activity instances. The designated geographic areas are clearly defined using geodetic polygons, and any future instances will be confined to these boundaries as specified in the grouped project description with condition to adhere with baseline and additionality described for 1 <sup>st</sup> PAI.
	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.	VVB based on the review of the project management plan <sup>/13/</sup> , PDMR <sup>/01/</sup> confirms that the Project Proponent has committed to ensuring that all new project activity instances comply with the land eligibility criteria outlined in Section 1.4.2 of the project description. Specifically, land parcels must be classified as degrading shrubland, located within the

		<p>geographical boundary of Assam, and if privately owned, must demonstrate clear possession with accessible boundaries, distinctly separate from government-declared protected areas. To ensure compliance, the Project Proponent will secure formal agreements or signed contracts with landowners prior to inclusion, thereby establishing legal clarity and traceability for each instance.</p>
	<p>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</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> confirms that all relevant details pertaining to the project activity have been documented in accordance with the applicable eligibility criteria. Specifically, Sections 1.1, 1.12, and 1.13 of the Joint PDMR, along with Section Non-Permanence Risk Report and provide evidence<sup>/03/</sup> to demonstrate conformance. These sections collectively address project scope, land-use classification, geographic boundaries, and risk mitigation measures, ensuring that the activity meets the minimum requirements under the applied methodology and VCS Standard v4.7.</p>

	<p>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</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> confirms that each new project activity instance will be supported by documented evidence of project ownership, consistent with the eligibility criteria outlined in the project description. For PAI-1, a formal contractual agreement<sup>/05/</sup> between the Project Proponent and the participating farmer substantiates ownership from the start date of the activity. This approach ensures legal clarity, traceability, and compliance with the requirements for grouped project inclusion under VCS Standard v4.7.</p>
	<p>Have a start date that is the same as or later than the grouped project start date</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> confirms that all project activity instances included under the grouped project will have start dates on or after the official project start date of 09 July 2019. This ensures temporal consistency with the eligibility requirements outlined in the applied methodology and VCS Standard v4.7, thereby maintaining the integrity of baseline and additionality assessments across all instances.</p>

	<p>Only be eligible for crediting from the later of 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.</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> confirms that new project activity instances will be eligible for crediting from the later of their individual start date or the actual commencement of the activity. For each land parcel included in a new instance, crediting will begin from the later of the start date of the verification period in which the parcel was added to the grouped project and will continue through to the end of the total project crediting period. This approach ensures compliance with the temporal boundaries defined in the applied methodology and VCS Standard v4.7.</p>
	<p>Not be or have been enrolled in another VCS project.</p>	<p>VVB based on the review of the project management plan<sup>/13/</sup>, PDMR<sup>/01/</sup> confirms that each land parcel proposed for inclusion in a new project activity instance must not be concurrently enrolled in another VCS project. This exclusivity requirement is enforced through formal contractual agreements and legally binding declarations signed by the respective landowners or farmers. These instruments provide assurance of project ownership, prevent double-counting of emission reductions, and uphold the integrity of the</p>

		grouped project under VCS Standard v4.7.
	Adhere to the clustering and capacity limit requirements for multiple project activity instances set out in 3.6.8 – 3.6.9	VVB based on the review of the PDMR <sup>/01/</sup> confirms that PP acknowledges that project activity instances located within a 10-kilometer radius of another instance of the same activity, under the same Project Proponent, must be treated as part of a single project. This spatial threshold ensures that closely situated activities are not fragmented across multiple projects, thereby maintaining consistency in baseline application, monitoring, and crediting. The approach aligns with the principles of grouped project integrity and avoids duplication or artificial separation of geographically contiguous interventions.
	Addition of a new project proponent to the project	VVB based on the review of the project management plan <sup>/13/</sup> , PDMR <sup>/01/</sup> confirms that the project has acknowledged that the inclusion of new Project Proponents, where applicable and it will follow the prescribed timelines “five years for AFOLU project start date” ensuring procedural compliance with the VCS Registration and Issuance Process.

Therefore, based on the above assessment VVB confirms that the project is in line with the grouped project

	<p>requirements set out in section 3.6.10 to 3.6.22 of the VCS standard.</p>
<p><b>Project ownership</b></p>	<p>As per the review of the VCS PD &amp; MR<sup>/01/</sup>, Project plantations are established on private lands, during onsite interviews/inspection, VVB confirmed land ownership of farmers by verifying the legal land titles<sup>/05/</sup>. Since, the project location falls under the jurisdiction of an autonomous district council, i.e. the Karbi Anglong Autonomous Council. This council has jurisdiction over the district Karbi Anglong. This has been confirmed by the VVB via interviews with representatives of the PP as well from the website: <a href="https://karbianglong.gov.in/">https://karbianglong.gov.in/</a>. The land ownership in the villages of the region is usually determined by the village headman, which has been confirmed by the VVB via interviews with the farmers/ landowners-The same has been cross-checked based on the landownership certificates which are signed between the village head and the land owner. Furthermore, the carbon credit rights are owned by PP, through contractual agreement<sup>/05/</sup> between project implementor and farmer/landowners.</p> <p>The VVB has validated that the FPIC process was diligently adhered to by the PP. Onsite interviews<sup>/18/VI01/-/VI31/</sup> have confirmed the consistent presence of the project implementer within the project area, which enabled effective engagement with farmers prior to the project's implementation. HLTEC engaged with farmers through community meetings, one-on-one interactions, and group discussions. Furthermore, the VVB has verified that farmers provided their informed consent before the project was initiated.</p>
<p><b>Project start date</b></p>	<p>As per section 3.8 of VCS Standard v4.7<sup>/B02/</sup></p> <p><i>“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).”</i></p>

	<p>As per the VCS Joint PD &amp; MR<sup>/01/</sup>, the project start date is 09<sup>th</sup> July 2019. VVB, through the Nursery bill<sup>/07/</sup> provided for start date, confirms the date mentioned is valid as the first plantation was carried out on 09<sup>th</sup> July 2019, this included pit digging, planting of bamboo seedlings, manual weeding around the seedlings, and procurement of nursery stock. which is the activity that led to the generation of GHG removals are implemented thus it meets the above-mentioned VCS criteria for the start date. Furthermore, VVB, during onsite inspection<sup>/VI01/-VI31/</sup> reviewed nursery receipts and sapling distribution register maintained by PP and confirms that sapling distribution was carried out in July 2019<sup>/07/</sup>.The farmers and local stakeholders confirmed that plantation activities were intentionally scheduled during the early monsoon period, which is considered optimal for seedling survival and growth due to favourable soil moisture and climatic conditions. This agronomic timing aligns with regional silvicultural practices and supports the viability of the planted bamboo.</p>
<p><b>Project crediting period</b></p>	<p>As per section 3.9.3 of VCS Standard v 4.7<sup>/B01/</sup>:</p> <p><i>“For all AFOLU projects other than such ALM projects described in 3.9.2, the initial project crediting period shall be a minimum of 20 years up to a maximum of 100 years, which may be renewed at most four times, with a total project crediting period not to exceed 100 years.”</i></p> <p>VVB confirms that the crediting period of the project is 30 years starting from 09-July-2019 to 08-July-2049 which is appropriate and valid as per the above requirements Based on the contractual agreement provided<sup>/05/</sup>, VVB confirms that the farmers and PP are contractually obligated for period of 40 years which goes beyond project crediting period.</p>
<p><b>Project scale</b></p>	<p>As per section 3.10.1 of VCS Standard v 4.7<sup>/B01/</sup></p> <p><i>“Project size categorizations are as follows:</i></p> <ol style="list-style-type: none"> <li>1) <i>Projects: Less than or equal to 300,000 tonnes of CO2e per year.</i></li> </ol>

	<p>2) <i>Large projects: Greater than 300,000 tonnes of CO2e per year.</i>"</p> <p>The estimated annual GHG removals as per the VCS Joint PD &amp; MR<sup>/01/</sup> is 10,077 tCO<sub>2</sub>e/year<sup>/01/02/</sup> calculated for the area under first PAI i.e., 834.33 ha. However, the proposed grouped project area is 4500 ha, which will include more PAIs in the future. Thus, based on that the project scale is deemed as project scale.</p>
<p><b>Likelihood of achieving estimated GHG emission reduction or removals</b></p>	<p>VVB confirms that the likelihood of the estimated GHG emission reduction or removals will be achieved based on the project implementation<sup>/13/</sup>, monitoring manual<sup>/13/</sup>, SOPs<sup>/13/</sup>, data and parameters<sup>/01/</sup> but the actual GHG reduction or removals will slightly deviate from the estimated due to various edaphic factors based on the futuristic environmental conditions. VVB confirms, that the project is estimated to achieve an average GHG emission reductions and removals equivalent to 10,077 tCO<sub>2</sub>e per year with total of 302,310 tCO<sub>2</sub>e for entire crediting period.</p>
<p><b>Technologies and measures implemented by the project activity</b></p>	<p>The grouped VCS project includes the plantation of Bamboo by farmers on self-owned private lands that were previously predominantly degrading shrublands. VVB, based on the on-site inspection<sup>/VI01/-VI31/</sup>, confirms that farmers have planted Bamboo species (<i>Bambusa tulda</i>) for the 1<sup>st</sup> PAI from 2019 to 2022 with participation of 462 farmers over 834.33 ha area. In future project aims to scaleup to 4500 ha within the state of Assam.</p> <p>The baseline conditions were degrading shrublands by implementation of project activity, shrublands are afforested and more carbon is sequestered aiding to climate change mitigation. Project involves plantation of Bengal bamboo (<i>Bambusa tulda</i>) which is native species, hence no threat to existing biodiversity. By planting bamboo species, the project helps in reducing soil erosion which is common challenge faced by farmers. Project involves due to its fast growth and extensive root system bamboo improves soil physical, chemical and biological properties also controls soil erosion and make possible sediment filtration hence suitable for improve of degrading lands. In degrading soils</p>

	<p>the roots of bamboo fix carbon and nutrients to the soil that helps in improving soil health.</p> <p>In the project planted species <i>B. tulda</i>, thinning stimulates regrowth. This ensures a sustainable bamboo forest with high carbon sequestration, resulting in no biomass or carbon stock loss over the project period. VVB has also assessed the SOP<sup>/13/</sup> for Plantation Management Plan<sup>/13/</sup> which includes the appropriate procedure for plantation of saplings, nursery techniques, risk mitigation, roles and responsibilities, QA/QCs, data collection, monitoring procedures, stratification, mapping, sampling design, laying out of Permanent Sample Plots, measurement of Above Ground Biomass and Below Ground Biomass.</p>
<p><b>Implementation schedule of the project activity or activities</b></p>	<p>VVB, based on the remote sensing GIS<sup>/09/</sup>, implementation status<sup>/13/</sup>, contractual agreement<sup>/05/</sup> and on-site inspection<sup>/VI01-VI31/</sup> confirms that the grouped project has started the implementation of the first project activity instance of 834.33 hectares during the period of 2019 - 2022 and as a grouped project aims to scaleup up to 4500 ha.</p> <p>Plantation activities involve a series of well-planned steps to ensure successful tree growth and sustainability. The process begins with site selection, where suitable locations with adequate soil, water, and sunlight are chosen. Species selection follows, prioritizing native species that are adaptable and resilient. The implementation procedure includes sapling procurement, land preparation, and installation of irrigation systems. Planting is done during optimal seasons, a few weeks prior to the rainy season until October, using methods like planting with naked roots or stem cuttings. Regular intercultural operations such as watering, weeding, mulching, and fertilizing are essential for healthy growth. Survival monitoring ensures the trees' health and replanting if necessary. Long-term monitoring records biometric traits to track growth and health over time.</p> <p>Additionally, nursery management ensures seedlings are transported promptly to the planting site. The project targets planting 4,500 hectares, with land prepared 8-10 days prior and weeds removed manually. Mortality replacement is monitored for three years, and weed control is performed</p>

	<p>manually without chemicals. The same was confirmed during onsite inspection/interviews<sup>VI01/-VI31/</sup>.</p>
<p><b>Project location</b></p>	<p>VVB based on the review of the VCS PDMR<sup>/01/</sup>, kml files<sup>/09/</sup> confirms that the grouped project boundary covers multiple scattered land parcels across Karbi Anglong district of Assam (26.1861° N, 93.5813° E).</p> <p>VVB, during the on-site inspection<sup>VI01/-VI31/</sup> confirmed that the first PAI includes 834.33 ha from Karbi Anglong district of Assam. VVB confirms that PP has submitted the KML files<sup>/09/</sup> for the first PAI which demonstrates the geodetic polygons for all the multiple parcels. This includes all the permanent sample plots incorporating the Name of the Farmers, State, District, Tehsil, village, Plantation in Ha, Plantation Date, Latitude &amp; Longitude under the first PAI. VVB confirms that the KML files<sup>/09/</sup> are in compliance with section 3.11.2 of the VCS Standard v4.7.</p> <p>Based on the review of maps in VCS Joint PD &amp; MR<sup>/01/</sup> along with KML files<sup>/09/</sup> and further through on-site inspection<sup>VI01/-VI31/</sup>, VVB confirms the project location provided is valid and appropriate.</p>
<p><b>Conditions prior to project initiation</b></p>	<p>Based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup>, and review of supporting literature<sup>/17/</sup>, VVB confirms that project the section "1.14 Conditions Prior to Project Initiation" describes the state of the land before the project implementation. The land was degrading shrubland owned by farmers, and without intervention, it would have continued to degrade further. Assam's sub-tropical monsoon climate, with an average annual rainfall of around 1500mm and temperatures ranging from 25°C to 35°C in summer and dropping to 6°C in winter<sup>5</sup>, supports various forest types, including Cachar semi-evergreen forest and East Himalayan moist mixed deciduous forest<sup>6 7</sup>. The region is rich in biodiversity, hosting 193 mammalian species, 950</p>

<sup>5</sup> [What is the climate in Assam? - Geographic FAQ Hub: Answers to Your Global Questions](#)

<sup>6</sup> [Climate Assam: Temperature, climate graph, Climate table for Assam](#)

<sup>7</sup> [Assam's Forests on the Brink: Urgent Action Needed to Prevent Environmental Collapse](#)

	<p>bird species, and numerous reptiles, amphibians, fish, and insects. Prior to the project, the land was dominated by invasive species, contributing to its degradation. The project aims to restore the land by introducing bamboo plantations and other measures. Assam's soil types include Khadar and Hangar alluvial soils, red soils, Inceptisols, Entisols, and Ultisols, with varied groundwater conditions, some areas showing high-quality groundwater suitable for irrigation<sup>8 9</sup>. This initiative represents a strategic and sustainable approach to improving land health and promoting better land management practices in Assam. The validator confirms all this information through a web review, ensuring its accuracy and reliability<sup>/10/11/</sup></p>
<p><b>Project compliance with applicable laws, statutes and other regulatory frameworks</b></p>	<p>Based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup>, and review of the laws and regulations<sup>/19/</sup> host country knowledge and through own research, VVB confirms that project complies with the following national and state policies<sup>/19/</sup>:</p> <ol style="list-style-type: none"> <li>1. Indian Forest Act, 1927</li> <li>2. National Forest Policy, 1988</li> <li>3. Forest Conservation Act, 1980</li> <li>4. Forest Right Act, 2006</li> <li>5. Assam Bamboo &amp; Rattan Policy, 2019</li> <li>6. Assam Forest Policy, 2004</li> </ol> <p>Based on the host country expertise, VVB also confirms that the project is in compliance with Indian Forest Act, 1927. The project activity includes plantation which aligns with the goal of Assam Bamboo and Rattan Policy, 2019 by increasing the green cover. The project aligns with the objectives outlined in the National Forest Policy 1988, ensuring compliance with its stipulations. Moreover, Forest Conservation Act, 1980 actively supports the mitigation of</p>

<sup>8</sup> [Hydrological Data | Assam Water Research and Management Institute Society \(AWRMIS\) | Government Of Assam, India](#)

<sup>9</sup> [Hydrological Data | Water Resources | Government Of Assam, India](#)

<sup>10</sup> [land policy\\_2019\\_Corrected.pmd](#)

<sup>11</sup> [World Bank Document](#)

	<p>forest habitat loss and degradation, fostering improved biological connectivity. The strategy also places emphasis on advancing knowledge and awareness regarding forests, advocating for the conservation of species and genetic diversities. Additionally, it directs attention to the enhancement of livelihoods dependent on forest resources, highlighting these key areas as focal points of emphasis. VVB has also reviewed the evidence<sup>/07/19/</sup> and confirms that the proposed VCS project shall not lead to violation of any applicable law even if the law is not enforced.</p>
<p><b>Double counting and participation under other GHG programs</b></p>	<p><b><u>Participation under other GHG programs</u></b></p> <p><b>Projects registered (or seeking registration) under other GHG Program(s)</b></p> <p>Based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup> and a declaration<sup>/06/</sup> provided by the PP, VVB confirms that the project is neither registered nor seeking registration under any other GHG program and is seeking registration under VCS mechanism, only. This was further confirmed by the VVB checking on other registries (CDM/GS/GCC/Plan Vivo)<sup>/B04/</sup></p> <p><b>Rejection by other programs</b></p> <p>Based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup>, VVB confirms that the project has not been rejected by any other GHG program. A double counting declaration<sup>/06/</sup> in this regard has been provided by the PP and verified by VVB.</p>
<p><b>No double claiming with emissions trading programs or binding emission limits</b></p>	<p>VVB, based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup> and the declaration letter<sup>/06/</sup> and on-site interviews<sup>/VI01/-VI31/</sup>, confirms that the host country is a developing nation, and the 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.</p>
<p><b>No double claiming with other forms of environmental credit</b></p>	<p>VVB based on the review of declaration<sup>/06/</sup> confirms that the project has not sought or received another form of GHG related environmental credit.</p>
<p><b>Supply chain (Scope 3) emissions double claiming</b></p>	<p>Based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup>, VVB confirms that PP has identified the seedlings supplier as a potential supply chain partner under Scope 3. A declaration</p>

	<p>has been obtained<sup>/06/</sup> and reviewed for not claiming any Environmental Attributes. A contractual agreement<sup>/05/</sup> is also in place between farmer and the PP to ensure that the producer-consumers do not claim any environmental attributes for the purchase of the produce from the project activity. Additionally, interviews conducted during the onsite inspection confirmed that farmers retain full autonomy over the use of harvested bamboo. Several farmers reported using bamboo for subsistence uses including household applications such as fencing, which reflects traditional practices and does not involve project-facilitated commercialization. These uses are voluntary and decentralized, and do not alter the emissions footprint of any formal supply chain.</p> <p>Based on the review of the PDMR and onsite inspections VVB confirms that the project activity does not include the supplying of the seedlings. The VVB further assessed the procurement of seedlings and verified that:</p> <ul style="list-style-type: none"> <li>- Seedlings are sourced from within the project boundary, and transportation-related emissions are negligible.</li> <li>- No external supply chain partners are engaged in a manner that would materially affect the emissions footprint of upstream or downstream products or services.</li> </ul> <p>Furthermore, as per section 5.5 paragraph 14 requirements of the applied methodology AR-ACM0003, the GHG emissions resulting from combustion of fossil fuels and transportation attributable to the project activity shall be considered insignificant and therefore the same can be accounted as zero. Overall, based on all the above assessment VVB concludes that the project activity does not result or have any sort of scope.3 emissions.</p>
<p><b>Sustainable development contributions</b></p>	<p>According to the VCS PDMR<sup>/01/</sup>, the project is inclined towards achieving the Sustainable Development Goals. The project contributes to many of the country's sustainable development priorities. PP as demonstrated that project is achieving SDG 1, SDG 2, SDG 8, SDG 13 and SDG 15. Detailed assessment of each SGD as follows:</p> <p><b>SDG 1 (No poverty):</b></p>

**SDG indicator 1.1.1 Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)**

VVB based on the on-site inspection<sup>/VI/01/-/VI31/</sup> employment certificate/wage receipts<sup>/12/</sup> confirms that the project activities are designed to generate seasonal employment. VVB confirms that project provides employment to both male and female without any discrimination. The project has generated the seasonal employment of 1397-man days during the current monitoring period and VVB also verified the same during the on-site interviews. Based on salary slips<sup>/12/</sup>, it was confirmed that employment due to project activity is providing more than USD 1.25, per day. Group project will provide long term as well as short term employment opportunities to local communities and this income generation through employment contributes to uplifting the poverty and contributes the SDG 1.1.1.

**SDG 2 (Zero Hunger):**

**SDG indicator 2.3.2 Average income of small-scale food producers, by sex and indigenous status <sup>12</sup>**

Based on the review of agreements<sup>/05/</sup> and VCS PDMR<sup>/01/</sup>, VVB confirms that PP adopted SDG indicator 2.3.2, which is in line with the UNSDG target indicators listed ([List of Sustainable Development Goal targets and indicators - Wikipedia](#)), further in contribution to this SDG indicator the PP has engaged 462 farmers families to benefit from the carbon credits and secondary produce just as sale of bamboo and will uplift the average income of the household through project activity. The rights to bamboo produce remain with the landowners, and the carbon agreement<sup>t/05/</sup> outlines the income-sharing structure, supporting the indicator’s intent. It should be noted that bamboo shoots are considered a delicacy in the project area and are culturally recognized as a traditional food product, particularly among indigenous and forest-dependent communities. In this context, the indicator “Average income of

<sup>12</sup> [Microsoft Word - Global Indicator Framework after 2025 review Eng clean.docx](#)

small-scale food producers, by sex and indigenous status” is applicable<sup>13</sup>. **SDG 8 (Decent work and economic growth):**

**SDG indicator 8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities**

VVB, based on the review of employment slips<sup>/12/</sup> confirms that during the first PAI employment was provided to the local communities for implementation of the project activities. Total 110 people (63 male and 47 female employees) received seasonal employment for 1,397 man-days, in contribution to this SDG 8.5.1.

**SDG indicator 8.6.1 Proportion of youth (aged 15–24 years) not in education, employment or training**

VVB based on review of training report<sup>t/12/</sup>, Confirms that project implementor has provided training to 89 individuals (which includes various stakeholders, mainly farmers). Upon review of training report<sup>t/12/</sup> and onsite interviews<sup>VI01-/V131/</sup> VVB noted that, the training organized by HLTEC focused on equipping farmers with essential knowledge and skills for the successful implementation of a carbon credit project. It covered site selection, species selection, planting techniques, and sustainable land management practices. Additionally, farmers learned about compliance, documentation, and verification processes necessary for maintaining carbon credit standards. Hence, by providing opportunities to educate and train youth, the project is decreasing the proportion of youth (aged 15–24 years) not in education, employment or training

**SDG 13 (Climate action): Tonnes of greenhouse gas emissions avoided or removed**

Based on the review of documents<sup>/01/02/</sup>, VVB confirms that the bamboo plantation project in PAI-1, covering 834.33 hectares, has sequestered 205,146 tCO<sub>2</sub>e during the initial

<sup>13</sup> [Bamboo shoots: an exploration into its culinary heritage in India and its nutraceutical potential | Journal of Ethnic Foods | Full Text](#)

	<p>monitoring period and is projected to sequester 302,310 tCO<sub>2</sub>e over the 30-year crediting period.</p> <p><b>SDG 15 (Life on land):</b></p> <p><b>15.1.1 Forest area as a proportion of total land area</b></p> <p>Based on the review of KML files<sup>/09/</sup>, VVB confirms that the 834.33 ha under the first PAI will support sustainable plantation management, enhance green cover, combat land degradation, and protect biodiversity. Over the project's lifetime, the total area is expected to expand to 4,500 ha. Thus, the project makes a meaningful contribution to the relevant SDG.</p> <p>VVB confirms that SDG 1,2,8, 13 &amp; 15 are applicable under the host country regulations and are deemed appropriate.</p>
<p><b>Additional information relevant to the project</b></p>	<p><b><u>Leakage management for AFOLU projects</u></b></p> <p>Based on the review of the VCS PDMR<sup>/01/</sup>, Forest non forest analysis<sup>/10/</sup>, management plan<sup>/13/</sup> and during the on-site inspection<sup>/VI01-VI31/</sup> VVB confirmed that the project activity has been implemented on degrading shrub lands or barren areas, indicating that no crop cultivation activities would be displaced by the first set of instances during the project implementation. Based on the PRA report<sup>/14/</sup> and on-site inspections<sup>/VI01-VI31/</sup> VVB confirms that there has been no grazing activity in the past. Hence, there has been no leakage due to implementation of project activity in line with the para.9 of the AR Tool-15 requirements.</p> <p><b><u>Commercially sensitive information</u></b></p> <p>Based on the review of VCS PDMR<sup>/01/</sup>, supporting documents provided by PP, and through on-site inspection<sup>/VI01-VI31/</sup>, VVB confirms that apart from commercially sensitive information all other information is available in the public version of the PDMR.</p> <p>VVB confirms that the commercially sensitive has been provided to audit team- VVB has reviewed the Agreements<sup>/05/</sup> between the parties (Project implementor and PP) and the agreement between the farmer and PP. During the interviews, it was confirmed that all the agreements were signed voluntarily. Further PP has also</p>

shared benefit sharing mechanism for VVB review, benefit sharing was done considering all stakeholder’s involved in project. Based on the review of VCS PDMR<sup>/01/</sup>, supporting documents<sup>/05/</sup> provided by PP, and through on-site inspection<sup>/VI01/-VI31/</sup>, VVB confirms that agreements signed between the parties are commercially sensitive and were submitted to VVB. Rest, all the relevant information is displayed transparently.

### 3.2 Project Activity Instances in Grouped Projects

As per program definitions v4.5<sup>/B01/</sup>,

“A project to which additional instances of the project activity, which meet pre-established eligibility criteria, may be added subsequent to project validation”

VVB confirms that the VCS project is developed as a grouped project.

The eligibility criteria for grouped project is done in accordance with the VCS standard v4.7<sup>/B01/</sup> which is as follows:

**Table VII: Assessment on eligibility criteria for grouped project and New Project activity Instances**

Sr No.	Description	VVB Assessment
1.	<p><i>Meet the applicability conditions set out in the methodology applied to the project.</i></p> <p><b>Justification:</b></p> <p>New instances of the project will meet the applicability condition as set out in the methodology AR-ACM0003 Version-2.0.</p>	<p>VVB, based on the on-site inspection and interviews<sup>/VI01/-VI31/</sup> and review of the SOP<sup>/13/</sup>, contractual agreements<sup>/05/</sup> and forest/non-forest analysis report<sup>/12/</sup>, confirms the justification of PP as valid and satisfactory.</p>
2.	<p><i>Use the technologies or measures specified in the project description.</i></p> <p><b>Justification:</b></p> <p>All the new instances will be under ARR category as described in section 1.12</p>	<p>Based on the review of the VCS PD &amp; MR<sup>/01/</sup> and on-site inspection and interviews<sup>/VI01/-VI31/</sup>, VVB confirms that the project land parcels are practicing plantation of native bamboo species.</p>

	project description and eligible as per Program standard 4.7 appendix 1 A.1.	
3.	<p>Apply the technologies or measures in the same manner as specified in the project description.</p> <p><b>Justification:</b></p> <p>For new instances, project activity or the manner of project implementation will remain the same as specified in project description. The new instances will have the similar nature of the project activities as defined in section 1.12.</p>	<p>Based on the review of the VCS PD &amp; MR<sup>01/</sup> and on-site inspection and interviews<sup>/VI01/-VI31/</sup>, The VVB confirms that the land parcels within the project areas are actively engaged in the plantation of bamboo species.</p>
4.	<p>Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.</p> <p><b>Justification:</b></p> <p>The future project instances will have similar baseline scenario and additionality demonstrations as described in sections 3.4.</p>	<p>VVB, based on the review of section 1.5 of the VCS PD &amp; MR<sup>01/</sup>, confirms that the project land parcels are under the baseline scenario identified<sup>/18/VI01/-VI02/</sup>. The eligibility criteria for land parcels as per the SOP<sup>13/</sup> and contractual agreements<sup>05/</sup> for new PAIs are also valid.</p>
5.	<p>Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.</p> <p><b>Justification:</b></p> <p>For new instances, approach for considering baseline scenario and additionality will remain the same as validated in Instance-1.</p>	<p>VVB, based on the review of section 3.5 and section 1.5 of the VCS PD &amp; MR<sup>01/</sup>, KML files<sup>09/</sup> confirms that the existing project activity has been appropriately demonstrated as additional in compliance with the tool used. The future PAIs will be demonstrated as the same for the initial project activity.</p>

Furthermore, the eligibility criteria for inclusion of new PAIs have been also demonstrated in the VCS Joint PD & MR<sup>01/</sup> which deems to be applicable and valid for new PAIs and will be checked during the next verification when the new PAIs are included.

**Table VIII: Assessment on eligibility criteria for new Project activity Instances:**

Sr No.	Description	VVB Assessment
1.	<p>Occur within one of the designated geographic areas specified in the project description.</p> <p><b>Justification:</b> The new project activity phase will be within the geographical boundary of Assam.</p>	<p>VVB, based on the on-site inspection and interviews<sup>/VI01/-VI31/</sup> and review of the project boundary and KML shapefiles<sup>/09/</sup>, confirms that the 1<sup>st</sup> PAI and new project activity instances will be among the designated geographic areas and the grouped project boundary is defined as Assam.</p>
2.	<p>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.</p> <p><b>Justification:</b> The project proponent will ensure that the new project activity instance will comply with at least one complete set of eligibility criteria for the inclusion of new project activity instances.</p>	<p>Based on the review of the VCS PD &amp; MR<sup>/01/</sup> and on-site inspection and interviews<sup>/VI01/-VI31/</sup>, VVB confirms that 1<sup>st</sup> PAI is demonstrated the more than one eligibility criteria (such as additionality, baseline, geographic area) and new project activity instance will comply with at least one complete set of eligibility criteria for the inclusion of new project activity instances.</p>
3.	<p>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.</p> <p><b>Justification:</b> All the relevant details related to the new project activity instance will be included in the subsequent monitoring report as described in the eligibility conditions.</p>	<p>Based on the review of the VCS PD &amp; MR<sup>/01/</sup>, SOP<sup>/13/</sup>, monitoring manual<sup>/13/</sup>, KML<sup>/09/</sup>, remote sensing shapefiles<sup>/09/</sup> and on-site inspection and interviews<sup>/VI01/-VI31/</sup>, VVB confirms that PP has provided sufficient technical, financial, geographic, and other relevant information which demonstrates conformance with the applicable set of eligibility criteria.</p>
4.	<p>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 (i.e., the date upon which the project activity instance began reducing or removing GHG emissions).</p> <p><b>Justification:</b></p>	<p>VVB, based on the review of section 1.8 of the VCS PD &amp; MR<sup>/01/</sup>, Land ownership<sup>/05/</sup>, Farmer agreements<sup>/05/</sup> and plantation receipts<sup>/07/</sup> are provided by PP for 1<sup>st</sup> PAI, confirms that new project activity instance will have evidence of project ownership, in respect of each project activity instance, from the respective start date</p>

	Each new project activity instance will have evidence of project ownership in line with the eligibility criteria.	of each project activity instance.
5.	<p>Have a start date that is the same as or later than the grouped project start date.</p> <p><b>Justification:</b></p> <p>Each new project activity instance will have a start date that is the same as or later than the grouped project start date.</p>	<p>VVB, based on the review of the VCS PD &amp; MR<sup>/01/</sup> and on-site inspection/interviews<sup>/18/</sup> &amp; /VI01/-/VI31/ confirms that each new project activity instance will have a start date that is the same as or later than the grouped project start date-</p>
6.	<p>Only be eligible for crediting from the later of 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.</p> <p><b>Justification:</b></p> <p>The new project activity instances added will be eligible for crediting only from the start of the verification period in which they were added to the grouped project.</p>	<p>VVB, based on the review of the VCS PD &amp; MR<sup>/01/</sup> and on-site inspection/interviews<sup>/18/</sup> &amp; /VI01/-/VI31/ confirms that instances of new project activities will be eligible for credit only from the beginning of the verification period in which they were incorporated into the grouped project.</p>
7.	<p>Not be or have been enrolled in another VCS project.</p> <p><b>Justification:</b></p> <p>The new project activity instance will not be or has not been enrolled in another VCS project.</p>	<p>VVB, based on the review of the VCS PD &amp; MR<sup>/01/</sup> and on-site inspection/interviews<sup>/18/</sup> &amp; /VI01/-/VI31/ confirms that the new project activity instance will not be or has not been enrolled in another VCS project.</p>
8.	<p>Adhere to the clustering and capacity limit requirements for multiple project activity instances set out in 3.6.8 - 3.6.9.</p> <p><b>Justification:</b></p> <p>The project proponent will adhere to the clustering and capacity limit requirements for multiple project activity instances while adding new project activity instances. Additionally, there are no capacity limits identified in the methodology.</p>	<p>VVB, based on the review of the VCS PD &amp; MR<sup>/01/</sup> and on-site inspection/interviews<sup>/18/</sup> &amp; /VI01/-/VI31/ confirms that PP will adhere to the clustering and capacity limit requirements for multiple project activity instances while adding new project activity instances.</p>

### 3.3 Safeguards

#### 3.3.1 Stakeholder Engagement and Consultation

##### 3.3.1.1 Stakeholder Identification

In compliance with the VCS PDMR<sup>/01/</sup> and Stakeholder Meeting Invitation Letter<sup>/14/</sup> and Attendance Sheet<sup>/14/</sup>, VVB confirms that several stakeholder consultation meetings were organized by Infinite Environmental Solutions Limited in 2019, 2020 and 2021. The overall goal was to improve the project design based on stakeholders' comments and suggestions and increase local awareness and involvement in the project

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Stakeholder identification</b>	<p>The following steps has been taken by the VVB, to assess the process of stakeholder's consultations and to check analysis used to identify stakeholder's and the stakeholder groups:</p> <ul style="list-style-type: none"> <li>• Review of VCS PDMR<sup>/01/</sup></li> <li>• Review of LSC documents and meeting records<sup>/14/</sup></li> <li>• On-site inspection/interviews<sup>/18/VI01/-/VI31/</sup> with PP and stakeholder/villagers</li> <li>• On-going Grievance Mechanism<sup>/14/</sup></li> </ul> <p>Based on the above assessment references, VVB confirms that the process for identifying stakeholders likely impacted by the project involved a targeted consultation, focusing on key groups such as NGOs and local communities. Key stakeholder groups, including self-motivated lead farmers, were identified to improve community participation, consultations were held across four places (Tarang Gaon, Matikhola, Men taro, and Arsong kanbar Hoari) in Assam's Karbi Anglong district.</p> <p>Based on the document review<sup>/01/</sup>, VVB has ascertained that the following stakeholders have been identified by the PP:</p> <ul style="list-style-type: none"> <li>• Farmers</li> <li>• Local residents</li> </ul>

	<ul style="list-style-type: none"> <li>• Local institution representatives</li> <li>• Daily wage laborers</li> <li>• Holistic life transforming and empowering community (HLTEC) (NGO and implementation partner)</li> <li>• Infinite environmental solutions limited (PP)</li> </ul> <p>PP has followed the process for identification of stakeholders<sup>/14/</sup> and their importance for the project activity which deems to be valid to the VVB.</p> <p>Based on the on-site inspection &amp; interviews<sup>/VI01/-VI31/</sup> and review of the VCS PD &amp; MR<sup>/01/</sup> and other supportive document<sup>/14/</sup> provided by the PP, VVB has ascertained that the stakeholders mapped for the projects are relevant and that no party/individual concerned/affected by the project has been overlooked. Local communities and farmers were introduced to the project's objectives and benefits, particularly in enhancing soil organic carbon. Invitations were provided in the local language to make process culturally appropriate which outlined the meeting details and structure of project.</p> <p>During consultation meetings, stakeholders shared feedback on the project's design and impact, with a response team facilitating discussions and addressing concerns. The interested farmers could voluntarily register through phone calls, office visits, or via local representatives, ensuring broad participation.</p> <p>Furthermore, the feedback received from stakeholders during on-site interviews<sup>/VI01/-VI31/</sup> have been addressed by the PP and is deemed appropriate by the VVB.</p>
<p><b>Legal or customary tenure/access rights</b></p>	<p>VVB, based on the review of the land ownership titles <sup>/05/</sup>, contractual agreements with the land owners (farmers)<sup>/05/</sup> and on-site inspection/interviews<sup>/VI01/-VI31/</sup> confirms that all project activities are being conducted on privately owned lands (Lands are allotted by village headman, and farmers have received the certificate of land ownership). The landowners hold clear and uncontested titles to the land, and for the 1<sup>st</sup> PAI, there are no lands with Customary or traditional rights are involved. legal or customary access rights that could interfere with project implementation and not altered with project implementation.</p>

	<p>VVB noted that the project location falls under the jurisdiction of an autonomous district council, i.e. the Karbi Anglong Autonomous Council. This council has jurisdiction over the two districts Karbi Anglong and West Karbi Anglong. This has been confirmed by the VVB via interviews with representatives of the PP as well from the website: <a href="https://karbianglong.gov.in/">https://karbianglong.gov.in/</a>. Therefore, land ownership in the villages of the region is usually determined by the village headman which has been confirmed by the VVB via interviews with the farmers/ land owners/ relatives of the land owners. The same has been cross checked based on the land ownership certificates which is signed between the village headman and the land owner<sup>/05/</sup>.</p> <p>Additionally, based on the onsite inspections<sup>/VI01/-VI31/</sup> VVB, confirms that during the onboarding process it was ensure 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. The farmers were aware of carbon rights and have transferred their rights for carbon to HLTEC. Thus, it is confirmed that project is in accordance with the VCS section 3.18.1 clause (2) requirements.</p>
<p><b>Stakeholder diversity and changes over time</b></p>	<p>VVB, based on the review of the Joint VCS PD &amp; MR<sup>/01/</sup>, PRA<sup>/14/</sup> and on-site inspection/interviews<sup>/VI01/-VI31/</sup>, confirms that most of the farmers participating in the project are socio-economically the project communities depend mainly on subsistence farming practices and tied to regional social structures. Education, politics, and policies influence this diversity. Farmers understand the benefits of plantations, carbon mitigations, benefits from employment opportunities in plantation activities and nurseries and Income levels vary across stakeholders. Factors like land ownership and farming-scale highlight economic diversity among the stakeholders. In relation to cultural diversity, it is confirmed that the Karbi Anglong communities of Assam, celebrate cultural diversity, emphasizing women’s participation. Overall, VVB confirms that the project is expected to enhance health, economic growth, and employment for tribal communities.</p>
<p><b>Expected changes in well-being</b></p>	<p>Based on PDMR<sup>/01/</sup> and further doing on-site visit &amp; interviews<sup>/VI01/-VI31/</sup>, VVB determines that the project has been well-conceived and executed, providing support to farmers by generating revenue,</p>

	<p>empowering the women community, and contributing to the enhancement of ecosystem services. Consequently, the VVB affirms that the project does not generate adverse effects on local stakeholders and has a mitigation plan in place for any potential risks that may arise in the future. Moreover, local stakeholders are not only avoiding negative impacts but are also deriving benefits from carbon revenue, in addition to other livelihood. As assessed above the project is indirectly expected to improve the well-being of the local populations and increase income. Thus, the project is in line with the section 3.18.1 clause (4.5) requirements of the VCS standard.</p>
<p><b>Location of stakeholders</b></p>	<p>VVB, based on the KML<sup>/09/</sup>, remote sensing shapefiles<sup>/09/</sup> and on-site inspection/interviews<sup>/VI01-VI31/</sup>, confirms that the location of stakeholders and local farmer/tribal communities are present at districts of Assam (Karbi Anglong) Thus, the project is in line with the section 3.18.1 clause (6) requirements of the VCS standard.</p>
<p><b>Location of resources</b></p>	<p>VVB, based on the KML<sup>/09/</sup>, remote sensing shapefiles<sup>/09/</sup> and on-site inspection/interviews<sup>/VI01-VI31/</sup>, confirms that project stakeholder resources are in and around the project area, since the current project is being implemented on privately owned lands in districts of Assam.</p>

### 3.3.1.2 Stakeholder Consultation and Ongoing Communication

As per the VCS Joint PD & MR<sup>/01/</sup>, the Local Stakeholder Consultation meetings in a phased manner from 2019 to 2022 <sup>/14/</sup>, engaging with stakeholders and all members across all district project areas.

Sr.No.	Date	Place/Location
1	27-May-2019	Terang gaon, Rongkhang, Karbi Anglong
2	01-June-2019	Matikhola Timung Gaon, Samelangso, Karbi Anglong
3	04-June-2019	Terang Gaon, Rongkhang, Karbi Anglong
4	07-March-2020	Men taro, Samelangso, Karbi Anglong
5	18-June-2020	Men Taro, Samelangso, Karbi Anglong

6	12-May-2021	Matikhola Timung Gaon, Samelangso, Karbi Anglong
7	04-February-2022	Arsong Kanbor Horai, Rongkhang, Karbi Anglong
8	03-May-2022	Bhek Killing Gaon, Karbi Anglong

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Stakeholder engagement process</b>	<p>As per the VCS Joint PD &amp; MR<sup>/01/</sup> and Stakeholder consultation evidence meeting invitation letters, minutes and attendance sheet documents<sup>/14/</sup> VVB confirms that all the meetings were coordinated by Infinite Environmental Solutions Limited in collaboration with implementation partners. During stakeholder consultation following topics were discussed:</p> <ul style="list-style-type: none"> <li>✓ Introduction of the project</li> <li>✓ Project details including eligibility and applicability criteria, benefits and Permanence.</li> <li>✓ About VCS and CDM mechanism</li> <li>✓ Benefits from the project</li> <li>✓ Grievance mechanism for stakeholders</li> <li>✓ Carbon stocks assessment methods</li> <li>✓ Monitoring process for sustainable development</li> <li>✓ Closure of the meeting via suggestions taken up from farmers and filling up of the feedback forms</li> <li>✓ Question and Answer session</li> </ul> <p>During the on-site interviews</p> <p><sup>/VI01/-VI31/</sup> with famers and other stakeholders, the following questions were asked by the VVB:</p> <ol style="list-style-type: none"> <li>1. Are you familiar with the details of the project?</li> <li>2. Are you informed about the carbon credits and associated revenues?</li> <li>3. Has the project positively impacted your living standards or income?</li> <li>4. Have you received invitation to provide your comments and feedback on the project?</li> </ol>

	<p>5. Were the comments you provided addressed by the PP?</p> <p>6. Have you undergone any training for capacity building and/or monitoring procedures?</p> <p>7. Was your plot/land parcel considered as part of the project?</p> <p>The stakeholder engagement process was designed to be inclusive and culturally sensitive, ensuring active participation across diverse community groups. Invitations were distributed through multiple channels, including Gram Sabha offices and village leaders, in both Assamese and English, providing stakeholders ample time to prepare. The engagement followed a phased approach, beginning with awareness creation through local leaders, fostering trust and encouraging participation from women and marginalized groups. Community consultations were conducted in village meetings to explain the environmental, social, and economic benefits of Bambusa tulda cultivation. Individual farmers also participated in small-group discussions and one-on-one consultations, allowing them to voice concerns on planting techniques and water usage, which were incorporated into the project design.</p> <p>VVB confirms that PP has employed documentation methods such as meeting records<sup>/14/</sup>, photographs<sup>/14/</sup>, attendance tracking<sup>/14/</sup>, and feedback forms<sup>/14/</sup> ensured transparency and accountability. Gender-sensitive strategies created a comfortable environment for women’s involvement, while cultural traditions were respected through accessible scheduling and neutral venues. Ongoing communication, including follow-ups, project updates, and a grievance redressal mechanism, fosters long-term stakeholder trust and engagement.</p> <p>Based on the review of stakeholder documents<sup>/14/</sup>, during on-site inspection<sup>/VI01/-VI31/</sup>, VVB affirms that Local Stakeholder Consultations have been carried out in local languages. Additionally, feedback forms were distributed to farmers during these consultations, a practice also evaluated by VVB in the on-site inspection<sup>/IV/01/-/IV/31</sup> and found to be suitable and appropriate.</p> <p>In summary, VVB concludes that the Local Stakeholder Consultations<sup>/14/</sup> conducted by the PP align with the requirements set out in section 3.18 of the VCS standard and further supporting evidence are also reported in the PDMR<sup>/01/</sup>.</p>
<p><b>Consultation outcome</b></p>	<p>Based on the on-site inspection<sup>/VI01/-VI31/</sup> and evidence stakeholder consultation documents<sup>/14/</sup> the VVB affirms that the PP effectively communicated various aspects of the project, including its design,</p>

implementation, monitoring outcomes, risks, costs, benefits, local regulations, and the validation process. This communication was achieved through:

- Highlighting the impact of climate change and the project's role in mitigating greenhouse gas emissions through sequestration, thereby creating a sustainable income source via plantation practices.
- Conducting presentations detailing the entire process of VCS validation, verification, issuance, and emphasizing the significance of site visits by the VVB, seeking cooperation during these visits.
- Benefit sharing mechanism, FPIC is communicated through the stakeholder meetings and obtained their consent through signing the farmer agreements<sup>/05/</sup> and benefit transfer letters<sup>/05/</sup> to implement the project activity.
- The PP also established a code of conduct policy<sup>/16/</sup> which ensures the worker rights policy promoting fairness, respect, and dignity, ensuring an inclusive and equitable work environment where all employees have equal opportunities.
- Producing brochures/factsheets in local languages, such as Assamese in addition to Hindi/ English, covering the mentioned aspects.
- Creating infomercials containing project details, including risk and cost-benefit analysis associated with Carbon Credit and market conditions, for dissemination..
- Engaging in meetings with farmers through Implementation partners.
- Explaining prevailing laws and regulations related to felling/harvesting and local/national labor laws through one-to-one meetings.

VVB observed that farmers were aware of the project and its registration in VERRA. The PP provided capacity training, confirmed the locations of sample plots included in the project, and based on the assessment, document review<sup>/14/</sup>, and on-site inspection<sup>/VI01-VI31/</sup>, VVB confirms the following:

- PP has summarized stakeholder input received during the local stakeholder consultation meeting.

	<ul style="list-style-type: none"> <li>- Given the absence of negative comments from stakeholders, the project proponent is not required to consider all and any input.</li> <li>- PP has effectively communicated project information to local stakeholders regarding design, implementation, risks, costs, and benefits.</li> <li>- VVB has ascertained that the project complies with national laws, statutes and other regulatory frameworks.</li> </ul> <p>Additionally, VVB, based on documentation review<sup>/14/</sup> and during on-site inspection<sup>/VI01/-VI31/</sup> confirms that Local Stakeholder Consultations were conducted in local languages (Karbi and Assamese). Feedback forms<sup>/14/</sup> were distributed to farmers during these consultations and were also reviewed by VVB during the on-site<sup>/VI01/-VI31/</sup> section, deeming them suitable and appropriate. Thus, the project is in compliance with the section 3.18.2 of the VCS standard.</p>
<p><b>Ongoing communication</b></p>	<p>VVB, following on-site interviews and inspection<sup>/VI01/-VI31/</sup>, on review of SOP<sup>/13/</sup> and evaluation of the grievance mechanism<sup>/08/</sup>, confirms that Infinite Environmental Solutions Limited has established a structured process enabling stakeholders to uphold ongoing communication involving direct community meetings, online platforms and raise concerns related to the impacts of the project activities. Furthermore, PP has provided stakeholders with Grievance Redressal Contact Sheet, which includes contact information of both PP and implementation partner. Same document explains grievance redressal process, to ease the process of ongoing communication. Thus, the VV team confirms that there is an appropriate ongoing communication channels in place to account of all input received during the stakeholder consultation and through ongoing communications, therefore the project is in line with section 3.18.3 requirements of the VCS standard.</p>
<p><b>Stakeholder input</b></p>	<p>Some of the inputs received from local stakeholder meeting members were related to following points:</p> <ul style="list-style-type: none"> <li>- Stakeholder meetings</li> <li>- Carbon revenues</li> <li>- Field support</li> <li>- Livelihood</li> </ul>

Report on the consideration of received comments, PP has acknowledged and considered the inputs received, addressing them effectively during the meetings. The PP has established SOPs<sup>/13/</sup> outlining the incorporation of inputs into training. Furthermore, contractual agreements<sup>/05/</sup> have been entered into with farmers over time, explicitly specifying their rights concerning carbon credits and the revenue generated from their sale. VVB based on the review of stakeholder evidence<sup>/14/</sup> confirms that the stakeholder feedback was positive and encouraging, reflecting satisfaction with increased participation in the project. VVB based on the review of stakeholder consultation documents<sup>/14/</sup> confirms that the stakeholder inputs were recorded via a form<sup>/14/</sup>, with issues addressed during the meetings. Farmers raised queries on species, models, soil, and harvesting, which PP addressed during multiple Local Stakeholder Consultations (LSCs). In accordance with VCS Standard v4.7, Section 3.17.4, projects are required to document stakeholder consultations and demonstrate that any concerns raised have been considered and addressed. While no modifications were deemed necessary, the project proponent has transparently recorded all feedback received and the issues/queries were solved in subsequent stakeholder meetings as confirmed by farmers during onsite visit. Stakeholders, including women and small farmers, expressed optimism about the bamboo project's economic and environmental benefits and requested expansion. Feedback forms, verified by the audit team, confirmed strong community support. PP committed to future meetings to clarify carbon assessments. During onsite inspections, the VVB confirmed widespread support, especially for the project's impact on marginalized communities and its sustainability goals.

Overall, VVB concludes that the LSC<sup>/14/</sup> done by PP is in line with the standard requirements and is appropriate.

### 3.3.1.3 Free, Prior, and Informed Consent

Item	Evidence gathering activities, evidence checked, and assessment conclusion
Obtaining consent	VVB, based on the FPIC <sup>/14/</sup> signed in-between the farmer and PP, confirms that PP has the sole right to generate credits from the

	<p>referenced farmland. They bear complete responsibility for facilitating verification, audit, and issuance processes. The landowner pledges not to sell, and will abstain from selling in the future, any greenhouse gas (GHG) reductions or removals produced from plantation activities to any entity other than the proponent. Moreover, the landowner has agreed to waive all legal rights associated with relevant carbon standards.</p> <p>Based on the contractual agreement<sup>/05/</sup>, VVB also outlines the terms and conditions regarding ownership and the revenue derived from carbon credit sales.</p> <p>VVB based on review of contractual agreement<sup>/05/</sup> and onsite interviews<sup>/VI01/-VI31/</sup> confirms that project does not impact local stakeholders' property rights.</p> <p>VVB has confirmed through interviews that the FPIC<sup>/05/</sup> was followed prior project implementation and found to be appropriate.</p>
<p><b>Outcome of FPIC discussion</b></p>	<p>VVB based on review of contractual agreement<sup>/05/</sup>, onsite interviews<sup>/VI01/-VI31/</sup>, grievance mechanism<sup>/05/</sup> and FPIC process and documentation<sup>/05/</sup>, affirms that farmers are adequately informed and possess knowledge regarding GHGs, the environmental impact of GHGs, the grievance redressal mechanism, as well as initiatives to enhance local awareness, involvement in the project, and carbon credits and confirmed through the signing of contract.</p>

### 3.3.1.4 Grievance Redress Procedure

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<p><b>Development process</b></p>	<p>As per the VCS Joint PD&amp; MR<sup>/01/</sup>, the grievance redress procedure has been set up by the PP in compliance with VCS standard v4.7<sup>/B01/</sup>. The implementations partner, HLTEC developed the grievance mechanism based on the stakeholder assessments<sup>/14/</sup> which ensures their accessibility to receive, raise and resolve the grievances.</p> <p>During the <sup>/VI01/-VI31/</sup>on-site inspection<sup>/VI01/-VI31/</sup> VVB reviewed the grievance logbook and mechanism<sup>/14/</sup> which is in line with the VCS requirements. The grievance mechanism, as evaluated by the VVB, has been designed to ensure that the perspectives of all</p>

	<p>stakeholders are effectively communicated to higher management authorities.</p>	
<p><b>Grievance redress procedure</b></p>	<p>Based on-site inspection<sup>/VI01/-VI31/</sup> and on review of grievance mechanism<sup>/14/</sup> and SOPs<sup>/13/</sup> by the VVB, confirms that the farmers can express their grievances by utilizing the provided logbook, phone, email, directly-contacting the local partner. PP has confirmed that all the queries/complaints will be addressed by local NGO (HLTEC) representatives and data maintained at PPs head office. Further, based on the review of grievance mechanism<sup>/14/</sup> and onsite inspections confirms that there are no grievances received during the current monitoring period.</p>	
	<p>The project proponent shall develop a grievance redress procedure to address disputes with stakeholders that may arise during project planning and implementation, including regarding benefit sharing and all other safeguard and stakeholder engagement requirements mentioned in Sections 3.18 and 3.19 respectively.</p>	<p>As per the PDMR<sup>/01/</sup>, VVB confirms that grievance redress procedure<sup>/08/</sup> is in place to address disputes with local stakeholders that may arise during project planning and implementation. VVB has confirmed the same during the review of grievance mechanism<sup>/14/</sup> during on-site interviews<sup>/VI01/-VI31/</sup>.</p>
	<p>The grievance redressal procedure shall have following three stages:</p>	
	<p>1) The project proponent shall attempt to amicably resolve all grievances and provide a written response to the grievances in a manner that is culturally appropriate.</p>	<p>During the on-site inspection<sup>/VI01/-VI31/</sup> VVB has reviewed the grievance mechanism<sup>/14/</sup> and confirms that the mechanism is in line with the VCS requirements. The grievance mechanism, as evaluated by the VVB, has been designed to ensure that the perspectives of all stakeholders are effectively communicated to higher management authorities. When farmers or other stakeholder raise concerns, a systematic approach is taken</p>

		<p>for resolution. Attempts are made for local resolution by NGO representatives, if local resolution is unattainable, the matter will be sent to the Project Proponent for further consideration and resolution. This ensures a formalized culturally appropriate grievance mechanism. Further PP has a stakeholder response team comprising of expert members of all related fields to ensure transparent, impartial and culturally appropriate communication with stakeholders. VVB based on the interviews with individual farmers<sup>/VI01/-VI31/</sup> confirms that farmers can contact local partners or project enumerators directly. All the grievances received are recorded in the grievance registers<sup>/14/</sup> and grievances database is also maintained in the PP's head office.</p>
	<p>2) Any grievances that are not resolved by amicable negotiations shall be referred to mediation by a neutral third party</p>	<p>Based on the review of PDMR<sup>/01/</sup> and onsite inspection<sup>/VI01/-VI31/</sup> VVB confirms for the third-party mediation, all unresolved grievances will be resolved by expert member mediation, ensuring an unbiased resolution process. Neutral third party may include agricultural experts, environmental consultants, or academics.</p>
	<p>3) Any grievances that are not resolved through mediation shall be referred either to a)</p>	<p>Based on the review of PDMR<sup>/01/</sup> and onsite interviews<sup>/VI01/-VI31/</sup> PP has</p>

	<p>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 adjudicatory body, if any.</p>	<p>confirmed that any grievances that will not be resolved through mediation shall be referred either escalate to arbitration or be referred to competent local legal frameworks/courts (national courts, or possibly a higher international body, as applicable).</p>
	<p>All communication and consultation shall be performed in a culturally appropriate manner, including language and gender sensitivity, directly with local stakeholders or their legitimate representatives when appropriate.</p>	<p>Based on the review of PDMR<sup>/01/</sup>, LSC evidence<sup>/14/</sup>, SOPs<sup>/13/</sup> and onsite interviews<sup>/VI01/-VI31/</sup> VVB confirms that stakeholder consultations were held to engage local stakeholders in culturally appropriate, gender sensitive manner and local languages Karbi, Assamese and Hindi, which ensures the better understanding and free participation of stakeholders. The consultations are conducted directly with farmers and their representatives. General queries are resolved locally by NGO staff. Further, VVB confirms<sup>/14/</sup> that, upon receipt of grievances, a period of one months is followed for the resolution and response. The grievance mechanism includes indicative time frames for acknowledgment, interim responses, and final resolution where possible and this will be conveyed in a final conventional letter.</p>

	<p>The procedure and documentation of disputes resolved through the procedure shall be made publicly available.</p>	<p>Based on the review of PDMR<sup>01/</sup>, LSC evidence<sup>14/</sup>, SOPs<sup>13/</sup> and onsite interviews<sup>VI01/-VI31/</sup> VVB confirms that the Grievance mechanism<sup>14/</sup> is accessible to the public, grievance can be submitted in-person, Grievance Register, phone, text message, social media platforms, and email throughout the project lifetime. Furthermore, PP has confirmed that once the grievances are addressed, the answers and resolutions will be thoroughly documented, recorded and made publicly available during stakeholder consultations in line with section 3.18.4 of VCS requirements.</p>
	<p>In conclusion, VVB confirms that the PP has developed a appropriate grievance resolution procedure involving receipt (Acknowledgement within 3-5 days), review, response, and resolution within a month, utilizing culturally appropriate methods like 3 step process including amicable resolution, mediation by expert member, and arbitration by host country laws in line with VCS standard. HLTEC and PP experts are included to ensure transparency, fairness, and compliance with local laws. Thus, all the above assessment confirms that the process of the grievance redress procedure includes processes for receiving, hearing, responding, and attempting to resolve grievances, considering culturally appropriate conflict resolution methods. Therefore, the project is in line with the section 3.18.4 requirements of the VCS standard 4.7.</p>	

3.3.1.5 Public Comments

The project was open for public comment from 15<sup>th</sup> August 2022 to 14<sup>th</sup> September 2022. VVB has confirmed from the VCS website that there was no public comment received during this period.

Comments received	Actions taken by the project proponent	Evidence gathering activities, evidence checked, and assessment conclusion
None	Not Applicable	VVB has confirmed from the VCS website that there was no public comment received during this period.

### 3.3.2 Risks to Local Stakeholders and the Environment

#### 3.3.2.1 Management Experience

Based on review of Management plan<sup>/13/</sup>, SOPs<sup>/13/</sup> which includes the competency of the project team and during the on-site inspections<sup>/VI01/-VI31/</sup> the background check of PP was carried out, thus VVB confirms that the management teams involved in the project have expertise and prior experience implementing land management and carbon projects with community engagement. Project activity involves team of experienced staff with expertise in various areas such as Agriculture, Agroforestry. VVB have reviewed CVs management staff<sup>/13/</sup> engaged in the project implementation. VVB confirms that personnel involved in the project are equipped with knowledge and experience for smooth implementation of the project.

#### 3.3.2.2 Risk Assessment

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<b>Natural and human-induced risks to stakeholders' wellbeing</b>	<p>Based on the on-site inspection<sup>/VI01/-VI31/</sup> &amp; review of documents<sup>/01/05/12/16/</sup>, VVB confirms that the project is expected to beneficially impact the local stakeholder and there are no negative environmental and socio-economic impacts due to project implementation<sup>/01/05/12/16/</sup>.</p> <p>The project is not only increasing the tree cover within the project boundary but also benefiting the local communities by providing livelihood generation</p>

	<p>opportunities in the villages concerned by the project<sup>/01/02/</sup>.</p> <p>Considering the information on project implementation and on-site interviews<sup>/VI01/-VI31/</sup>, VVB confirms that the project will not lead to any negative impact on local stakeholders.</p>
<p><b>Risks to stakeholder participation</b></p>	<p>VVB based on onsite interviews<sup>/VI01/-VI31/</sup> and on review of the management plan<sup>/13/</sup>, stakeholder consultation evidence<sup>/14/</sup> and PDMR<sup>/01/</sup> confirms that the project is anticipated to bring positive benefits to local stakeholders, with no adverse environmental or socio-economic impacts. After reviewing information on project implementation, the monitoring process<sup>/01/</sup>, and conducting on-site interviews<sup>/VI01/-VI31/</sup>, VVB affirms that the project will not have any detrimental effects on local stakeholders.</p> <p>The resource access rights of the key stakeholders are well identified and protected under the signed contractual agreement which ensures the collaboration and participation of stakeholders without any potential risks. Multiple stakeholder consultations were held to communicate and consult with local stakeholders. Apart from this, a robust and transparent institutional mechanism is in place that serves as the mechanism for grievance redressal<sup>/14/</sup>.</p>
<p><b>Working conditions</b></p>	<p>VVB on conducting on-site inspection<sup>/VI01/-VI31/</sup> and based on the review of Labor law<sup>/16/</sup>, management plan<sup>/13/</sup> and SOPs<sup>/13/</sup> VVB verifies that within the project context, farmers actively participate in planting bamboo on their farmlands to improve environmental well-being. VVB affirms that plantation activities have been successfully carried out in district of Assam state, project ensures the favorable working conditions, equitable payments and enhance the overall quality of life for employees, as well as streamline labor laws to facilitate business operations as per the report of Ministry of Labor and Employment, Government of India<sup>/16/</sup> and will not have any working conditions risks on the participating bodies.</p>

<p><b>Safety of women and girls</b></p>	<p>VVB based on conducting on-site inspection<sup>/VI01/-VI31/</sup>, and on review of Labor law<sup>/16/</sup>, SOPs<sup>/13/</sup> and Management plan<sup>/13/</sup> includes safety norms followed by the PP and conducted the various awareness programs in relation to safety of women. VVB verifies that within the project context, in accordance with the Ministry of Women and Child Development’s report<sup>/16/</sup>, the initiative encompass welfare and support services, employment and income generation training to women and girls. VVB affirms that plantation activities have been successfully carried out with no risk to safety of women and girls. Thus, the project is in line with section 3.19.8 requirements of the VCS standard.</p>
<p><b>Safety of minority and marginalized groups, including children</b></p>	<p>VVB based on conducting on-site inspection<sup>/VI01/-VI31/</sup>, and on review of report by Ministry of tribal affairs, Government of India<sup>/16/19/</sup>, SOPs<sup>/13/</sup> and Management plan<sup>/13/</sup> and conducted the various awareness programs, confirms that the Safety of minority and marginalized groups, including children ensured by the PP by adhering to above mentioned host country policies<sup>/19/16/</sup>. Thus, the project is in line with section 3.19.9 requirements of the VCS standard.</p>
<p><b>Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials, and chemical pesticides and fertilizers)</b></p>	<p>VVB, based on the on-site inspection<sup>/VI01/-VI31/</sup> and review of SOPs<sup>/13/</sup>, Management plan<sup>/13/</sup> confirms that there is no usage of chemical fertilizers, pollutants in the project area. The project involves only plantation activities. As per the onsite inspections<sup>/VI01/-VI31/</sup> it has been confirmed that, the farmers have only used Farm Yard Manure (FYM) for bamboo plantation. Therefore, VVB confirms that no risk was identified in relation to the pollutants (generation and release of the plastic waste) since project only involves the plantation activity and does not generate any pollutants. The same was observed during the audit team onsite inspections<sup>/VI01/-VI31/</sup>. 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 in case of a risk.</p>

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
<b>Discrimination</b>	VVB, based on the review of the HR policies <sup>/16/</sup> and code of conduct <sup>/16/</sup> and on-site inspection <sup>/VI01/-VI31/</sup> , confirms that PP has anti-sexual harassment norms, which confirms that no entity involved in project design or implementation has been involved in any form of discrimination or sexual harassment. Therefore, the project is in line with section 3.19.11 requirements of the VCS standard.
<b>Sexual harassment</b>	VVB, based on the review of the HR policies <sup>/16/</sup> and code of conduct <sup>/16/</sup> and on-site inspection <sup>/VI01/-VI31/</sup> , confirms that PP has anti-sexual harassment norms, which confirms that no entity involved in project design or implementation has been involved in any form of discrimination or sexual harassment. Therefore, the project is in line with section 3.19.11 requirements of the VCS standard.
<b>Equal pay for equal work</b>	Based on the review of employment payment log <sup>/12/</sup> , PP has demonstrated commitment to providing equal pay for equal work. Furthermore, PP has established policies <sup>/16/</sup> to ensure equal pay irrespective of gender, sex, race or religion.
<b>Gender equity in labor and work</b>	VVB, based on the review of the HR policies <sup>/16/</sup> , stakeholder attendance sheets <sup>/14/</sup> , and SOPs <sup>/13/</sup> which demonstrates the norms of Gender equity in labor and work followed by the PP and on-site inspection <sup>/VI01/-VI31/</sup> , confirms that the project practices will result in the improvement of the environment as well as the socio-economic conditions of the stakeholders by ensuring the equal opportunities have been or will be provided in the context of gender equity and pay for labor and work. Therefore, VVB confirms that this project is engaging women who actively participate in roles encompassing management, design, implementation and nursery as part of the project activity
<b>Forced labor</b>	VVB based on-site inspection <sup>/VI01/-VI31/</sup> and on the review of the stakeholder attendance sheets <sup>/14/</sup> , Code of Conduct Policy <sup>/16/</sup> and SOPs <sup>/13/</sup> which demonstrates the norms of human safety followed by the PP, confirms that the PP has demonstrated

	and ensured the commitment to prohibiting the use of forced labor. Therefore, based on the all the above assessment provided in the section confirms that the project is in line with sections 3.19.11 to 3.19.18 of VCS Standard v4.7 requirements.
<b>Child labor</b>	VVB based on-site inspection <sup>/VI01/-VI31/</sup> and on the review of the stakeholder attendance sheets <sup>/14/</sup> , Code of Conduct Policy <sup>/16/</sup> and SOPs <sup>/13/</sup> which demonstrates the norms of human safety followed by the PP, confirms that the PP has demonstrated and ensured the commitment to prohibiting the use of child labor. Therefore, based on the all the above assessment provided in the section confirms that the project is in line with sections 3.19.11 to 3.19.18 of VCS Standard v4.7 requirements.
<b>Human trafficking,</b>	VVB based on-site inspection <sup>/VI01/-VI31/</sup> and on the review of the stakeholder attendance sheets <sup>/14/</sup> , Code of Conduct Policy <sup>/16/</sup> and SOPs <sup>/13/</sup> which demonstrates the norms of human safety followed by the PP, confirms that the PP has demonstrated and ensured the commitment to prohibiting the victims of human trafficking. Therefore, based on the all the above assessment provided in the section confirms that the project is in line with sections 3.19.11 to 3.19.18 of VCS Standard v4.7 requirements.

### 3.3.3.2 Human Rights

<b>Risks identified</b>	<b>Evidence gathering activities, evidence checked, and assessment conclusion</b>
<b>No risk identified</b>	VVB, based on the FPIC consent <sup>/14/</sup> and on-site inspection <sup>/VI01/-VI31/</sup> , confirms that the project recognizes, respects, and promotes the protection of the rights of IPs, and customary rights holders in line with applicable international human rights law and prohibits discrimination and sexual harassment, 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.

### 3.3.3.3 Indigenous Peoples and Cultural Heritage

Risk identified	Evidence gathering activities, evidence checked, and assessment conclusion
Preservation and protection of cultural heritage	VVB, based on the on-site inspection <sup>/VI01/-VI31/</sup> and review of The Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976 <sup>/19/</sup> , Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act, 1989 <sup>/19/</sup> , confirms that the project activities involve plantation of those species of bamboos which is commonly used by local farmers in their farm, without introducing any new tree species. The project activity also conserves the sacred grooves in the Karbi tribal villages. 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.

### 3.3.3.4 Property Rights

Risks identified	Evidence gathering activities, evidence checked, and assessment conclusion
Rights to territories and resources	VVB, based on the review of land agreements <sup>/05/</sup> FPIC consent <sup>/14/</sup> and on-site inspection <sup>/VI01/-VI31/</sup> , confirms that the project lands are owned by the individual farmers and there are no conflicting rights over territories and resources identified in the project area.
Respect for property rights	VVB has verified the documents <sup>/05/</sup> during the on-site inspection <sup>/VI01/-VI31/</sup> and based on the contractual agreements <sup>/05/</sup> , Stakeholder consultation documents <sup>/14/</sup> confirm that the project safeguards, respects property rights and the proponent ensures community, farmers participation in decision-making, benefiting livelihoods and forest conservation. Therefore, VVB ascertains that the project in line with the 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
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<p><b>Process used to design the benefit sharing plan</b></p>	<p>Based on a review of the contractual agreements<sup>/05/</sup>, stakeholder meeting evidence<sup>/14/</sup> and onsite interviews with the stakeholders<sup>/18/VI01-/VI31/</sup>, 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-</p>
<p><b>Summary of the benefit sharing plan</b></p>	<p>VVB based on the onsite inspections<sup>/VI01-VI31/</sup> and on review of the agreements between the PP and HLTEC/05/ and the agreements between the Farmers and HLTEC (Implementation partner)<sup>/05/</sup> confirms that Carbon Credit Agreements outlines clear, fair, transparent benefit sharing percentages (considered as commercially sensitive information) and ownership and project longevity, in compliance with VCS standard section 3.19.22 requirements. Further 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, volume of carbon sequestration.</p>
<p><b>Approval and dissemination of benefit sharing plan</b></p>	<p>VVB based on the review of the agreements between the PP and HLTEC<sup>/05/</sup> and agreements between the Farmers and HLTEC (Implementation partner)<sup>/05/</sup> confirms that Carbon Credit Agreements are appropriately communicated in the local languages during the LSC meetings to farmer communities before the implementation of the project and voluntarily signed upon agreed mutually. Further VVB evidenced the same during the onsite<sup>/VI01-VI31/</sup> interviews with the farmers.</p>
<p><b>Benefit sharing during the monitoring period</b></p>	<p>VVB based on onsite interviews<sup>/VI01-VI31/</sup> and on review of the agreements<sup>/05/</sup> confirms that incentives will be paid to the farmers through the HLTEC by depositing revenues in their bank accounts. Note, that since this is the project's 1st joint validation and verification no carbon credit revenues are generated.</p>

### 3.3.4 Ecosystem Health

Item	Evidence gathering activities, evidence checked, and assessment conclusion
<p><b>Impacts on biodiversity</b></p>	<p>VVB, based on the on-site inspection<sup>/VI01-VI31/</sup> and review of SOPs<sup>/13/</sup>, Management plan<sup>/13/</sup> confirms that the project activity is only involves plantation activities with no negative impacts on the biodiversity and</p>

<p><b>and ecosystems</b></p>	<p>ecosystems in the project region, moreover it has positive impacts on the forest biodiversity by the improving the green cover in the project areas. 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.</p>
<p><b>Soil degradation and soil erosion</b></p>	<p>VVB, based on the on-site inspection<sup>/VI01-VI31/</sup> and review of SOPs<sup>/13/</sup>, Management plan<sup>/13/</sup> confirms that the project activity is only involves bamboo plantation activities which improves the soil properties, structures with no significant soil degradation and soil erosion in the project region, the same was supported by a study “Effect of different bamboo species on soil properties”<sup>/17/</sup>. Moreover, the project implemented with less than 2.5% soil disturbance. 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.</p>
<p><b>Water consumption and stress</b></p>	<p>VVB, based on the on-site inspection<sup>/VI01-VI31/</sup> and review of SOPs<sup>/13/</sup>, Management plan<sup>/13/</sup> confirms that the project activity is only involves bamboo plantation activities which store water in bamboo rhizomes during the lifetime of plant with no significant effect on Water consumption and stress in the project region, the same was supported by a study “Ecosystem Services From Bamboo Forests Key Findings Lessons Learnt And Call For Actions From Global Synthesis”<sup>/17/</sup>. 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</p>

### 3.3.4.1 Rare, Threatened, and Endangered species

<p><b>Risk identified</b></p>	<p><b>Evidence gathering activities, evidence checked, and assessment conclusion</b></p>
<p><b>Species and habitat</b></p>	<p>VVB, based on the on-site inspection<sup>/VI01-VI31/</sup> and supporting documents<sup>/17/</sup> and web research <a href="#">India Biodiversity Portal</a> confirms that the project is not situated in or near the habitats of rare, threatened, or endangered species.</p>
<p><b>Areas needed for habitat connectivity</b></p>	<p>VVB, based on the on-site inspection<sup>/VI01-VI31/</sup> and supporting documents<sup>/17/</sup> and web research <a href="#">India Biodiversity Portal</a> confirms that the project is not situated in or near the habitats of rare, threatened, or endangered species, hence no areas are allocated for habitat connectivity.</p>

### 3.3.4.2 Introduction of Species

Species introduced	Evidence gathering activities, evidence checked, and assessment conclusion
<i>Bambusa tulda</i>	VVB, based on the on-site inspection <sup>/VI01/-VI31/</sup> and through the web research <i>Bambusa tulda Roxb.</i>   Plants of the World Online   Kew Science <sup>/17/</sup> confirms that the species is native to Assam it has no adverse effect in the environment.

Existing invasive species	Evidence gathering activities, evidence checked, and assessment conclusion
<i>Lantana camara</i>	Based on the onsite inspections <sup>/VI01/-VI31/</sup> , on review of SOPs <sup>/13/</sup> and Management plan <sup>/13/</sup> confirms this identified invasive species is mitigated by uprooting the entire plant in the project region.

Evidence gathering activities, evidence checked, and assessment conclusion	
Invasive species	NA

### 3.3.4.3 Ecosystem conversion

Risks Identified	Evidence gathering activities and evidence checked
Ecosystem conversion	VVB, based on the on-site inspection <sup>/VI01/-VI31/</sup> and the data from LULC Maps <sup>/10/</sup> , Forest/Non-Forest Analysis Report <sup>/10/</sup> , confirms that no project activity was undertaken to clear the existing ecosystem in last ten years and the project lands are degrading shrubland or partially agricultural land before project start.

## 3.4 Application of Methodology

### 3.4.1 Title and Reference

The methodology applied is the CDM A/R Large-scale Consolidated Methodology AR-ACM0003: Afforestation and reforestation of lands except wetlands v 02.0<sup>/B02/</sup> under the sectoral scope 14 of Agriculture, Forestry and other Land Uses (AFOLU).

Besides the methodological document, the following tools were applied<sup>/B03/</sup>:

- ✓ AR-AM002 – Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (Version 01.0).
- ✓ AR-Tool 03 – Calculation of the number of sample plots for measurements within

A/R CDM project activities (Version 2.1.0)

- ✓ AR-Tool 08 – Estimation of non-CO2 greenhouse gas (GHG) emissions resulting from burning of biomass attributable to an A/R CDM project activity (Version 4.0)
- ✓ AR- Tool 14 – Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/RCDM project activities (Version 4.2).
- ✓ AR-Tool 15 -Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity (Version 2.0).
- ✓ AR-Tool 16 – Estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities (Version 01.1.0).
- ✓ AR-Tool 19 -Demonstration of eligibility of lands for A/R CDM project activities (Version 2.0)
- ✓ NPR Tool – VCS AFOLU Non-Permanence Risk Tool (Version 4.0)
- ✓ AR-Tool 17-Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities

Based on the review of the VCS Joint PD & MR<sup>01/</sup> and other supporting evidence, VVB confirms the used methodology and tools is applicable to this project. VVB has also reviewed the supporting evidence for methodology applicability criteria<sup>B02/</sup>.

### 3.4.2 Applicability

the applicability condition. Provide a conclusion with respect to each applicability condition.

For methodology AR-ACM003 v2.0, VVB has assessed the applicability conditions which are as follows:

**Table XII: Applicability of methodology and VVB assessment**

Methodology ID	Applicability condition	Assessment and conclusion
AR – ACM0003	<p><b>Condition:</b></p> <p>The land subject to the project activity does not fall in the wetland category.</p> <p><b>Justification:</b></p> <p>Wetlands are defined as lands that are covered or saturated by water for all or part of the year (e.g., peatland) and that does not fall into the forest land, crop land, grass</p>	<p>As per the Ramsar wetland definition:</p> <p><i>“Wetlands are areas where water is the primary factor controlling the environment and the associated plant and animal life. They occur where the water table is at or near the surface of the land, or where the land is covered by water.”</i></p> <p>Based on review of VCS Joint PD &amp; MR<sup>01/</sup>, remote sensing GIS<sup>09/</sup>, Forest/non-forest analysis report<sup>t/10/</sup> and</p>

	<p>land or settlements categories<sup>14</sup>. In the section 1.14, LULC map have been provided for the Project area which concludes that project area does not fall under wetland category.</p>	<p>further during the on-site inspection<sup>/18/VI01/-/VI31/</sup>, VVB performed a GIS analysis of the KML files<sup>/09/</sup> where the intersection tool in QGIS was used to determine if the water bodies layer in the LULC classification shapefiles<sup>/09/10/</sup> intersects with the project plots.</p>
	<p><b>Condition:</b></p> <p>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:</p> <p>(a) Land containing organic soils</p> <p>(b) Land which, in the baseline, is subjected to land use and management practices and receives inputs listed in appendices 2 and 3 to this</p> <p><b>Justification</b></p> <p>As per implementation plan, dimensions of pits have been fixed at 0.3 x 0.3 m. Plantation density remained less than 500 plants per hectare throughout the project area. Activity results total 0.3 x 0.3 m x 300 (maximum density of plant per hectare) = m<sup>2</sup> soil disturbance per hectare. It concludes that total soil disturbance occurred due to project activity is 0.27%.</p>	<p>VVB based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup>, review of literatures<sup>/17/</sup>, SOPs<sup>/13/</sup> and through on-site inspection/interviews<sup>/VI01/-/VI31/</sup> confirms that the soil disturbance is not more than 10 % (0.27%). The pit size for plantation is kept as 0.3 x 0.3 m.</p> <p>Furthermore, as per Annex-A of IPCC GPG LULUCF 2003<sup>/B05/</sup>, soil is considered organic if it contains more than 20 percent (by weight) organic carbon. Based on the reviewing the source (Soil and Land Use Survey of India)<sup>/B05/</sup> and during on-site inspection/interviews<sup>/VI01/-/VI31/</sup> VVB confirms that the soils present in the project 1<sup>st</sup> instance area are laterite soil, alluvial soil, red soils, kachari soil and black soils which do not fall under the definition of organic soils as the organic content % is less than the aforementioned range. Hence, VVB ascertains those soils included in project area is not organic soils thus, is in line with the methodology requirements<sup>/B02/</sup></p>
	<p><b>Condition</b></p> <p>The project activity applying this methodology shall also comply with the applicability conditions of the</p>	<p>VVB based on the review of the PDMR<sup>/01/</sup> and supporting documentation<sup>/09/10/</sup></p>

<sup>14</sup> [https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4\\_Volume4/19R\\_V4\\_Ch07\\_Wetlands.pdf](https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch07_Wetlands.pdf)

	<p>tools contained within the methodology and applied by the project activity.</p> <p><b>Justification</b></p> <p>The project activity complies all the applicability condition of this methodology as well applied tool. .Refer to the table below</p>	<p>confirms that the project applies the multiple tools and applicability conditions of applied tools are appropriately demonstrated and assessed below by the VVB.</p>
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Tools	Applicability condition	Assessment and conclusion
<b>AR-CDM Tool 03</b>	<p><b>Condition</b></p> <p>This tool has no internal applicability conditions.</p> <p><b>Justification</b></p> <p>This tool has no internal applicability conditions.</p>	<p>VVB based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup> along with carbon calculation spreadsheets<sup>/02/</sup> confirms that the tool has been used for estimation of carbon stocks of bamboo.</p>
<b>AR TOOL 02:</b>  Combined tool to identify the baseline scenario and demonstrate additionality in ARR CDM project activities (Version 01)	<p><b>Condition:</b></p> <p>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.</p> <p><b>Justification:</b></p> <p>Condition met.</p> <p>The project activity is not violating any applicable regional or national law.</p>	<p>VVB based on the review of section 1.15 VCS PD &amp; MR<sup>/01/</sup> and applicable laws and regulations<sup>/19/</sup> confirms that the project activity does not violate any applicable law even if the law is not enforced. This is also assessed in section 3.1 of this report. Furthermore, VVB has also reviewed the evidence applicable laws and regulations<sup>/19/</sup> for the same.</p>
	<p><b>Condition:</b></p> <p>This tool is not applicable to small – scale afforestation and reforestation project activities</p> <p><b>Justification</b></p>	<p>VVB confirms that the first PAI only covers 834.33 ha. However as per the Joint VCS PD &amp; MR<sup>/01/</sup>, the project would include more project activity</p>

	<p>The project activities lead to a reduction and removal of 34,146 tCO<sub>2</sub>e, thus is not a small-scale AR activity, as per the CDM protocols</p>	<p>instances in future with scale upto 4500 ha (grouped), with expected annual estimation of more than 16000 tCO<sub>2</sub>e/year.. Thus, the project is not a small-scale project.</p>
<p><b>AR- Tool 08</b></p>	<p><b>Condition:</b></p> <p>The tool is applicable to all occurrence of fire within the project boundary.</p> <p>Non-CO<sub>2</sub> GHG emissions resulting from any occurrence of fire within the project boundary shall be accounted for each incidence of fire which affects an area greater than the minimum threshold area reported by the host Party for the purpose of defining forest, provided that the accumulated area affected by such fires in a given year is ≥5% of the project area.</p> <p><b>Justification</b></p> <p>As detailed in section 5.2, the farmers participating in the Project Activity and the First Project Activity Instance not using biomass burning or fire for site or land preparation.</p> <p>b) As mentioned in section 5.2 herein, the Project Activity and First Project Activity Instance is not:</p> <p>I. Using fire for site preparation</p>	<p>VVB based on the review of section 3.2 VCS PD &amp; MR<sup>01/</sup> confirms that the project activity does not lead to fire break in the area. Furthermore, VVB has also reviewed the evidence<sup>17/</sup> for the same.</p>

	<p>ii. Using fire to clear the land of harvest residue prior to replanting of the land</p> <p>iii. Subjected to fire risk, as detailed in Non-Permanence Risk Report</p>	
<b>AR-Tool 12</b>	<p><b>Condition</b></p> <p>This tool has no internal applicability conditions.</p> <p><b>Justification</b></p> <p>This tool has no internal applicability conditions</p>	VVB based on the review of the VCS Joint PD & MR <sup>/01/</sup> along with carbon calculation spreadsheets <sup>/02/</sup> confirms that the tool has been used for estimation of carbon stocks of bamboo.
<b>AR-Tool 14:</b>  Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities (Version 2.1).	<p><b>Condition</b></p> <p>This tool has no internal applicability conditions.</p> <p><b>Justification</b></p> <p>This tool has no internal applicability conditions.</p>	VVB based on the review of the VCS Joint PD & MR <sup>/01/</sup> along with carbon calculation spreadsheets <sup>/02/</sup> confirms that the tool has been used for estimation of carbon stocks of bamboo.
<b>AR-Tool 16:</b>  Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities (Version 01.1.0).	<p><b>Condition</b></p> <p>The areas of land to which this tool is applied:</p> <p>(i) Do not fall into wetland category; or</p> <p>(ii) Do not contain organic soils as defined in Annex A: glossary of the IPCC GPG LULUCF 2003;</p> <p>(iii) Are not subject to any of the land management practices and application of inputs as listed in Tables 1 and 2.</p> <p><b>Justification</b></p> <p>i) Project lands are not</p>	<p>i) As per the Ramsar wetland definition:</p> <p><i>“Wetlands are areas where water is the primary factor controlling the environment and the associated plant and animal life. They occur where the water table is at or near the surface of the land, or where the land is covered by water.”</i></p> <p>Based on review of VCS Joint PD &amp; MR<sup>/01/</sup>, remote sensing GIS<sup>/09/</sup>, KML files<sup>/09/</sup>, Forest/non-forest analysis report<sup>/10/</sup> and further during the on-site inspection<sup>/V101-V131/</sup>, VVB has observed that no wetland has been included in the project area. Furthermore, VVB has</p>

	<p>wetlands or peatlands.</p> <p>ii) The project area is characterized as degrading land. The type of soil in the project area are Alluvial, laterite, red, and peaty soil. Such lands under tropical conditions have less carbon compared to plantations and forest cover.</p> <p>iii) The lands of Table 1 refer to cropland in which soil disturbance is restricted. Project area does not classify as land listed in Table 1. The lands of Table 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 2.</p> <p>b)</p> <p>i) Litter is not removed.</p> <p>ii) Soil disturbances are limited to site preparation (digging of holes to plant seedlings). There is no soil disturbance after the project activity implementation.</p>	<p>verified this through Wetlands Portal of India, MoEFCC<sup>/B05/</sup>.</p> <p>Furthermore, remote sensing analysis has also been conducted to verify that the project areas under 1<sup>st</sup> PAI does not include any natural or artificial wetlands.</p> <p>ii) VVB based on the review of the VCS Joint PD &amp; MR<sup>/01/</sup>, review of literatures<sup>/VI01/-VI31/</sup> SOPs<sup>/13/</sup> and through on-site inspection/interviews<sup>/VI01/-VI31/</sup> confirms that the soil disturbance is not more than 10 % (0.27%) due to the site preparation. The pit size for plantation is kept as 30x30x30 cm<sup>3</sup>.</p> <p>Furthermore, during on-site inspection/interviews<sup>/VI01/-VI31/</sup> VVB has eye witnessed the soils present in the project 1<sup>st</sup> instance area. are which do not fall under the definition of organic soils. The same has been confirmed by reviewing the source (Soil and Land Use Survey of India)<sup>B05/</sup>. Hence, VVB ascertains those soils included in project area are not organic soils-</p> <p>VVB based on onsite inspections<sup>/VI01/-VI31/</sup> and on review of SOPs<sup>/13/</sup> and management plan<sup>/13/</sup> confirms that the litter is not removed from the project site.</p> <p>As per Annex A: glossary of the IPCC GPG LULUCF 2003, soil</p>
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		is considered organic if it contains more than 20 percent (by weight) organic carbon (about 35 percent organic matter). Hence, VVB confirms that the project soil is not organic and thus is in line with the methodology requirement <sup>/B02/</sup> .
<b>AR- TOOL 17</b>  Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities (Version 01.0.0)	This tool has no internal applicability conditions.	As per VVB assessment, PP has used this tool to demonstrate the appropriateness of an allometric equation for estimation of aboveground tree biomass in A/R CDM project activities.

### 3.4.3 Project Boundary

VVB through the review of VCS Joint PD & MR<sup>/01/</sup>, KML files<sup>/09/</sup> and on-site inspection<sup>/VI01-  
VI31/</sup> confirms that the grouped project activity is scattered across Karbi Anglong district of Assam. In the first PAI, 834.33 hectares of land was included involving several farmers across districts in Assam and <sup>/01/09/</sup>.

The source and sinks of gases included in the baseline and project scenario are as follows:

Source	Gas	Included?	Assessment and conclusion
Baseline	CO <sub>2</sub>	Yes	Based on the on-site inspection <sup>/VI01-VI31/</sup> , remote sensing & GIS <sup>/09/</sup> and Forest/non-forest analysis report <sup>/10/</sup> , VVB confirms that there were not any agricultural activities considered in the project area during the baseline scenario.
	CH <sub>4</sub>	No	Based on the on-site inspection <sup>/VI01-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected
	N <sub>2</sub> O	No	Based on the on-site inspection <sup>/VI01-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected
	Other	--	--

Source	Gas	Included?	Assessment and conclusion
	Below Ground Biomass	CO <sub>2</sub>	Yes Based on the on-site inspection <sup>/VI01/-VI31/</sup> , remote sensing & GIS <sup>/09/</sup> and Forest/non-forest analysis report <sup>/10/</sup> , VVB confirms that there were not any agricultural activities considered in the project area during the baseline scenario.
		CH <sub>4</sub>	No Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected.
		N <sub>2</sub> O	No Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected.
		Other	-- --
	Soil Organic Carbon	CO <sub>2</sub>	Yes Based on the on-site inspection <sup>/VI01/-VI31/</sup> , remote sensing & GIS <sup>/09/</sup> and Forest/non-forest analysis report <sup>/10/</sup> , VVB confirms that there were not any agricultural activities considered in the project area during the baseline scenario.
		CH <sub>4</sub>	No Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected.
		N <sub>2</sub> O	No Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected.
		Other	-- --
Project	Above Ground Biomass	CO <sub>2</sub>	Yes Based on the on-site inspection <sup>/VI01/-VI31/</sup> , remote sensing & GIS <sup>/09/</sup> and Forest/non-forest analysis report <sup>/10/</sup> , VVB confirms that AGB and BGB are the two major pools in which carbon dioxide is stored in the project scenario where plantation is done on the field.
		CH <sub>4</sub>	No Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected

Source	Gas	Included?	Assessment and conclusion	
	N <sub>2</sub> O	No	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected	
	Other	--	--	
	Below Ground Biomass	CO <sub>2</sub>	Yes	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , remote sensing & GIS <sup>/09/</sup> and Forest/non-forest analysis report <sup>/10/</sup> , VVB confirms that AGB and BGB are the two major pools in which carbon dioxide is stored in the project scenario where plantation is done on the field.
		CH <sub>4</sub>	No	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected
		N <sub>2</sub> O	No	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected
Other		--	--	
Soil Organic Carbon	CO <sub>2</sub>	Yes	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , confirms that Carbon stock in these pools will increase as a result of the ARR project activity.	
	CH <sub>4</sub>	No	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected	
	N <sub>2</sub> O	No	Based on the on-site inspection <sup>/VI01/-VI31/</sup> , VVB confirms that this carbon pool is conservatively neglected	
	Other	--	--	

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<sup>/B02/</sup>. Further in line with paragraph 10 of applied methodology, CO<sub>2</sub> emissions due to burning of woody biomass is accounted as change carbon stock, however in this project activity case no burning of woody biomass has been occurred during the

implementation of project activity, the same was confirmed during the onsite inspections and interviews.

### 3.4.4 Baseline Scenario

Based on the review of VCS Joint PD & MR<sup>/01/</sup>, VVB confirms that the project baseline scenario has been identified as per the CDM “Combined tool to identify the baselinescenario and demonstrate additionality in A/R CDM project activities” (Version 01)<sup>/B03/</sup>. Please refer to section 3.4.5 for the detailed assessment of identification of the most plausible baseline and demonstration of additionality.

PP has developed SOP<sup>/13/</sup> for eligibility requirements for land parcels to be part of the grouped activity which is as follows:

- ✓ No native forest for the past 10 years prior to the plantation date
- ✓ No wetland
- ✓ Land should be used either for cropping or should be barren, fallow.

Based on the review of VCS Joint PD & MR<sup>/01/</sup>, the evidence PRA<sup>/11/</sup>, NDVI analysis<sup>/10/</sup>, LULC assessment<sup>/10/</sup>, VVB confirms that the baseline scenario was appropriately identified as degrading shrublands lands due to various drivers. Some parts of baseline project areas are with the shrub cover, even though there is presence of shrubs, the project lands are considered as degrading in nature since there is a presence of invasive shrub species like *Lantana camara*. Therefore, based on the above assessment it concluded that the project lands are degrading even with presence of shrubs. Thus VVB confirms that the consideration of project lands as degrading is appropriate and deemed to be acceptable. However, the area under the first project activity instance includes no agricultural activities prior to project implementation. Furthermore, climatic conditions such as rising diurnal temperature fluctuations, unpredictable rainfall with higher volume leads to soil erosion leading to reduced fertility and soil degradation. Moreover, biological degradation with invasive species, confirm that due to all this drivers, ongoing shrubland degradation issues are identified in project area.

Further, following the steps presented in the “*Tool for the identification of degraded or degrading lands for consideration in implementing CDM A/R project activities*”, in its section. III PROCEDURE, sub clause (a) (i), has been represented by Figure 1a -Initial screening of lands (Stage 1) of Appendix 1; and, in accordance with the updates contained in section 3.4 Baseline Scenario (NDVI and PRA), in APPENDIX 2 (NDVI values for all rural properties in the project area) and in APPENDIX 3 (historical Google Earth images of some rural properties) of the PDMR, together with the information from the Participatory Rural Appraisal Report (PRA), the relevant information demonstrating that the area is “degraded” and/or in “process of degradation” is presented in line with the requirements.

*As per the section. III PROCEDURE (a) (i) of the Tool:*

(a) Provide documented evidence that the area has been classified as “degraded” under verifiable local, regional, national or international land classification system or peer-review study, participatory rural appraisal, satellite imagery and/or photographic evidence in the last 10 years. If the documented evidence of degradation is older than ten years then:

(i) Provide evidence that the natural or anthropogenic degradation drivers and pressures that led to the land becoming “degraded” are still present and/or that there are no insufficient land management interventions to reverse degradation.

In compliance with the above requirements, PP has provided verifiable participatory rural appraisal (PRA) assessments of the project to confirm the baseline (degrading shrubland) and the NDVI indices (section 3.4 of the PDD and Appendix 2), with the indices providing information from more than 10 years. Thus, VVB confirms that the project lands are considered as degrading shrublands, further same was observed during the onsite inspections. It has been evident that the natural or anthropogenic degradation factors and pressures that led to land degradation are still present and/or that there are insufficient land management interventions to reverse the degradation are provided in the PRA report. Thus, it is confirmed that the PP has appropriately followed the procedure and steps for the correct application of the “*Tool for the identification of degraded or degrading lands for consideration in implementing CDM A/R project activities*”, demonstrating, through the NDVI indices and the Participatory Rural Appraisal (PRA), both reported in section 3.4 of the PDMR, that the area can be classified as “degrading”.

In addition to above, VVB assessment on NDVI as follows: Prior to the project implementation, the vegetation cover observed within the project boundary of PAI 1 land parcel (Image attached in Annexure of the PDMR). Hence analysis was performed by using LULC classification, based on NDVI values, confirms that the area was predominantly covered by shrubland vegetation. This classification aligns with the NDVI thresholds established by the USGS<sup>15</sup> and is consistent with findings reported in regional scientific literature of Diphu District of Assam State<sup>16</sup>. Therefore, based on scientific evidence it is concluded that presence of shrub vegetation is present in the project area prior to project activities.

#### **Table 1. NDVI Classification Scheme**

PP has done a thorough NDVI classification analysis based on Landsat data (For 2009 and 2014) and Sentinel data (2019). And NDVI classification based on Sentinel and Landsat satellite data is important for accurate, consistent, and large-scale vegetation monitoring. Sentinel-2 and Landsat missions provide high-resolution, multi-spectral imagery that is particularly well-suited for NDVI calculations. Sentinel-2<sup>17</sup>, with its 10-meter spatial resolution enables precise temporal and spatial analysis of vegetation dynamics. However, Landsat<sup>18</sup>, with a longer historical with 30-meter resolution, offers invaluable long-term vegetation trend data. Therefore, combining both data enhances classification accuracy and allows to cross-validate results, providing a more robust

<sup>15</sup> [USGS - NDVI: The Foundation for Remote Sensing of Phenology](#)

<sup>16</sup> Bora, K., Borah, N., Bose, S., Goswami, J., & Kashyap, P. J. (2025). NDVI-Based Geospatial Analysis of Forest Cover Alterations in Daldali Reserve Forest, Assam, India. *Asian Journal of Geographical Research*, 8(1), 61-72.

<sup>17</sup> Zhu, Z., Wang, S., & Woodcock, C. E. (2019). Improvement and expansion of the Fmask algorithm: Cloud, cloud shadow, and snow detection for Landsats 4–7, 8, and Sentinel 2 images. *Remote Sensing of Environment*, 224, 129–148.

<sup>18</sup> Pettorelli, N., Vik, J. O., Mysterud, A., Gaillard, J. M., Tucker, C. J., & Stenseth, N. C. (2005). Using the satellite-derived NDVI to assess ecological responses to environmental change. *Trends in Ecology & Evolution*, 20(9), 503–510.

understanding of vegetation cover and change over time<sup>19</sup>. As a result of Landsat and Sentinel-2 (below table) NDVI values from 2009, 2014, and 2019 consistently indicate the presence of shrub and sparse vegetation.

**NDVI Value Range PAI 1 KML Karbi Anglong (Assam)**

Year	2009	2014	2019
NDVI Value	0.08-0.36	0.07-0.42	0.08-0.44

Furthermore, result of NDVI classification has been conducted in accordance with the thresholds outlined in Table 1 which demonstrate the NDVI values below 0.5 are considered indicative of sparse, degraded, or non-forest vegetation. This threshold is consistent with global NDVI classification with USGS and regional study classification as mentioned in above. Based on this classification, the PAI 1 land parcel does not demonstrate NDVI values characteristic of forested land. Instead, the data reveals a predominance of shrubland and bare soil over the years assessed. The NDVI-derived land cover patterns support the conclusion that, despite minor vegetation recovery over time, the area remains in shrub land and does not meet the NDVI criteria typically used to classify forest ecosystems.

VVB, overall based on the on-site inspection/interviews<sup>18/VI01-/VI31/</sup>, confirms this baseline scenario as justified for the 1<sup>st</sup> project activity instance and the same criteria will be followed for the future instances. All the relevant national or state policies are listed in the project. VVB based on the review of VCS Joint PD & MR<sup>01/</sup>, the evidence PRA<sup>11/</sup> LULC assessment<sup>10/</sup>, confirms that the baseline scenario have been correctly identified and would have occurred in the absence of the project.

**3.4.5 Additionality**

**Regulatory Surplus:**

VVB, based on the on-site inspection/interviews<sup>VI01-/VI31/</sup>, on review of all the relevant national or state policies in the host country<sup>19/</sup> 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”<sup>17/</sup>.

The identification of the most plausible baseline and demonstration of additionality has been demonstrated using the “Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (Version 1.0)”<sup>B03/</sup>.

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

Based on the review of the proof of start date<sup>07/</sup>, VVB confirms that the first plantation activity was considered from 09<sup>th</sup> July 2019, which is the start date for this grouped project and the

<sup>19</sup> Pettorelli, N., Vik, J. O., Mysterud, A., Gaillard, J. M., Tucker, C. J., & Stenseth, N. C. (2005). Using the satellite-derived NDVI to assess ecological responses to environmental change. *Trends in Ecology & Evolution*, 20(9), 503–510.

first PAI. It clearly demonstrates that the project activity was after 31<sup>st</sup> December 1999. The incentives from the planned sale of VCUs was considered by the farmer as evident from the contract<sup>/05/</sup> between the PP and participating farmers of 1<sup>st</sup> PAI. VVB through the on-site inspection interviews<sup>/VI01-VI31/</sup> and stakeholder consultation evidence<sup>/14/</sup> confirms that PP has done one to one consultation with farmers explaining the economic benefits arising from the project activity.

**STEP 1: Identification of alternative scenarios to the proposed A/R CDM project activity**

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

PP has identified the following alternative scenarios:

- Alternative Land Use Scenario A - Continuation of the pre-project land use  
 The project activity that involves multiple scattered small land parcels privately owned by farmers are most likely to continue with existing /historical land use is degrading land or degrading land under shrubland category.
- Alternative Land Use Scenario B- Afforestation of the land within Agroforestry system without being registered as the A/R CDM project activity.

VVB, through the on-site inspection<sup>/VI01-VI31/</sup>, PRA assessment<sup>/11/</sup> 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. PP has also considered the feedback taken from farmers for identification of alternative baseline scenarios.

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

VVB, based on review of the applicable laws and regulations<sup>/19/</sup> mentioned in the VCS Joint PD & MR<sup>/01/</sup>, confirms that the alternative land use scenarios identified are all in compliance with the laws and regulations since there are no laws regulations are preventing these alternative land use scenarios, evidence regarding the same has also been provided by PP<sup>/019/</sup>.

- The Indian Forest Act, 1927<sup>20</sup>
- The Wildlife (Protection) Act, 1972
- Water (Prevention and Control of Pollution) Act, 1974 with Rules<sup>21</sup>
- Forest (Conservation) Act, 1980<sup>22</sup>

<sup>20</sup> Rahate and Banait, “The Indian Forest Act, 1927.”

<sup>21</sup> [indiacode.nic.in/indiacode/bitstream/123456789/19018/1/water\\_act\\_1974.pdf](http://indiacode.nic.in/indiacode/bitstream/123456789/19018/1/water_act_1974.pdf)

<sup>22</sup> [Forest Conservation Act 1980 \(nbaindia.org\)](http://Forest Conservation Act 1980 (nbaindia.org))

- Environmental (Protection) Act, 1986<sup>23</sup>
- Convention on Biological Diversity, 1992<sup>24</sup>
- Noise Pollution (regulation and Control) Rules, 2000<sup>25</sup>
- Forest Right Act 2006<sup>26</sup>
- National Agroforestry Policy, 2014<sup>27</sup>

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**

Based on the review of the VCS Joint PD & MR<sup>01/</sup>, following barriers were identified that would prevent the implementation of at least one alternative land use scenarios:

- Barriers due to technological conditions
- Barriers due to Ecological conditions
- Barriers due to Social conditions

Based on the review of literatures<sup>/17/19/</sup>, VVB confirms the following:

- ✓ That the identified barriers are real and project specific.
- ✓ The barriers are prohibitive and would have led to elimination of project without carbon finance.
- ✓ These barriers are not specific to other baseline alternative/s, such as continuation of pre-project land-use scenario and thus would not have been impacted by these.

**Sub-step 2b- Elimination of land use scenarios that are prevented by the identified barriers**

**Table XIV: Identified alternative land use scenarios, barriers limiting the scenario and VVB assessment**

Alternative Land Use Scenario	Barriers Limiting the Scenario	VVB Assessment
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<sup>23</sup> <https://cpcb.nic.in/displaypdf.php?id=aG9tZS9lcGEvZXByb3RIY3RfYWN0ZxE5ODYucGRm>

<sup>24</sup> <https://www.cbd.int/doc/legal/cbd-en.pdf>

<sup>25</sup> <https://www.corpseed.com/knowledge-centre/the-noise-pollution-regulation-and-control-rules-2000>

<sup>26</sup> <https://forestrights.nic.in/doc/Act.pdf>

<sup>27</sup> [National Agroforestry Policy 2014.pdf \(agricoop.nic.in\)](https://www.natpol.in/AgroforestryPolicy2014.pdf)

<p>1) Continuation of the pre-project land use: agricultural land abandonment, land degradation, barren land</p>	<p>No barriers identified.</p>	<p>VVB based on-site inspection interviews<sup>/VI01/-VI31/</sup> host country expertise by the VVB and literature review<sup>/17/</sup> confirms that this is the only scenario that is not prevented by any of the barrier since there are no barriers to implement the agriculture practices in the host country and in fact the agriculture is more promoted.</p>
<p>2) Plantation activity, without being registered as the A/R CDM activity</p>	<ul style="list-style-type: none"> <li>○ <b>Barriers due to Technological Conditions</b></li> <li>○ <b>Barriers due to ecological conditions</b></li> <li>○ <b>Barriers due to social conditions</b></li> </ul>	<p><b>Barriers due to Technological Conditions</b>  VVB based on-site inspection interviews<sup>/VI01/-VI31/</sup> host country expertise by the VVB and literature review<sup>/17/</sup> confirms the following:  The study "Agroforestry systems: Opportunities and challenges in India" identifies several technological barriers faced by locals, particularly in regions like Karbi Anglong. One significant barrier is the shortage of superior planting material, which limits productivity. Insufficient research and development in agroforestry technologies also hinder innovation and best practices. Additionally, the lack of market infrastructure, including processing, storage, and transportation facilities, makes it difficult for farmers to sell their products. Cumbersome legislation related to tree felling and wood transportation further discourages adoption. In Karbi Anglong, these challenges are compounded by the region's unique ecological conditions and the dependency of local communities on</p>

natural resources<sup>28</sup>. Addressing these barriers through improved research, better market infrastructure, and supportive policies is essential for promoting agroforestry in Karbi Anglong and similar regions.

**Barriers due to ecological conditions**

The study "Assessing the changes in climate extremes over Karbi Anglong district of Assam, North-East India"<sup>29</sup> highlights several ecological challenges faced by the region due to changing climate extremes. One significant challenge is the increased frequency of warm days and nights, which can stress local ecosystems and biodiversity. Additionally, the district has experienced long dry spells, leading to drought conditions that affect water availability for agriculture and drinking purposes. Extreme precipitation events have also become more common, causing flooding, soil erosion, and landslides, which disrupt local habitats and human settlements. These changes in precipitation patterns and increased temperatures impact water resources, reducing their availability and affecting agricultural productivity and the livelihoods of local communities. Furthermore, significant changes in land use and land cover contribute to regional climatic changes, exacerbating the effects of climate

<sup>28</sup> [Microsoft Word - 28-AJ2194](#)

<sup>29</sup> [Assessing the changes in climate extremes over Karbi Anglong district of Assam, North-East India | Spatial Information Research](#)

extremes. These ecological challenges underscore the need for adaptive management strategies to mitigate the impacts of climate change on the environment and local communities in Karbi Anglong.

Overall based on the above assessment, VVB confirms that the scenario.2 is prevented by both identified barriers.

### **Barriers due to social conditions**

The social conditions in Assam, particularly in Karbi Anglong, present significant challenges for sustainable land management and agroforestry adoption. The rising population has led to land fragmentation, resulting in smaller landholdings. Over 80% of rural households are now landless or marginal farmers, with an average operational holding of just 1.10 hectares<sup>30</sup>. This fragmentation hinders efficient resource utilization and technology adoption, impacting economic productivity and diversification. High population density and competing land uses create demographic pressure on land, complicating the implementation of agroforestry projects.<sup>31</sup> Additionally, the lack of carbon finance to cover costs and offer financial incentives further discourages these projects. The transition from traditional farming to climate-smart agriculture is also impeded by a lack of knowledge about

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<sup>30</sup> [Microsoft Word - 28-AJ2194](#)

<sup>31</sup> [Remote-Sensing-and-GIS-for-Mapping-A-Study-of-Karbi-Anglong-District.pdf](#)

		<p>adaptive practices and the non-availability of skilled labor<sup>32</sup>. Cumbersome legislation related to tree felling and wood transportation adds to the challenges, making it difficult for farmers to adopt agroforestry practices<sup>33</sup>. Addressing these barriers through improved research, better market infrastructure, supportive policies, and financial incentives is essential for promoting sustainable agricultural practices and enhancing farmers' livelihoods in Karbi Anglong and similar regions<sup>34</sup>.</p>
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**Outcome of Sub-step 2b:** VVB based on the above assessment confirms that the identified barriers are real and prohibitive and can prevent the implementation of the project activity. This was further confirmed through the on-site inspection and interviews<sup>V101/-V131/</sup> and confirms that only scenario 1. i.e. continuation of the pre project land use is not prevented by any barrier. Further, VVB confirms that bamboo plantation requires lot of technical skills for plantation. The market is not available for the processed products of bamboo. It requires a significant amount of investment for plantation. The identified barriers are relevant to the alternative scenario.

**Sub-step 2c- Determination of baseline scenario**

The assessment of Sub-step 2b confirms that Scenario 1, which involves the continuation of pre-project land use, faces no barriers and is thus identified as the baseline scenario for the proposed project activity. VVB has also assessed the determined baseline scenario during the on-site inspection and interviews<sup>V101/-V131/</sup>. VVB has also reviewed the PRA survey report<sup>t/11/</sup> provided by PP.

According to 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?

<sup>32</sup> [Camera trap based monitoring of a key wildlife corridor reveals opportunities and challenges for large mammal conservation in Assam, India | Tropical Ecology](#)

<sup>33</sup> [Assessing the changes in climate extremes over Karbi Anglong district of Assam, North-East India | Spatial Information Research](#)

<sup>34</sup> [15537.pdf](#)

: 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.

Thus, based on the above decision tree, Scenario 1—continuation of the pre-project land use—is considered the baseline scenario for the project, in accordance with the requirements of the applied tool. Additionally, 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**

This step is not opted by the PP in line with the AR tool-02 requirements. After conducting barrier analysis, the list contains only one land use scenario that is not prevented by any barrier which is determined as the baseline of the project under para 18 of the tool. This makes the investment analysis not necessary, proceeding with step 4.

### **STEP 4: Common practice analysis**

Based on the review of VCS Joint PD & MR<sup>01/</sup> and on the review of provided web references, VVB confirms that PP has demonstrated that project is not a common practice in project area.

Based on latest state data from forest survey of India for state of assam<sup>35</sup>, data 10 years prior to project start date<sup>36</sup>, PP has demonstrated that there is positive trend in forest cover but rate of increase is very low.

PP has identified national level programs such as National Agroforestry Policy (NAP), which supports agroforestry development across country. PP has also identified the social forestry programs which also promote plantation initiatives. While both the NAP and the project promote agroforestry practices, the project's approach is differentiated by its explicit

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<sup>35</sup> <https://fsi.nic.in/forest-report-2023>

<sup>36</sup> [india\\_sfr\\_2009.pdf](#)

alignment with carbon credit generation and inclusion of single native species. The project emphasizes ecological suitability and climate resilience, while NAP focuses more on long-term sustainability without a direct economic mechanism like carbon finance.

Further, VVB upon the review of VCS Joint PD & MR<sup>01/</sup> and on the review of provided web reference for Assam [Plantation provisions under National Bamboo Mission | State Bamboo Development Agency, Assam | Government Of Assam, India](#), VVB observes that there are bamboo plantation activities in the state through the schemes “Assam State Bamboo development agency”, the essential differences between this activities and current VCS project activity instance as demonstrated as follows:

<b>Assam State Bamboo development agency<sup>37</sup>Bamboo and Cane policy</b>	<b>Proposed VCS 3570 project activity</b>
Govt incentives include: 100% of cost to Govt. sector and <b>for non govt lands</b> 50% of the cost up to 2 ha, 30% of the cost for 2 - 4 ha (up to 10000 plants) over 3 years. <b>For plantation above 4 ha no subsidy will be provided.</b>	Project plantation activities are whole solely funded by the project proponent without considering any farm area limitation as compared to the govt schemes in the region.
Main aim of this activities is timber production and post-harvest uses.	Project activities are focusing on the maintenance and sequestration of high carbon stock for entire project longevity of 40 years. Also, focusing on community livelihood improvement.
No sustained revenues like VCS VCUs.	Project will generate sustained revenues through the VCUs. Further project activities are focusing to large scale implementation up to 4500ha.
Implemented in support with forest department.	Project activities implemented through the NGOs (HLTEC) and farmers.

Assam has multiple bamboo and agroforestry initiatives such as the Assam Bamboo & Cane Policy (2019), National Bamboo Mission, and SBDA-supported programs<sup>38</sup>. These efforts have faced systemic limitations. These include restricted geographic coverage, inadequate post-plantation support, and lack of integration with carbon finance mechanisms.<sup>39</sup> Current project, by contrast, introduces a large-scale, carbon-financed agroforestry model using *Bambusa tulda* at 250 clumps/ha, which is not commonly practiced in the region based on available data. This supports the claim that the activity is not common practice under VCS guidelines.

Based on the review of VCS Joint PD & MR<sup>01/</sup>, VVB confirms that the project activities are much different compared to the plantation activities carried out by the govt in the state and demonstrated that the project activities are uncommon and not possible to implement without

<sup>37</sup> [Home | State Bamboo Development Agency, Assam | Government Of Assam, India](#)

<sup>38</sup> [Assam Agroforestry Development Board](#)

<sup>39</sup> [Project ReportTemplate](#)

the VCS revenues. Therefore, VVB confirms that the proposed A/R VCS project is not the baseline scenario and implementation of VCS project activity is considered as additional.

VVB confirms that the additionality has been defined in compliance with the tool applied<sup>/B03/</sup> and VVB has cross checked the evidence produced by PP to demonstrate the baseline scenario. The justification of additionality provided is valid and satisfactory to VVB.

Overall, VVB concludes that the baseline scenario and additionality of the proposed project is appropriately justified and in accordance with the requirements of the applied methodology 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

The quantification of GHG removals generated by the project during the crediting period was carried out in accordance with the applicable methodology. “AR-ACM0003: Afforestation and reforestation of lands except wetlands”, Version 02.0<sup>/B02/</sup>. 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 tools, and the VCS Joint PD & MR<sup>/01/</sup>.

#### Baseline emissions:

The net anthropogenic GHG removals by sinks under the baseline scenario has been calculated as follows:

$$\Delta C_{BSL,t} = \Delta C_{TREE\_BSL,t} + \Delta C_{SHRUB\_BSL,t} + \Delta C_{DW\_BSL,t} + \Delta C_{LI\_BSL,t}$$

Where:

$C_{BSL,t}$  = Baseline net GHG removals by sinks in year t; t CO<sub>2</sub>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<sub>2</sub>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<sub>2</sub>e

$C_{LI\_BSL,t}$   $C_{DW\_BSL,t}$  = 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<sub>2</sub>e

VVB confirms that the baseline estimated in compliance with the conditions mentioned in the paragraph 11 of the AR tool 14 v04.2 which are mentioned as following:

a) The VVB confirms that the land involved in the first project instance was previously barren, with no pre-existing trees that could be harvested or cleared. This was verified during the on-site inspection<sup>/VI01-VI31/</sup>, as well as through the project SOPs<sup>/13/</sup> and management plan<sup>/13/</sup>. Additionally, remote sensing imagery analysis provided by the Project Proponent (PP) supports this finding.

b) As there were no pre-existing trees on the project site, there is no tree mortality resulting from competition with newly planted trees. This condition is therefore fulfilled and has been verified through the project SOPs and management plan<sup>/13/</sup>.

The above criteria were further validated by the VVB through remote sensing analysis<sup>/09/10/</sup> of the pre-project scenario, confirming the absence of pre-existing trees in the area of the first project activity instance. The trees present in the project area were neither large nor fully matured, they have been classified as shrubs and accordingly included under the shrub category.. The project involves bamboo (B. tulda) plantations, hence presence of non project trees can be easily identified. The project meets the conditions sets in section 5 of the AR-TOOL 14. Pre-project scenario analysis has done by using Sentinel 2B satellite image for the year 2019, 2020, 2021 and 2022, the area was stratified in the shrub class as per the Forest Survey of India and LULC map for the same has been provided in section 1.14 of VCS PDMR. The baseline emission calculation has already been done as per the canopy cover by shrubland. Accordingly, the VVB confirms that all conditions outlined in paragraph 11 have been met.

According to VCS Joint PD & MR<sup>/01/</sup>, the carbon pools for soil organic carbon, litter, and deadwood are excluded from the project and considered zero in the baseline scenario. However, there is baseline shrub vegetation found in the project areas (shrub crown cover of greater than 5 per cent), thus in line with the paragraph 61 of the AR tool-14 the same was verified by the VVB through the KML files of shrub cover<sup>/10/11/</sup> and ER sheets<sup>/02/</sup> therefore the baseline carbon stock in shrubs is estimated appropriately as follows:

$$C_{SHRUB,t} = \frac{44}{12} \times CF_s \times (1 + R_s) \times \sum_i A_{SHRUB,i} \times b_{SHRUB,i}$$

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

Where;

$\Delta C_{SHRUB,t}$  = Change in carbon stock in shrubs within project boundary in year t between times  $t_1$  and  $t_2$ ; t CO<sub>2</sub>e

$C_{SHRUB,t1}$  = Carbon stock in shrubs within project boundary at time  $t_1$ ; t CO<sub>2</sub>e

$C_{SHRUB,t2}$  = Carbon stock in shrubs within project boundary at time  $t_2$ ; t CO<sub>2</sub>e

T= Time elapsed between two successive estimations; yr

$C_{SHRUB,t}$ = Carbon stock in shrubs within project at given point of time in year t; t CO<sub>2</sub>e

$CF_S$  = Carbon fraction of shrub biomass: t C (t. d.m.)<sup>-1</sup>

RS = Root-shoot ratio for the shrubs in the baseline; dimensionless

$b_{SHRUB,i}$ = Shrub biomass per ha in shrub biomass estimation stratum i; t d.m. ha<sup>-1</sup>

$A_{SHRUB,i}$ = Area of shrub biomass estimation stratum i; ha

$BDR_{SF}$  = Ratio of shrub biomass per ha in land having a shrub crown cover of 1.0 & the default above-ground biomass content per ha in forest in the region/country; dimensionless.

$b_{FOREST}$  = Default above-ground biomass content in forest in region/ country; t d.m. ha<sup>-1</sup>

$CC_{SHRUB,i}$ = Crown cover of shrubs in shrub biomass estimation stratum i at the time of estimation, expressed as a fraction

$$\Delta C_{DW\_BSL,t} = 0, \text{ and } \Delta C_{LI\_BSL,t} = 0 ;$$

### Project emissions

The actual net GHG removals by sinks is calculated as follows:

$$\Delta C_{ACTUAL,t} = \Delta C_{P,t} - GHG_{E,t}$$

Where:

$\Delta C_{ACTUAL,t}$  = Annual actual net GHG removals by sinks at time t; t CO<sub>2</sub>-e yr<sup>-1</sup>

$\Delta C_{P,t}$  = Change in carbon stocks in project, occurring in the selected carbon pools, at time t; t CO<sub>2</sub>eyr<sup>-1</sup>

$GHG_{E,t}$  = Increase of non-CO<sub>2</sub> GHG emissions within the project boundary as a result of the implementation of the A/R project activity, in year t; t CO<sub>2</sub>e

As per the tool non-CO<sub>2</sub> GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity (v04.0) the GHG emission for non-CO<sub>2</sub> gases is kept as zero as there was no use of fire for site preparation or biomass burning.

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

$$\Delta C_{p,t} = \Delta C_{TREE\_PROJ,t} + \Delta C_{SHRUB\_PROJ,t} + \Delta C_{DW\_PROJ,t} + \Delta C_{LI\_PROJ,t} + \Delta SOC_{AL,t}$$

Where:

$\Delta C_{TREE\_PROJ,t}$  = 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<sub>2</sub>-e

$\Delta C_{\text{SHRUB PROJ},t}$  = 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<sub>2-e</sub>

$\Delta C_{\text{DW PROJ},t}$  = 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<sub>2-e</sub>

$\Delta C_{\text{LI PROJ},t}$  = 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<sub>2-e</sub>

$\Delta \text{SOC}_{\text{AL},t}$  = 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<sub>2-e</sub>

*VVB during the on-site inspection<sup>/VI01/-VI31/</sup> and on verification of KML files of shrub cover<sup>/09/10/</sup> confirms that there are shrubs found for baseline measurements. Based on forest-non forest analysis<sup>/10/</sup>, VVB confirms that Pre-project scenario analysis has done by using Sentinel 2B satellite image for the year 2019, 2020, 2021 and 2022, the area was stratified in the shrub class as per the Forest Survey of India and LULC map, furthermore same was verified by forest-non forest analysis<sup>/10/</sup>. Hence VVB confirms that the baseline carbon stock in shrub biomass are appropriately accounted as demonstrated above, whereas deadwood and litter biomass is considered insignificant and therefore accounted as zero in line with the para 14 requirements of applied methodology AR-ACM0003.*

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

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

Where,

$\Delta C_{\text{TREE}}$  = Change in carbon stock in trees during the period between two points of time t<sub>1</sub> and t<sub>2</sub>; t CO<sub>2e</sub>

$C_{\text{TREE},t1}$  = Carbon stock in trees as estimated at time t<sub>1</sub>; t CO<sub>2e</sub>

$C_{\text{TREE},t2}$  = Carbon stock in trees as estimated at time t<sub>2</sub>; t CO<sub>2e</sub>

The carbon stock estimation uses the following equation:

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

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

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

$C_{TREE}$	=	Carbon stock in trees in the tree biomass estimation strata; t CO <sub>2</sub> e
$CF_{TREE}$	=	Carbon fraction of tree biomass; t C (t d.m.) <sup>-1</sup> .  A default value of 0.47 is used unless transparent and verifiable information can be provided to justify a different value.
$B_{TREE}$	=	Tree biomass in the tree biomass estimation strata; t d.m.
$A$	=	Sum of areas of the tree biomass estimation strata; ha
$b_{TREE}$	=	Mean tree biomass per hectare in the tree biomass estimation strata; t d.m. ha <sup>-1</sup>
$w_i$	=	Ratio of the area of stratum i to the sum of areas of tree biomass estimation strata (i.e. $w_i = A_i/A$ ); dimensionless
$b_{TREE,i}$	=	Mean tree biomass per hectare in stratum i; t d.m. ha <sup>-1</sup>

For Calculating AGB of the tree following equation where is used. VVB reviewed allometric equation. The equation is sourced from “*Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019. Allometric equations for estimating the aboveground biomass of a 14-Year-old bamboo plantation at moeswe research station, Myanmar*”<sup>17/</sup>. This equation has been cited in other research works focusing on biomass estimation for *Bambusa tulda* and similar bamboo species. VVB based on the review of study “*Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019*”, confirms that this equation application is meeting the requirements of ARTool17 &14. As per CDM Tool-17, Paragraph 6, a species-specific allometric equation is valid for ex-post biomass estimation if certain following conditions are met:

*“A species-specific or group-of-species-specific allometric equation derived from trees growing in edapho-climatic conditions similar to those in the project area is considered appropriate, and hence can be used for ex post estimation of tree biomass, if at least one of the following conditions is satisfied:*

(a) The equation is used in the national forest inventory, or the national GHG inventory, of the host Party;

(b) The equation has been used in commercial forestry sector of the host Party for ten years or more;

(c) The equation was derived from a data set of at least 30 sample trees, and the value of coefficient of determination (R<sup>2</sup>) obtained was not less than 0.8”

Meeting the above conditions, given the similar edaphic-climatic conditions between the project region and Myanmar (<https://www.worlddata.info/climate-comparison.php?r1=burma&r2=in-north-eastern>), and the fact that the equation was developed using over 30 culms with an R<sup>2</sup> value of 0.975 (well above the 0.85 threshold), which is satisfying the paragraph.6 condition (c) of the AR TOOL-17 requirements. Therefore, the equation applied is deemed to be appropriate and applicable for estimating aboveground biomass in the project activity. Hence VVB confirms that this equation application is valid and appropriate. To validate the applicability and conservativeness of the selected allometric equation from Myanmar (Puangchit et al., 2019), a sensitivity analysis was conducted using a representative equation from central India, referenced in a 2023 review by the Forest Research Institute, Dehradun (Devi et al., 2023)<sup>40</sup>. The Myanmar equation consistently produced lower aboveground biomass (AGB) estimates by approximately 10–13% across various DBH classes, indicating a conservative approach. This conservative bias is further justified by the ecological proximity between Myanmar and Karbi Anglong, Assam, both of which share similar climatic, edaphic, and topographical conditions as part of the Indo-Burma biodiversity hotspot<sup>41</sup>. In contrast, equations developed for central Indian bamboo species are based on agro-climatic zones that differ significantly from the project area. In the absence of local destructive sampling, the Myanmar equation thus represents a regionally appropriate and methodologically conservative choice under AR Tool 17.

Therefore, the equation applied is deemed to be appropriate and applicable for estimating aboveground biomass in the project activity. Hence VVB confirms that this equation application is valid and appropriate.

$$Bambusa Tulda^{42}=Y=0.307*DBH^2.174$$

**Estimation in the changes of carbon stock in shrub biomass:**

<sup>40</sup> [EEC-63.pmd](#)

<sup>41</sup> [indo-burma ecosystem profile 2020 technical summary.pdf](#)

<sup>42</sup> Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019. Allometric equations for estimating the aboveground biomass of a 14-Year-old bamboo plantation at moeswe research station, Myanmar. *Journal of Tropical Forest Research*, 3(1), pp.1-19.

VVB based on the review of the ER sheets<sup>/02/</sup> and PDMR<sup>/01/</sup> confirms that the change in carbon stock in shrub biomass in project in year t is estimated based on the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”, AR-TOOL14. The project activity does not involve shrub plantation; hence, the biomass or any changes in the biomass of shrubs are assumed to be zero. During the onsite inspection, the VVB confirmed the absence of shrub plantation; therefore, the value of zero is valid and acceptable.

**Estimation in the changes of carbon stock in deadwood and litter biomass:**

VVB based on the review of the ER sheets<sup>/02/</sup> and PDMR<sup>/01/</sup>, the VVB confirms that changes in carbon stock in dead wood and litter have been excluded from the carbon calculations as a conservative approach to estimate removals. Accordingly, a value of zero has been applied, which is deemed acceptable by the VVB.

**Estimation of the changes in carbon stocks in soil organic carbon (SOC):**

VVB based on the review of the ER sheets<sup>/02/</sup> and PDMR<sup>/01/</sup> confirms that the estimations of soil organic carbon (SOC) stocks were done accordance to the “Tool for the change in soil organic carbon stocks due to the implementation of A/R CDM project activity”. SOC at the start of the project (SOC<sub>INITIAL,i</sub>) is appropriately estimated by multiplying the reference SOC with factors from the AR tool06<sup>/B02/</sup>.

**Leakage**

As per the VCS PDMR<sup>/01/</sup>, the calculations for leakage are determined through Tool AR0015: Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity.

$$LK_t = LK_{AGRIC,t} \tag{Equation 4}$$

Where:

**LK<sub>t</sub>**= GHG emissions due to leakage, in year t; t CO<sub>2</sub>-e

**LK<sub>AGRIC,t</sub>** = Leakage due to the displacement of agricultural activities in year t; t CO<sub>2</sub>e

As calculated in the tool “Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity”

VVB based on the on-site inspection<sup>/VI01/-VI31/</sup> and through the baseline PRA<sup>/14/</sup> confirms that no displacement of agricultural production from within the project boundary occurs as a result of the project activities, leakage emissions are considered to be zero for the life of the project.

VVB after reviewing the VCS PDMR<sup>/01/</sup> and through on-site inspection<sup>/VI01/-VI31/</sup> confirms that there are no leakage activities due to project implementation.

**Net GHG removals**

As per the VCS PDMR<sup>/01/</sup> and ER calculations<sup>/02/</sup>, the net anthropogenic GHG removals by sinks are calculated as follows:

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

(Equation 7)

where:

$C_{AR-CDM,t}$  = Net anthropogenic GHG removals by sinks, in year t; t CO<sub>2</sub>-e

$C_{ACTUAL,t}$  = Actual net GHG removals by sinks, in year t; t CO<sub>2</sub>-e

$C_{BSL,t}$  = Baseline net GHG removals by sinks, in year t; t CO<sub>2</sub>-e

LKt = GHG emissions due to leakage, in year t; t CO<sub>2</sub>-e

Since baseline removals and emissions due to leaks were considered zero, net anthropogenic removals are expressed according to the formula:

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

Project proponent applied a NPRT buffer of 20% to cover the aspects related to the risk of non-permanence. The complete non-permanence risk analysis can be referred from the non-permanence risk report.

**Calculation of long - term average (LTA)**

As the project includes harvesting of trees, the loss of carbon shall be included as per the standard requirements. The LTA was calculated in the VCS PDMR<sup>/01/</sup> with the use of standard v4.7 and AFOLU guidance tool as following:

$$LA = \frac{\sum_{t=0}^n PE_t - BE_t}{n}$$

Where:

LA= The long-term average GHG benefit

Pet= The total to-date GHG emission reduction & removals generated in the project scenario (t CO<sub>2</sub>e). Project scenario emission reductions and removals shall also consider project emissions of CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub> and leakage.

Bet= The total to-date GHG emission reductions and removals projected for the baseline scenario (tCO<sub>2</sub>e). Accounted

t= Year

n= Total number of years in the established time-period

The Long-term average value for entire project area calculated for each stratum for 30 years capped to 288,276 tCO<sub>2</sub>e based on ex-ante calculations and based on ex-post monitored data the LTA cap is calculated as 562,816 tCO<sub>2</sub>e.

Based on the review of Management plan<sup>/13/</sup>, Further, to ensure carbon permanence, PP has demonstrated the benefits of Bambusa tulda, including timber production and highlighted the financial potential of non-timber forest products from these species to the stakeholders which support long-term VCU sustainability. The farmer carbon agreements are signed to maintain carbon stock for the length of the project longevity (40 years). The farmer agreements<sup>/05/</sup> were checked to confirm the same.

VVB confirms that the applied methodology<sup>/B02/</sup> and the referenced tools<sup>/B03/</sup> have been applied correctly to calculate baseline emissions and net GHG removals of the project during the crediting period.

The LTA cap reaches at the year 2026 (6<sup>th</sup> year from the start date) for the project activity. VVB, based on the ex-ante ERR calculation spreadsheet, confirms that the LTA has been calculated in compliance with the section 3.2.25(1a) of the VCS standard v4.7 and the VCS Guidance Harvesting Examples document. Furthermore, based on monitored values, LTA value is recalculated. Based on projected values, LTA is expected to be reached at 15<sup>th</sup> year from project start date.

VVB confirms that the LTA has been calculated based on the harvesting cycle of each stratum as the stratification has been done on the basis of year of plantation. VVB confirms that the LTA has been calculated for the project length of 30 years which is same as the crediting period. VVB confirms that the applied methodology<sup>/B02/</sup> and the referenced tools<sup>/B03/</sup> have been applied correctly to calculate baseline emissions and net GHG removals of the project during the crediting period.

### 3.4.7 Methodology Deviations

Based on the review of the VCS Joint PD & MR<sup>/01/</sup> and carbon calculation sheet<sup>/02/</sup> VVB confirms that there are no deviations to the applied methodology AR-ACM0003.

### 3.4.8 Monitoring Plan

Based on the review of the VCS Joint PD & MR<sup>/01/</sup> the data & parameters available during the validation are as mentioned below:

The monitoring plan has been defined against the requirements of section 6.1 and 6.2 of Methodology AR-ACM0003 (version 2.0). VVB has assessed all parameters (fixed and to be monitored) from VCS PD MR<sup>/02/</sup>.

1. Verification of the applicability conditions listed under section 3 has been met;
2. Verification of changes in carbon stocks in the pools selected;

3. Verification of project GHG removal and leakage GHG removal.

The methods for calculating biomass consist of multiple unit measurements that follow allometric calculations. Major eligible carbon pools are Above Ground Biomass (AGB) and Below Ground Biomass (BGB).

**Table XVI: Data/Parameters available during validation.**

Data/Parameter	Value Applied	VVB Assessment <sup>B05/</sup>
Location of project area- Latitude and longitude	GPS co-ordinates	VVB based on the review of project kml file <sup>/09/</sup> confirms that the project located the district of Karbi Anglong, Assam, India.
Total area of project	834.33 ha	VVB confirms the value applied as valid after reviewing the raw data sheet <sup>/04/</sup> and KML files <sup>/09/</sup> for first PAI.
DBH	6.46 cm	VVB based on review of provided reference “Carbon sequestration through bamboo plantation.pdf (egranth.ac.in)” confirms that DBH value considered for ex-ante calculations is valid and appropriate.
Allometric Equation	<i>Bambusa Tulda</i> <sup>43</sup> = $Y=0.307*DBH^2.174$	As assessed in the above sections, VVB based on the review of literature of Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019. Allometric equations for estimating the aboveground biomass of a 14-Year-old bamboo plantation at moeswe research station, Myanmar. Journal of Tropical Forest Research, 3(1), pp.1-19 <sup>/17/</sup> confirms that PP has appropriately adopted the species specific allometric equations from the same host country studies to calculate the

<sup>43</sup> Allometric equations for estimating the aboveground biomass of a 14-year-old bamboo plantation at Moeswe Research Station, Myanmar

		AGB and the same is found to be conservative.										
Carbon fraction; $C_F$	0.47	VVB after cross checking the mentioned source “ IPCC Good Practice Guidance for LULUCF, 2003 Equation 3.2.3” <sup>177</sup> confirms the value applied is valid.										
Root to shoot ratio; $R_j$	0.25	VVB after cross checking the mentioned source “ IPCC Good Practice Guidance for LULUCF <sup>177</sup> , 2003 Table 3A.1.8” confirms the default value applied is valid and appropriate.										
$CO_{2-e}$	44/12 (3.67)	VVB confirms the IPCC default <sup>177</sup> value used is valid and appropriate.										
SOC	0.8 t/ha/yr	VVB based on the review SOC AR tool-16 <sup>B02/</sup> , confirms that the PP has applied appropriate default values in compliance with referred tool.										
Project Clump	208,582	VVB based on plantation density and total project area, confirms that value taken for project clump is valid and appropriate.										
$W_i$	<table border="1"> <thead> <tr> <th>Stratum Name</th> <th><math>W_i</math></th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>0.65</td> </tr> <tr> <td>2020 B.tulda</td> <td>0.27</td> </tr> <tr> <td>2021 B.tulda</td> <td>0.07</td> </tr> <tr> <td>2022 B.tulda</td> <td>0.01</td> </tr> </tbody> </table>	Stratum Name	$W_i$	2019 B.tulda	0.65	2020 B.tulda	0.27	2021 B.tulda	0.07	2022 B.tulda	0.01	Based on the review of the ex-post carbon calculation sheet <sup>102/</sup> , VVB confirms that the relative weight of the area of stratum calculated is valid.
Stratum Name	$W_i$											
2019 B.tulda	0.65											
2020 B.tulda	0.27											
2021 B.tulda	0.07											
2022 B.tulda	0.01											

Permanent sample plot (PSP)	40			VVB based on the review of the sample plot calculation sheet <sup>/02/</sup> , confirms that the actual sample plot size arrived is 40. PP has selected 43 plots for conservative estimations. VVB during the on-site inspection <sup>/VI01/-VI31/</sup> has visited selected 5 PSPs from 43 PSPs and confirm the location and other parameters.
	<b>Stratum Name</b>	<b>As per PSP calculator</b>	<b>PSPs taken</b>	
	2019 B. tulda	29	30	
	2020 B. tulda	9	10	
	2021 B. tulda	1	2	
	2022 B. tulda	0	1	

Table 13: Data and parameters to be monitored (As per VCS PDMR<sup>/01/</sup>):

Data/Parameters fixed	Value Applied	VVB Assessment				
DBH	Refer to ex-post carbon calculation spreadsheet <sup>/02/</sup>	VVB confirms the value applied is valid after reviewing the raw data sheets <sup>/04/</sup> . VVB during the on-site inspection <sup>/VI01/-VI31/</sup> also verifies the DBH measurement through measuring diameter at DBH and cross checking it against the raw data sheets.				
Ai	Project Stratification for first Project Activity instance is based on the year of plantation. Strata wise total area for the first Project Activity instance using GIS is given in below table: <table border="1"> <thead> <tr> <th>Stratum Name</th> <th>Area (Ha.)</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>540.48</td> </tr> </tbody> </table>	Stratum Name	Area (Ha.)	2019 B.tulda	540.48	VVB confirms the values applied as valid after reviewing the raw data sheet <sup>/04/</sup> and KML files <sup>/09/</sup> for first PAI.
Stratum Name	Area (Ha.)					
2019 B.tulda	540.48					

	<table border="1"> <tbody> <tr> <td>2020 B.tulda</td> <td>223.17</td> </tr> <tr> <td>2021 B.tulda</td> <td>59.95</td> </tr> <tr> <td>2022 B.tulda</td> <td>10.73</td> </tr> </tbody> </table>	2020 B.tulda	223.17	2021 B.tulda	59.95	2022 B.tulda	10.73										
2020 B.tulda	223.17																
2021 B.tulda	59.95																
2022 B.tulda	10.73																
Standard Deviation; t d.m. (or t d.m. ha-1)	<table border="1"> <thead> <tr> <th>Stratum Name</th> <th>Std. dev (t.d.m/ha)</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>48.38</td> </tr> <tr> <td>2020 B.tulda</td> <td>40.06</td> </tr> <tr> <td>2021 B.tulda</td> <td>29.33</td> </tr> <tr> <td>2022 B.tulda</td> <td>12.10</td> </tr> </tbody> </table>	Stratum Name	Std. dev (t.d.m/ha)	2019 B.tulda	48.38	2020 B.tulda	40.06	2021 B.tulda	29.33	2022 B.tulda	12.10	VVB based on the review of the carbon calculation sheets <sup>/02/</sup> and Raw data <sup>/04/</sup> confirms standard deviation calculations are appropriate.					
Stratum Name	Std. dev (t.d.m/ha)																
2019 B.tulda	48.38																
2020 B.tulda	40.06																
2021 B.tulda	29.33																
2022 B.tulda	12.10																
Size of each PSPs in the stratum i ( $A_{Plot i}$ )	<p>Total area of PSPs is shown in the table below:</p> <table border="1"> <thead> <tr> <th>Stratum Name</th> <th>Number of permanent sample plot</th> <th>Size of each PSPs (ha)</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>30</td> <td>0.0625</td> </tr> <tr> <td>2020 B.tulda</td> <td>10</td> <td>0.0625</td> </tr> <tr> <td>2021 B.tulda</td> <td>2</td> <td>0.0625</td> </tr> <tr> <td>2022 B.tulda</td> <td>1</td> <td>0.0625</td> </tr> </tbody> </table>	Stratum Name	Number of permanent sample plot	Size of each PSPs (ha)	2019 B.tulda	30	0.0625	2020 B.tulda	10	0.0625	2021 B.tulda	2	0.0625	2022 B.tulda	1	0.0625	VVB confirms the value applied as valid through the on-site inspection <sup>/VI01/-VI31/</sup> and Winrock excel sheet tool for sampling plots <sup>/02/</sup> and confirms that PP has selected total 43 sample permanent plots .
Stratum Name	Number of permanent sample plot	Size of each PSPs (ha)															
2019 B.tulda	30	0.0625															
2020 B.tulda	10	0.0625															
2021 B.tulda	2	0.0625															
2022 B.tulda	1	0.0625															
Land title records	Farmers	VVB confirms that PP has provided with the supporting links <sup>/B05/</sup> to verify the land title.															
Survival rate	Ex-post carbon calculation spreadsheet	VVB confirms the value applied as valid after reviewing the calculation sheets.															

<p>AGB (Above ground biomass)</p>	<p>Refer to ex-post carbon calculation spreadsheet</p>	<p>VVB based on the review of the carbon calculation sheet<sup>t/02/</sup> confirms that the AGB has been calculated through direct allometric biomass equation. PP measures Diameter at Breast height (D) at 1.37meter height from ground and Tree Height (H).</p> <p>VVB has verified the applicability of the equations to check the conservativeness of the removal rates<sup>/17/</sup>. VVB confirms that the allometric equation, used in the carbon calculation sheet, provides a direct biomass calculation and thus yields a conservative result as compared to indirect volumetric equation and therefore same deemed to be acceptable by the VVB.</p>
<p>BGB (Below ground biomass)</p>	<p>Refer to ex-post carbon calculation spreadsheet</p>	<p>VVB based on the review of the carbon calculation sheet<sup>t/02/</sup> confirms that the BGB has been calculated using the root to shoot ratio in line with AR tool-14 requirements<sup>/B02/</sup>. VVB confirms the values in excel sheet are traceable and conservative.</p>
<p>SOC</p>	<p>0.8 t/ha/yr</p>	<p>VVB based on the review SOC AR tool-16<sup>/B02/</sup>, confirms that the PP has applied appropriate default values in compliance with referred tool.</p>
<p>A<sub>DISP,t</sub> Area of land from which agricultural activity is being displaced in the current monitoring</p>	<p>0</p>	<p>VVB based on the review of the KML files<sup>/09/</sup> confirms that no area of land from which agricultural activity is being displaced in the current monitoring period and same</p>

period		was observed during the onsite inspections <sup>/VI01-VI31/</sup> by VVB.
A <sub>Burn,i,t; ha</sub> Area burnt in stratum i	0	VVB based on the review of the KML files <sup>/09/</sup> confirms that the no Area burnt is recorded during the monitoring period and same was observed during the onsite inspections <sup>/VI01-VI31/</sup> by VVB.
Buffer	19%	VVB based on the review non-permanence risk report <sup>/03/</sup> confirms that the PP has applied appropriate and valid.

**Stratification:**

Upon the verification of KML files<sup>/09/</sup>, Forest non forest analysis<sup>/10/</sup>, LULC files<sup>/10/</sup>, Winrock sample plot calculation sheet<sup>/02/</sup> and based on the onsite inspections<sup>/18/ VI01-VI31/</sup> VVB confirmed that in the baseline the project areas composed of shrub lands in Assam, thus in compliance with the AR-ACM0003 methodology requirements the baseline emissions are calculated for the shrub cover. With reference to the stratification, since it has been demonstrated that the soil type and vegetation types are similar the entire project areas, the same was confirmed by the audit team during the onsite inspections. Thus, both ex-ante and ex-post estimations were calculated using stratification based on the actual year of plantation and area locations appropriately representative of the project areas, four strata were identified and appropriately stratified as per the requirements of the applied methodology. This approach was deemed conservative and acceptable by the audit team.

Additionally,, VVB according to the review of the sample plot calculation sheet<sup>/03/</sup> confirms that the stratification for the first Project Activity Instance is based on the year of plantation. In line with the section 8.1.1 of the AR-TOOL14, Stratified Random Sampling approach is used for the estimation of number of sample plots and their allocation to strata following A/R methodological tool “*Calculation of the number of sample plots for measurements within A/R CDM project activities*”. The no. of permanent sample plots of 43 is appropriately calculated across the project strata as assessed in the above. VVB based on the review of the ER sheets<sup>/02/</sup>, project SOPs<sup>/13/</sup>, Management plan<sup>/13/</sup> and based on site inspections<sup>/18/VI01-VI31/</sup> confirms that the tree biomass stock is measured by recording the height and DBH of *B. tulda* according to SOPs<sup>/13/</sup>. DBH is measured 1.37 meters above the ground using a tailor tape, and height is determined with a clinometer and measuring tape. The height is calculated using the formula; “*Height (H) = Distance to tree (m) × Angle (x) + Surveyor eye level height*”. The QA/QCs procedures for data collection and Field Measurements includes that all project teams receive the extensive training on accurate data collection following SOPs to ensure

quality. It is also confirmed that data entry is double-checked by the management team to prevent errors, and unresolved issues in monitoring plot data are excluded from analysis. In the project as part of data archiving, the electronic data and reports are backed up on external hard drives, with copies stored in multiple locations for safekeeping appropriately by PP throughout the project period. PP has appropriate procedures for the handling of conformities as part of monitoring plan (QA/QCs)<sup>/13/</sup> and project demonstrated appropriate procedures for managing non-conformances during the project cycle. When identified, a management plan outlines the root cause. The PP ensures alignment of the project design with forest inventory and management practices, utilizing SOPs and QA/QC procedures from IPCC guidelines if local standards are unavailable. Further, based on the onsite interviews VVB confirmed that the PP has a qualified team of carbon project experts and forestry professionals ensuring effective implementation of the project and compliance with VCS requirements. To address non-conformances, task-specific teams handle site visits, document drafting, remote sensing, and experts review. .

Based on the review of monitoring plan in VCS Joint PD & MR<sup>/01/</sup>, VVB confirms that the monitoring team<sup>/13/</sup> 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<sup>/B02/</sup> and referenced tools<sup>/B03/</sup>.

### 3.5 Non-Permanence Risk Analysis

VVB has reviewed the non-permanence risk report<sup>/03/</sup> in compliance with the VCS standard v4.7<sup>/B01/</sup> and AFOLU Non permanence risk tool v4.2<sup>/B01/</sup>. The risks identified along with the risk score and VVB assessment are as mentioned in the table below:

**Table XVII: Non permanence risk identified and VVB assessment.**

Risk		VVB Assessment and Justification
INTERNAL RISK	Project Management	<p>Based on the review of the VCS PDMR<sup>/01/</sup>, Plantation Management Manual<sup>/13/</sup>, through the web research <a href="#">Bambusa tulda Roxb.   Plants of the World Online   Kew Science</a> and VCS Non-Permanence Risk Report<sup>/03/</sup>, VVB confirms that the species planted as a part of the VCS project implementation are native to the project area.</p> <p>Since it is the project's 1<sup>st</sup> validation there are no previously issued credits for the project and no enforcement to prevent encroachment by outside actors is required to protect more than 50 percent of stocks and no loss event was reported. However, PP has signed the carbon waiver agreement with farmers<sup>/05/</sup> 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</p>

		<p>inspections<sup>/18/ VI01/-VI31/</sup> 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.</p> <p>VVB confirms that project management risk score 0 is acceptable.</p> <p><b>Mitigation:</b> VVB based on the review of management plan<sup>/13/</sup> 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 organisation structure<sup>/13/</sup> and adaptive management plan in place<sup>/13/</sup> 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.</p>
	<p><b>Financial Viability</b></p>	<p>VVB based on the review of the financial viability cash flow sheet<sup>/03/</sup> confirms that the project reaches cash flow breakeven point in greater than seven and up to and including 10 years the current risk assessment. The risk score is kept as 2 which is deemed to be acceptable by VVB.</p> <p>VVB based on the review of the financial viability sheet<sup>/03/</sup> confirms that the Project has secured 40 percent to less than 80 percent of 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.</p> <p>Further based on the review of project financial viability sheet<sup>/03/</sup>, it is confirmed that the project's longevity is covered by management and financial plans.</p>

		<p><b>Mitigation:</b></p> <p>VVB based on the review of the financial viability sheet<sup>/03/</sup> confirms that the project has available as callable financial resources at least 80% of total cash out before project reaches breakeven. Thus, based on the above assessment mitigation score of -2 and the overall financial viability score of “2” is deemed to be appropriate and acceptable.</p>
	<p><b>Opportunity Cost</b></p>	<p>VVB based on review of VCS Non-Permanence risk report provided by PP and on-site inspection<sup>/VI01/-VI31/</sup>, 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<sup>/01/</sup> 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.</p> <p><b>Mitigation:</b></p> <p>VVB based on the review of Contractual agreements<sup>/05/</sup> confirms that the project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over the length 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.</p>
	<p><b>Project Longevity</b></p>	<p>According to NPRT<sup>/03/</sup> and VCS PDMR<sup>/01/</sup> the longevity of the VCS project activity is 40 years. During the on-site inspection<sup>/VI01/-VI31/</sup>, VVB noted that the assumed project longevity is based on the contractual carbon credit agreements<sup>/05/</sup>.</p> <p>VVB, based on the evidence provided<sup>/05/</sup>, confirms that the project has a legally binding agreement that covers at least a</p>

		40 year period from the project start date. Therefore, VVB confirms that the project longevity risk score of 15 is deemed to appropriate and acceptable.
	<b>Total Internal Risk (PM + FV + OC + PL)</b>	In conclusion, VVB confirms that the total internal risk for the VCS project gives 17, which is deemed appropriate and valid.
<b>EXTERNAL RISK</b>	<b>Land Tenure and Resource Access/Impacts</b>	<p>VVB based on onsite inspections<sup>/18/ VI01-VI31/</sup>, and on review of the VCS Non-Permanence Report<sup>/03/</sup>, agreements<sup>/05/</sup> and land titles<sup>/06/</sup> the project includes land that belongs to the farmers in Assam. Project is protected by legally binding Thus, the ownership and resource rights are held by the same entities (farmer) and no disputes exists over land tenure or ownership, user rights. VVB confirms that the risk score 0 is acceptable.</p> <p><b>Mitigation:</b> VVB based on the review of VCS Non-Permanence report<sup>/03/</sup>, agreements<sup>/05/</sup> and land titles<sup>/06/</sup> checked during the onsite inspection confirms that the project area is protected by legally binding commitment to continue management practices that protect carbon stocks over the length of the project crediting period. The risk score is -2.</p> <p>VVB, confirms the overall risk score for Land Tenure and Resource Access/Impacts is calculated as 0 and accepted.</p>
	<b>Stakeholder Engagement</b>	VVB based on the review stakeholder consultation documents <sup>/14/</sup> and on-site interviews <sup>/18/ VI01-VI31/</sup> confirms that more than 50 percent of stakeholders living within the project area and who are reliant on the project have been consulted and more than 20 percent of stakeholders living outside the project area within 20 km of the project area, and who are reliant on the project area have been consulted. Thus, the risk score of 0 is deemed to appropriate by the VVB.
	<b>Political Risk</b>	As per the VCS Non-Permanence Risk Report, the country's calculated governance score is -0.13. This has been further confirmed by reviewing the World Bank Institute Worldwide

		<p>Governance Indicators score for India with the value for all 5 governance indicators, averaged over the last 5 year 2017, 2018, 2019, 2020, and 2021, available at: <a href="https://www.worldbank.org/en/publication/worldwide-governance-indicators">https://www.worldbank.org/en/publication/worldwide-governance-indicators</a></p> <p><b>Mitigation:</b> 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, and 3) has a documented and active climate change plan that includes the project activity. The risk score of -2 is appropriate.</p> <p>VVB confirms that overall risk score of 0 for political risk is acceptable.</p>
	<p><b>Total External Risk (LT + CE +PC)</b></p>	<p>In conclusion, VVB confirms that the total external risk for the VCS project gives 0, which is deemed appropriate and valid</p>

<b>NATURAL RISK</b>	<b>Fire (F)</b>	<p>As per the VCS Non-Permanence Risk Report<sup>/03/</sup> and based on on-site inspection<sup>/VI01-VI31/</sup> with farmers and review of local literature available<sup>44 45</sup>, it is found that the occurrence of fire incidence has a low impact on the project activities. This possesses a threat of losses and thus, Historic likelihood is once every 10 to less than 25 years. The justification provided by PP is deemed appropriate to the VVB and thus acceptable.</p> <p>Furthermore, VVB, based on the review of document Fire risks<sup>/03/</sup>, confirms that the risk of fire in the project region is not <i>de minimus</i>, hence, considering mitigation score 0.25 Sub-total risk score 0.50 is acceptable-</p> <p>Additionally, VVB based on on-site interviews<sup>/18/VI01-VI31/</sup>, with the farmers and implementation partners, confirms that the project areas are widely dispersed, reducing fire risk to whole project plantations. Being near homes and farms, they are actively managed, allowing early detection and quick response. Many sites are also farm plots with low fuel density, minimizing fire hazards. Moreover, the risk of fire is greatly mitigated by the project design.</p>
	<b>Pest and Disease Outbreaks (PD)</b>	<p>VVB based on review of the report Global Review of Forest Pests and Diseases<sup>46</sup> confirms that the significance score for pests and diseases is less than 5% (insignificant). Thus, considering mitigation score, the Sub-total risk score of 0.50 is considered appropriate for this risk.</p>

<sup>44</sup> <https://fsi.nic.in/isfr-2021/chapter-6.pdf>

<sup>45</sup> <https://www.globalforestwatch.org/dashboards/country/IND/4/?map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>

<sup>46</sup> <https://openknowledge.fao.org/server/api/core/bitstreams/a2cc6101-c03a-4205-afd4-5a911fd268d3/content>

	<p><b>Extreme Weather (W)</b></p>	<p>VVB based on the review of the NPRT<sup>/03/</sup> and through web references <a href="https://earthquakelist.org/india/assam/">https://earthquakelist.org/india/assam/</a>, <a href="https://fsi.nic.in/isfr-2021/chapter-6.pdf">https://fsi.nic.in/isfr-2021/chapter-6.pdf</a> and <a href="https://www.globalforestwatch.org/dashboards/country/IND/4/?map=eyJYW5Cb3VuZCI6dHJ1ZX0%3D">https://www.globalforestwatch.org/dashboards/country/IND/4/?map=eyJYW5Cb3VuZCI6dHJ1ZX0%3D</a> confirms that the extreme weather risk associated to the project activity is low with appropriate mitigation, sub-total risk score of 0.25 the same was deemed to be acceptable.</p>
	<p><b>Geological Risk (G)</b></p>	<p>VVB based on the review of <a href="https://earthquakelist.org/india/assam/">https://earthquakelist.org/india/assam/</a> confirms that Historically, no earthquakes in Assam have resulted in carbon stock loss in plantation, the same was confirmed during the onsite inspections<sup>/18/VI01-/VI31/</sup> and since the project area is in Assam, the likelihood of an earthquake is considered once every 100 years, or less frequently. Therefore, likelihood score of 2 with appropriate mitigation (0.25), sub-total risk score of 0.50 is deemed to be acceptable by VVB.</p>
	<p><b>Other Natural Risk (ON)</b></p>	<p>Not applicable.</p>
	<p><b>Total Natural Risk (F + PD + W + G + ON)</b></p>	<p>In conclusion, VVB confirms that the total natural risk for the VCS project gives 1.75, which is deemed appropriate and valid.</p>
	<p><b>3.2 Future climate impact</b></p>	<p>VVB through the KML files<sup>/09/</sup> of the project areas and the onsite inspections<sup>/18/VI01-/VI31/</sup> confirmed that the 100% project areas is located in the Southeast Asian country India.</p> <p>Based on the review of NPRT<sup>/03/</sup> VVB, confirmed that for the Projected Future Climate Impact Level, it is demonstrated and selected scores of negative impacts on project for the risk related to mean precipitation, Landslide, River flood, Agricultural and ecological drought, fire weather and air temperature. Whereas other risks like coastal erosion, coastal floods, cold spells, tropical cyclones and extreme</p>

		heat are not applicable for the proposed project since the project lands are not located near coastal areas. The supporting literature <sup>/B04/</sup> are provided and checked to confirm the impact on the project.
	<b>3.3 sea level rise risk (SLR)</b>	VVB based on the review of the KML files <sup>/09/</sup> and onsite interviews <sup>/18/V101/-/V131/</sup> confirmed that project activities are not occurring on the wetland ecosystems, therefore this SLR risk accounting is not applicable.  Adaptive Capacity: As verified through the NPRT <sup>/03/</sup> the project proponent demonstrated 5 criteria of adaptive capacity.
	<b>Total Natural Risk (F + PD + W + G + ON+ (NR-c + NR-nc +SLR))</b>	The total natural risk rating is calculated as 1.96 appropriately and acceptable.

**Overall Non-Permanence Risk Rating and Buffer Determination**

	<b>Risk Category</b>	<b>Rating</b>
a)	Internal risk	17.00
b)	External risk	0
c)	Natural Risk	1.96
<b>Overall risk rating (a + b + c)</b>		<b>19</b>

In total, the project faces minor risks and if certain risks are there, mitigation measures are in place. This is validation and verification of the project. 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 19% is adequate for the project activity is appropriate and valid in line with the requirements of the AFOLU NPRT<sup>/B01/</sup> and VCS standard<sup>/B01/</sup>.

## 4 VERIFICATION FINDINGS

## 4.1 Project Implementation Status

Implementation Status	Assessment steps, evidence checked, & conclusion:
Project implementation	<p>VVB, based on the on-site inspection<sup>/VI01/-VI31/</sup> and supporting documents confirms that there are no material misstatements between the project implementation and the Project Description<sup>/01/</sup>.</p> <p>The implementation of the proposed project activity is all the plantation activities undertaken from 2019 to 2022 have been considered. The total plantation area of the first project activity instance is 834.33 hectares<sup>/09/</sup>.</p> <p>PP has outlined the project implementation activities. The project implementation activities for the bamboo plantation initiative encompass a comprehensive and sustainable approach. The supply of tree saplings is a critical first step, involving the procurement of high-quality planting materials suited to local conditions. Training on land preparation and tree management is provided to stakeholders, covering essential skills such as site inspection, pit digging, fertilization, and irrigation setup. Site selection is based on criteria like soil quality, water availability, and sunlight, ensuring optimal growth conditions. Species selection prioritizes native species that are resilient and adaptable to the local climate, enhancing ecological and economic benefits.</p> <p>Transplanting of saplings follows standardized methods, including the use of containers, naked roots, or stem cuttings, depending on the species. Engagement of local youth is a key component, providing them with opportunities to participate in plantation activities and gain valuable skills. Stakeholder engagement involves initial consultations, feedback sessions, and the signing of contractual agreements to ensure all parties are informed and committed. Farmer onboarding includes detailed processes for participation, ensuring their active involvement and benefit from the project.</p>

	<p>Risk mitigation strategies are implemented to protect plantations from natural hazards like fires and pests, while adaptive management protocols allow for continuous monitoring and adjustments based on field data. Regular field inspections are conducted to monitor tree survival, growth, and health, with replanting as necessary. The involvement of implementation partners is crucial, providing expertise and resources to support various project activities. The manual provides details regarding the involvement of implementation partners in these activities.</p>
<p>Monitoring plan</p>	<p>The monitoring plan has been defined against the requirements of section 6.1 of Methodology AR-ACM0003<sup>/B03/</sup> (version 2.0). VVB has assessed all parameters (fixed and monitored) from VCS joint PDMR<sup>/01/</sup>.</p> <p>VVB, based on the on-site inspection<sup>/VI01-VI31/</sup> and on review of monitoring plan in Joint PDMR<sup>/01/</sup>, management plan<sup>/13/</sup> and SOPs<sup>/13/</sup> confirms that the monitoring team consists of competent professionals for collection of data, monitoring and verifying the data. Further, VV team confirms that the project includes appropriate procedures for the handling of conformities as part of monitoring plan (QA/QCs) and demonstrated that for managing non-conformances during the project cycle. When identified, a management plan outlines the root cause. The PP ensures alignment of the project design with forest inventory and management practices, utilizing SOPs and QA/QC procedures from IPCC guidelines if local standards are unavailable. To address non-conformances task-specific teams handles site visits, document drafting, remote sensing, and expert review. The QA/QC procedures mentioned sound reasonable and valid. The same was further assessed in the section 3.4.8 of this report.</p> <p>Overall, the monitoring is done in adherence to the monitoring plan and in compliance with the requirements of the applied methodology<sup>/B02/</sup> and referenced tools<sup>/B03/</sup>.</p>

	<p>Through the review of the VCS PDMR<sup>01/</sup> and Project management manual<sup>13/</sup>, VVB confirms that PP has provided detailed monitoring plan.</p> <p>VVB, based on the review of all the monitoring plan<sup>13/</sup> confirms that there are no material misstatements between the actual monitoring system, and the monitoring plan set out in the joint PDMR<sup>01/</sup> and the applied methodology<sup>B02/</sup>.</p>								
<p>AFOLU-specific project implementation</p>	<p>VVB, based on the on-site inspection <sup>/VI01-VI31/</sup> and review of the Joint VCS PD &amp; MR<sup>01/</sup>, KML files<sup>09/</sup>, Field data<sup>04/</sup>, confirms that the first PAI only covers 834.33 hectares and the calculations and assessment have been conducted for the area under first PAI and confirms that the implementation of the proposed project activity is all the plantation activities undertaken from 2019 to 2022 have been considered. The Joint VCS PD &amp; MR<sup>01/</sup> refers 4500 ha, only as a plan for the entire grouped project, which has no material impact on the validation and 1<sup>st</sup> periodic verification of this grouped project and the first PAI at time of initial registration/issuance.</p> <p>Key activities include establishing project boundaries using GPS tracking, periodic verification of boundaries, and geo-referencing each land parcel. The plan emphasizes stratification based on biomass accumulation, planting dates, and disturbances like fire or pest outbreaks. Sampling design follows a precision level of <math>\pm 10\%</math> of the mean at a 90% confidence level, using tools like the Sampling Calculator to determine the number of permanent sample plots needed.</p> <p>The stratification for the first PAI is based on the species, spatial distribution and plantation years were given due weightage.</p> <table border="1"> <thead> <tr> <th>Sr.No.</th> <th>Stratum Name</th> <th>Area (Ha.)</th> <th>Number of permanent sample plot</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2019 B.tulda</td> <td>540.48</td> <td>30</td> </tr> </tbody> </table>	Sr.No.	Stratum Name	Area (Ha.)	Number of permanent sample plot	1	2019 B.tulda	540.48	30
Sr.No.	Stratum Name	Area (Ha.)	Number of permanent sample plot						
1	2019 B.tulda	540.48	30						

2	2020 B.tulda	223.17	10
	2021 B.tulda	59.95	2
	2022 B.tulda	10.73	1

VVB, based on the on-site inspection<sup>/VI01/-VI31/</sup> and remote sensing GIS<sup>/09/</sup>, confirms that there is no loss of carbon stock that occurred during the 1<sup>st</sup> periodic verification-

## 4.2 Accuracy of Reduction and Removal Calculations

Based on the review of the VCS Joint PD & MR<sup>/01/</sup>, the data and parameters used for calculation of GHG emission reductions and removals for this verification period are as follows:

**Table XVIII: Data/Parameters fixed during Joint Validation & verification:**

Data/Parameters fixed	Value Applied	VVB Assessment				
DBH	Refer to ex-post carbon calculation spreadsheet <sup>/02/</sup>	VVB confirms the value applied is valid after reviewing the raw data sheets <sup>/04/</sup> . VVB during the on-site inspection <sup>/VI01/-VI31/</sup> also verifies the DBH measurement through measuring diameter at DBH and cross checking it against the raw data sheets <sup>/04/</sup> .				
Ai	Project Stratification for first Project Activity instance is based on the year of plantation. Strata wise total area for the first Project Activity instance using GIS is given in below table: <table border="1" style="margin-left: 20px; margin-top: 10px;"> <thead> <tr> <th style="background-color: #1a3d54; color: white;">Stratum Name</th> <th style="background-color: #1a3d54; color: white;">Area (Ha.)</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>540.48</td> </tr> </tbody> </table>	Stratum Name	Area (Ha.)	2019 B.tulda	540.48	VVB confirms the values applied as valid after reviewing the raw data sheet <sup>/04/</sup> and KML files <sup>/09/</sup> for first PAI.
Stratum Name	Area (Ha.)					
2019 B.tulda	540.48					

	<table border="1"> <tbody> <tr> <td>2020 B.tulda</td> <td>223.17</td> </tr> <tr> <td>2021 B.tulda</td> <td>59.95</td> </tr> <tr> <td>2022 B.tulda</td> <td>10.73</td> </tr> </tbody> </table>	2020 B.tulda	223.17	2021 B.tulda	59.95	2022 B.tulda	10.73							
2020 B.tulda	223.17													
2021 B.tulda	59.95													
2022 B.tulda	10.73													
Standard Deviation; $t d.m.$ (or $t d.m. ha^{-1}$ )	<table border="1"> <thead> <tr> <th>Stratum Name</th> <th>Std. dev (t.d.m/ha)</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>48.38</td> </tr> <tr> <td>2020 B.tulda</td> <td>40.0</td> </tr> <tr> <td>2021 B.tulda</td> <td>29.33</td> </tr> <tr> <td>2022 B.tulda</td> <td>12.10</td> </tr> </tbody> </table>	Stratum Name	Std. dev (t.d.m/ha)	2019 B.tulda	48.38	2020 B.tulda	40.0	2021 B.tulda	29.33	2022 B.tulda	12.10	VVB based on the review of the carbon calculation sheets <sup>/02/</sup> and Raw data <sup>/04/</sup> confirms standard deviation calculations are appropriate.		
Stratum Name	Std. dev (t.d.m/ha)													
2019 B.tulda	48.38													
2020 B.tulda	40.0													
2021 B.tulda	29.33													
2022 B.tulda	12.10													
$W_i$	<table border="1"> <thead> <tr> <th>Stratum Name</th> <th>Std. dev (t.d.m/ha)</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>0.65</td> </tr> <tr> <td>2020 B.tulda</td> <td>0.27</td> </tr> <tr> <td>2021 B.tulda</td> <td>0.07</td> </tr> <tr> <td>2022 B.tulda</td> <td>0.01</td> </tr> </tbody> </table>	Stratum Name	Std. dev (t.d.m/ha)	2019 B.tulda	0.65	2020 B.tulda	0.27	2021 B.tulda	0.07	2022 B.tulda	0.01	VVB confirms the value applied as valid through the on-site inspection <sup>/VI01/-VI31/</sup> and Winrock excel sheet tool for sampling plots <sup>/02/</sup> and confirms that PP has appropriately demonstrated relative weight of the area of stratum i		
Stratum Name	Std. dev (t.d.m/ha)													
2019 B.tulda	0.65													
2020 B.tulda	0.27													
2021 B.tulda	0.07													
2022 B.tulda	0.01													
Size of each PSPs in the stratum i ( $A_{Plot i}$ )	<p>Total area of PSPs is shown in the table below:</p> <table border="1"> <thead> <tr> <th>Stratum Name</th> <th>Number of permanent sample plot (Winrock calculator)</th> <th>PSPs selected by PP</th> </tr> </thead> <tbody> <tr> <td>2019 B.tulda</td> <td>29</td> <td>30</td> </tr> <tr> <td>2020 B.tulda</td> <td>9</td> <td>10</td> </tr> <tr> <td>2021 B.tulda</td> <td>1</td> <td>2</td> </tr> </tbody> </table>	Stratum Name	Number of permanent sample plot (Winrock calculator)	PSPs selected by PP	2019 B.tulda	29	30	2020 B.tulda	9	10	2021 B.tulda	1	2	VVB confirms the value applied as valid through the on-site inspection <sup>/VI01/-VI31/</sup> and Winrock excel sheet tool for sampling plots <sup>/02/</sup> and confirms that PP has selected total 43 sample permanent plots.
Stratum Name	Number of permanent sample plot (Winrock calculator)	PSPs selected by PP												
2019 B.tulda	29	30												
2020 B.tulda	9	10												
2021 B.tulda	1	2												

	2022 B.tulda	0	1	
Land title records	Farmers			VVB confirms that PP has provided with the supporting links <sup>/B05/</sup> to verify the land title.
Survival rate	Ex-post carbon calculation spreadsheet			VVB confirms the value applied as valid after reviewing the calculation sheets.
AGB (Above ground biomass)	Refer to ex-post carbon calculation spreadsheet			<p>VVB based on the review of the carbon calculation sheet<sup>/02/</sup> confirms that the AGB has been calculated through direct allometric biomass equation. PP measures Diameter at Breast height (D) at 1.37meter height from ground and Tree Height (H).</p> <p>VVB has verified the applicability of the equations to check the conservativeness of the removal rates. VVB confirms that the allometric equation, used in the carbon calculation sheet, provides a direct biomass calculation and thus yields a conservative result as compared to indirect volumetric equation and therefore same deemed to be acceptable by the VVB.</p>
BGB (Below ground biomass)	Refer to ex-post carbon calculation spreadsheet			<p>VVB based on the review of the carbon calculation sheet<sup>/02/</sup> confirms that the BGB has been calculated using the root to shoot ratio in line with AR tool-14 requirements<sup>/B02/</sup>. VVB confirms the values in excel sheet are traceable and conservative.</p>

On reviewing VCS Joint PD & MR<sup>/01/</sup> and supporting spreadsheets<sup>/02/</sup> VVB has ascertained that all calculations of carbon sequestration are in compliance with the requirements stated in VCS Standard v4.7<sup>/B01/</sup> and methodology applied AR-ACM0003 V 2.0<sup>/B02/</sup>.

**Baseline net GHG removals by sinks**

The baseline Net GHG removals by sinks are estimated from shrubs biomass in line with para 61 of AR tool-014 requirements, since there is a significant presence of shrub cover in the project baseline in the VCS project activity. VVB assessments for the same are provided in the section 3.4.6 of this report and found to be appropriate.

The validation and verification team has checked and confirmed that the amount of baseline removals taken by the PP are in conformance with VCS requirements and the methodology applied.

**Project net GHG removals by sinks**

The verification of the actual GHG calculation was done by checking the formulas as per equation 2 of the methodology AR-ACM0003 version 2.0, as follow:

$$\Delta C_{ACTUAL,t} = \Delta CP_{,t} - GHG_{E,t} \tag{Equation (2)}$$

Where:

$\Delta C_{ACTUAL,t}$  = Annual actual net GHG removals by sinks at time t; t CO<sub>2</sub>-e yr-1

$\Delta CP_{,t}$  = Change in carbon stocks in project, occurring in the selected carbon pools, at time t; t CO<sub>2</sub>-e yr-1

$GHG_{E,t}$  = Increase of non-CO<sub>2</sub> GHG emissions within the project boundary as a result of the implementation of the A/R project activity, in year t; t CO<sub>2</sub>-e

After reviewing the VCS PDMR<sup>/02/</sup>, VVB has observed that the non-CO<sub>2</sub> GHG emissions have been considered as zero by the PP.

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

$$\Delta C_{P,t} = \Delta C_{TREE-PROJ,t} + \Delta C_{SHRUB-PROJ,t} + \Delta C_{DW-PROJ,t} + \Delta C_{LI-PROJ,t} + \Delta SOC_{AL,t}$$

Where:

$\Delta CP_{,t}$  = Change in the carbon stocks in project, occurring in the selected carbon pools, in year t; t CO<sub>2</sub>-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<sub>2</sub>-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<sub>2</sub>-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<sub>2</sub>-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<sub>2</sub>-e

$\Delta SOC_{AL,t}$  = 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; tCO<sub>2</sub>-e

As mentioned above, for the purpose of this project, above and below ground biomass of trees and change in carbon stock in SOC in project were considered for calculations<sup>/02/</sup>.

**Estimation of carbon stocks and change in carbon stocks of trees in A/R CDM project activities**

As per the VCS MR<sup>/02/</sup>, Mean tree biomass per hectare in a stratum and the associated variance are estimated as follows:

$$\Delta b_{TREE,i} = \frac{\sum_{p=1}^{n_i} \Delta b_{TREE,p,i}}{n_i}$$

$$S_{\Delta,i}^2 = \frac{n_i \times \sum_{p=1}^{n_i} \Delta b_{TREE,p,i}^2 - \left(\sum_{p=1}^{n_i} \Delta b_{TREE,p,i}\right)^2}{n_i \times (n_i - 1)}$$

...

Where,

$\Delta b_{TREEi}$  = Mean change in tree biomass per hectare in stratum i; t d.m. ha-1

$\Delta b_{TREEp,i}$  = Change in tree biomass per hectare in plot p in stratum i; t d.m. ha-1

$S_{\Delta,i}^2$  = Variance of mean change in tree biomass per hectare in stratum i; (t d.m. ha-1 ) 2

$n_i$  = Number of sample plots, in stratum i, in which tree biomass was re-measured.

**Estimation in the changes of carbon stock in shrub biomass:**

VVB based on the review of the ER sheets<sup>/02/</sup> and PDMR<sup>/01/</sup> confirms that the change in carbon stock in shrub biomass in project in year t is estimated based on the tool “Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities”, AR-TOOL14. The project activity does not involve shrub plantation; hence, the biomass or any changes in the biomass of shrubs are assumed to be zero. During the onsite inspection, the VVB confirmed the absence of shrub plantation; therefore, the value of zero is valid and acceptable.

**Estimation in the changes of carbon stock in deadwood and litter biomass:**

VVB based on the review of the ER sheets<sup>/02/</sup> and PDMR<sup>/01/</sup>, the VVB confirms that changes in carbon stock in dead wood and litter have been excluded from the carbon calculations as a conservative approach to estimate removals. Accordingly, a value of zero has been applied, which is deemed acceptable by the VVB.

**Estimation of the changes in carbon stocks in soil organic carbon (SOC):**

VVB based on the review of the ER sheets<sup>/02/</sup> and PDMR<sup>/01/</sup> confirms that the estimations of soil organic carbon (SOC) stocks were done accordance to the “Tool for the change in soil organic carbon stocks due to the implementation of A/R CDM project activity”. SOC at the start of the project (SOC<sub>INITIAL,i</sub>) is appropriately estimated by multiplying the reference SOC with factors from the AR tool06<sup>/B02/</sup>.

**Net GHG Emission Reductions and Removals**

The net anthropogenic GHG removals by sinks are calculated as follows:

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

Where:

$\Delta C_{AR\ CDM\ t}$  = Net anthropogenic GHG removals by sinks, in year t; tCO<sub>2</sub>-e

$\Delta C_{ACTUAL\ t}$ , = Actual net GHG removals by sinks, in year t; tCO<sub>2</sub>-e

$\Delta C_{BSL\ t}$  = Baseline net GHG removals by sinks, in year t; tCO<sub>2</sub>-e

$LK_t$  = GHG emissions due to leakage, in year t; tCO<sub>2</sub>-e

Based on assessment above, VVB confirms the accuracy of GHG removals<sup>/02/</sup>, 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)<sup>B02/</sup> and requirements of the monitoring plan<sup>13/01/</sup>.

### 4.3 Quality of Evidence to Determine Reductions and Removals

VVB during the course of joint validation & 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<sup>B02/</sup>, tools<sup>B03/</sup>, IPCC<sup>B05/</sup>, literatures<sup>17/</sup>, this raw data is then recorded and transferred in the carbon calculation spreadsheet<sup>02/</sup> 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<sup>04/</sup> have been provided by the PP, which tallies with the data provided in the carbon calculation spreadsheet<sup>02/</sup>. The detailed assessment of the documents used during the assessment process has been provided below:

#### Evidence and their pertinence with respect to the VCS project

Sr.No.	Documents	Pertinence
i.	Carbon calculation spreadsheet <sup>02/</sup>	To demonstrate the carbon sequestration calculation as per the applied methodology and tool.
ii.	Forest/Non-Forest analysis Report <sup>10/</sup>	To demonstrate project eligibility in line with requirements stated in section 3.2 of VCS standard v4.7 and to verify the baseline assessment.
iii.	Project operation <sup>13/</sup>	To demonstrate compliance with VCS ARR requirement section A 1.1 of the VCS standard v4.7.
iv.	Proof of title and right of carbon credits <sup>05/</sup>	To demonstrate compliance in line with Section 1.6 of VCS Joint PD & MR template instructions.
v.	Proof of project start date <sup>07/</sup>	To demonstrate the start date of plantation and crediting period.
vi.	Shapefiles/KML files <sup>09/</sup>	To demonstrate project boundary, area and ownership of project area.

vii.	Standard operating procedures/ Monitoring manual <sup>/13/</sup>	Written procedures for plantation, monitoring and field data collection for personnel involved
viii.	Permanent Sample plot monitoring Field data <sup>/04/</sup>	Field data sheet with height, DBH and other data pertaining to each sample plot selected by the PP.

VVB based on the review of management plan<sup>/13/</sup> and on-site inspection interviews<sup>/18/V101/-V131/</sup> confirms that the Competent employees are recruited for the management and operation of the project. The quality of supporting evidence submitted to VVB for verification is adequate and found to be verifiable. Raw data/ Field data sheets<sup>/04/</sup>, KML files<sup>/09/</sup>, SOPs and other supporting documents related to monitoring <sup>/13/</sup> were checked by the assessment team to confirm the authenticity of the documents and to check the correctness of the calculations. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been discussed and found to be appropriate

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

## 5 VALIDATION AND VERIFICATION OPINION

### 5.1 Validation and Verification Summary

CCIPL has performed the joint validation & verification of the proposed VCS grouped project “Bamboo plantations by farmers and community in the country”. The GHG statement provided is the responsibility of the project participant.

This assessment has been performed based on all guidance and criteria as provided in VCS Standard version 4.7, VCS Program Guide version 4.4, VCS Validation and Verification Manual-version 3.2 and Registration & Issuance Process version 4.6, the updated project documentation, the carbon sequestration calculation spreadsheets<sup>/02/</sup>, PSP’s raw data sheet<sup>/02/</sup> provided by the PP and on-site inspection<sup>/V101/-V131/</sup>, 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. 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 i.e., constant values for the relevant data and parameters. Based on the review of the Joint VCS PDMR<sup>/01/</sup>, carbon calculation spreadsheet<sup>/02/</sup>, and relevant supporting evidence (i.e., peer review literature, IPCC default values, species specific research studies), VVB confirms that all the assumptions and statements made by PP are valid and appropriate with the possible reasonableness. Further, VVB assessed the relevant data and parameters in section 4.2 of this report.

The estimated GHG statement is the responsibility of the project. The project activity provides information in VCS PDMR<sup>/01/</sup> as required by the VCS Standard<sup>/B01/</sup> 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 PDMR<sup>/01/</sup> 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 26 findings<sup>/APPENDIX 4 Findings log/</sup> have been raised, which includes 04 Corrective Action Requests (CARs), 22 Clarification Requests (CLs) and 00 Forward Action requests (FARs). All findings raised by VVB are addressed by PP. Revised PD & MR and supporting documents were submitted to VVB by PP for review. As per opinion of VVB the documents and Joint PD & MR, were found to be in compliance with VCS requirements.

The validation has been performed using a risk-based approach, as described above. The total ex-ante GHG emission removals over the 30-year crediting period are **302,310 tCO<sub>2</sub>e** with annual removals of **10,077 t CO<sub>2</sub>e/year**.

**Crediting Period:** From 09-July-2019 to 08-July-2049

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

<b>The non-permanence risk rating (%)</b>	19%
<b>If applicable, the Long-term Average (LTA), whether it has been properly updated, and if it has been reached.</b>	270,010 tCO <sub>2</sub> e

<b>Vintage period</b>	<b>Estimated baseline emissions (tCO<sub>2</sub>e)</b>	<b>Estimated project emissions (tCO<sub>2</sub>e)</b>	<b>Estimated leakage emissions (tCO<sub>2</sub>e)</b>	<b>Estimated buffer pool allocation (tCO<sub>2</sub>e)</b>	<b>Estimated reduction VCUs (tCO<sub>2</sub>e)</b>	<b>Estimated removal VCUs (tCO<sub>2</sub>e)</b>	<b>Estimated total VCU issuance (tCO<sub>2</sub>e)</b>
<b>09-July-2019 to 31-Dec-2019</b>	530	16,256	0	3,089	0	15,727	12,638
<b>01-Jan-2020 to 31-Dec-2020</b>	1,322	40,426	0	7,681	0	39,104	31,423
<b>01-Jan-2021 to 31-Dec-2021</b>	1,622	49,437	0	9,393	0	47,815	38,422
<b>01-Jan-2022 to 31-Dec-2022</b>	1,698	51,696	0	9,822	0	49,998	40,176
<b>01-Jan-2023 to 31-Dec-2023</b>	1,711	52,043	0	9,888	0	50,332	40,444

<b>01-Jan-2024 to 31-Dec-2024</b>	1,711	48,944	0	9,299	0	47,233	37,934
<b>01-Jan-2025 to 31-Dec-2025</b>	1,711	31,942	0	6,069	0	30,232	24,163
<b>01-Jan-2026 to 31-Dec-2026</b>	1,711	11,796	0	2,241	0	10,085	7,844
<b>01-Jan-2027 to 31-Dec-2027</b>	1,711	4,495	0	854	0	2,784	1,930
<b>01-Jan-2028 to 31-Dec-2028</b>	1,711	2,706	0	514	0	995	481
<b>01-Jan-2029 to 31-Dec-2029</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2030 to 31-Dec-2030</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2031 to 31-Dec-2031</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2032 to 31-</b>	1,711	2,442	0	464	0	731	267

<b>Dec-2032</b>							
<b>01-Jan-2033 to 31-Dec-2033</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2034 to 31-Dec-2034</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2035 to 31-Dec-2035</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2036 to 31-Dec-2036</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2037 to 31-Dec-2037</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2038 to 31-Dec-2038</b>	1,711	2,442	0	464	0	731	267
<b>01-Jan-2039 to 31-Dec-2039</b>	1,181	1,679	0	319	0	498	179
<b>01-Jan-2040 to 31-Dec-2040</b>	389	545	0	104	0	156	52

<b>01-Jan-2041 to 31-Dec-2041</b>	89	122	0	23	0	33	10
<b>01-Jan-2042 to 31-Dec-2042</b>	12	16	0	3	0	4	1
<b>01-Jan-2043 to 31-Dec-2043</b>	0	0	0	0	0	0	0
<b>01-Jan-2044 to 31-Dec-2044</b>	0	0	0	0	0	0	0
<b>01-Jan-2045 to 31-Dec-2045</b>	0	0	0	0	0	0	0
<b>01-Jan-2046 to 31-Dec-2046</b>	0	0	0	0	0	0	0
<b>01-Jan-2047 to 31-Dec-2047</b>	0	0	0	0	0	0	0
<b>01-Jan-2048 to 31-Dec-2048</b>	0	0	0	0	0	0	0
<b>01-Jan-2049 to 08-</b>	0	0	0	0	0	0	0

<b>July-2048</b>							
<b>Total</b>	<b>34,212</b>	<b>336,523</b>	<b>0</b>	<b>63,939</b>	<b>0</b>	<b>302,310</b>	<b>238,371</b>

### 5.3 Verification conclusion

The verification activities conducted by CCIPL included:

- Assessment of the grouped project (including 1<sup>st</sup> 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-ante estimated GHG removal including methodological equation for the ex-ante 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
- Assessment of monitoring practices in the field.
- Assessment of information management system.
- Assessment of whether the project has been implemented in accordance with the VCS Joint PD & MR<sup>01/</sup> and
- Assessment of whether the provisions made in the monitoring plan were consistently and appropriately applied.

The VVB has raised 22 clarification requests (CLs) and 04 corrective action requests (CARs) for the 1st Periodic Verification, all of which have been successfully closed. Zero (00) Forward Action Request (FAR) has been raised during this joint validation and 1st verification. All findings have been successfully closed after review of relevant documents and justification from project proponent.

The total achieved GHG removals for this monitoring period as per the ex-post carbon calculation spreadsheet<sup>02/</sup> is 205,146 tCO<sub>2</sub>e. The non-permanence risk rating is kept at 19%. So, the VCUs eligible for issuance after deduction of buffer pool credits is 166,168 tCO<sub>2</sub>e.

**Verification Period:** From 09<sup>th</sup> -July-2019 to 16<sup>th</sup> - December-2024

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

<b>The non-permanence risk rating (%)</b>	19%
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<p>If applicable, the Long-term Average (LTA), whether it has been properly updated, and if it has been reached.</p>	<p>562,816(LTA has been updated based on monitored data)</p>
<p>Whether a loss has been appropriately accounted for, in accordance with the VCS Program rules, if applicable.</p>	<p>NA</p>

Vintage Period	Baseline emissions (tCO <sub>2</sub> e)	Project emissions (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Buffer pool allocation (tCO <sub>2</sub> e)	Reductions VCUs (tCO <sub>2</sub> e)	Removals VCUs (tCO <sub>2</sub> e)	Total VCU issuance (tCO <sub>2</sub> e)
09-Jul-2019 to 31-Dec-2019	688	18,849	0	3,451	0	18,162	14,711
01-Jan-2020 to 31-Dec-2020	1,430	39,198	0	7,176	0	37,768	30,592
01-Jan-2021 to 31-December-2021	1,426	39,091	0	7,156	0	37,665	30,508
01-Jan-2022 to 31-Dec-2022	1,426	39,091	0	7,156	0	37,665	30,508
01-Jan-2023 to 31-Dec-2023	1,426	39,091	0	7,156	0	37,665	30,508

<b>01-Jan-2024 to 16-Dec-2024</b>	1,371	37,592	0	6,882	0	36,220	29,338
<b>Total</b>	<b>7,768</b>	<b>212,913</b>	<b>0</b>	<b>38,978</b>	<b>0</b>	<b>205,146</b>	<b>166,165</b>

### 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
09-Jul-2019 to 31-Dec-2019	15,727	18,162	-17.41	Based on review of joint VCS PD/MR <sup>01/</sup> and ER sheets <sup>02/</sup> , in order to estimate the percentage difference, the achieved carbon removals have been subtracted from the ex-carbon removals and then divided by the ex-ante carbon removals <sup>02/</sup> . The estimated GHG removal is based on the assumption that the realized emission reduction falls short of the estimated reduction due to variations in plantation dates and the density per hectare within the project area. Secondly, the difference in the growth parameters (diameter at breast height and height) exists between the secondary data and the actual data <sup>04/</sup> . VVB, based on the justification provided
01-Jan-2020 to 31-Dec-2020	39,104	37,768		
01-Jan-2021 to 31-Dec-2021	47,815	37,665		
01-Jan-2022 to 31-Dec-2022	49,998	37,665		
01-Jan-2023 to 31-Dec-2023	50,332	37,665		
01-Jan-2024 to 16-Dec-2024	45,422	36,220		
<b>Total</b>	<b>248,398</b>	<b>205,146</b>		

				in the VCS PDMR <sup>/01/</sup> , confirms that the percent difference has been calculated in line with the VCS requirements.
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VVB based on assessment above confirms that GHG removals from the project are real, additional and permanent (including provision of appropriate buffer to account any reversal).

# APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

Section	Information	Justification	Assessment method conclusion
1.8	Land ownership documents	As this is the private information of the stakeholder which may be violate the privacy right of the stakeholder, therefore, it is excluded from public version of the documents.	VVB confirms that fund allocation to farmers is based on plantation size and carbon sequestration per carbon waiver agreements, ensuring a fair and transparent benefit-sharing mechanism. A random verification of 63 land ownership documents, benefit-sharing agreements (carbon credit agreements) using the RaoSoft sample calculator (90/10% confidence interval of 828 agreements) found clear terms between PP, the implementation partner, and farmers, with a 40-year longevity meeting VCS standard 3.18.8. VVB also verified land ownership via NOC letters, IDs, and bank account details. While PP considers benefit-sharing percentages commercially sensitive and excluded them from PD section 2.3.5, they were disclosed to VVB.
1.8	Agreements between the PP and farmer community		
1.12	Agreements between the Project developer and PP		
2.3.5	Benefit sharing mechanism		

## APPENDIX 02: ABBREVIATIONS

<b>AGB</b>	Above Ground Biomass
<b>AFOLU</b>	Agriculture, Forest and other Land Use
<b>ARR</b>	Afforestation, Reforestation and Revegetation
<b>BEF</b>	Biomass Expansion Factor
<b>BGB</b>	Below Ground Biomass
<b>CAR</b>	Corrective Action Request
<b>CC IPL</b>	Carbon Check (India) Private Limited
<b>C0<sub>2e</sub></b>	Carbon Dioxide Equivalent
<b>CL</b>	Clarification Request
<b>DBH</b>	Diameter at breast height
<b>DW</b>	Dead Wood
<b>GIS</b>	Geographical Information System
<b>HLTEC</b>	Holistic Life Transforming and Empowering Community
<b>KML</b>	Keyhole Markup Language
<b>LULC</b>	Land Use Land Cover
<b>LULUCF</b>	Land use, Land-use Change, and Forestry
<b>DVR</b>	Draft Verification Report
<b>FA</b>	Final Approval
<b>FAR</b>	Forward Action Request
<b>FVR</b>	Final verification Report
<b>GHG</b>	Greenhouse gas(es)
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>ID</b>	Identity proof
<b>IR</b>	Internal resource
<b>MP</b>	Monitoring Period
<b>MR</b>	Monitoring Report
<b>PAI</b>	Project Activity Instance
<b>PD</b>	Project Design
<b>PP</b>	Project Proponent
<b>QC/QA</b>	Quality control /Quality assurance

<b>SOC</b>	Soil Organic Carbon
<b>TA</b>	Technical Area
<b>TR</b>	Technical Review
<b>VVB</b>	Validation & Verification Body
<b>VVS</b>	Validation and Verification Standard
<b>VCS</b>	Verified Carbon Standard
<b>VCU</b>	Verified Carbon Unit

## APPENDIX 03: SUPPORTING DOCUMENTS

Sr. No.	Documents	Reference
/01/	<b>VCS Joint PD &amp; MR</b> - VCS_PDMR_09JULY2019_16DECEMBER2024	- Version 1.2, dated 26 <sup>th</sup> June 2025 Version 1.3, dated 20 <sup>th</sup> November 2025
/02/	<b>GHG calculation sheets:</b> - EX ante 3570 Grouped 20062025 - EX ante 3570 PAI-1 20062025 - EX Post 3570 20062025 - Winrock_SamplePlot_Calculator_3570	Version 1.0, dated 20 <sup>th</sup> June 2025
/03/	<b>Non-permanence risk report and supporting references</b> <ol style="list-style-type: none"> <li>i. AFOLU-Non-Permanence-Risk-Report-Calculation</li> <li>ii. Financial Viability</li> <li>iii. VCS_NPR_REP_3570_7_9_2019_12_16_2024</li> <li>iv. Fire risks</li> <li>v. Geological risk</li> <li>vi. Impact Assesment report</li> <li>vii. NAPCC_202431712491005_202430806345998-202409120704175519</li> <li>viii. Pest and disease risk</li> <li>ix. Expenses of bamboo plantation</li> <li>x. AFOLU_NPRT_Notes_3570</li> <li>xi. CVs of project implementation &amp; monitoring team</li> </ol>	
/04/	<b>Raw data</b>	-

	- Bamboo Data 3570 Final	
/05/	<p><b>Proof of land and carbon ownership (Commercially sensitive)</b></p> <p><b>Contractual agreement between PP and farmer</b></p> <ul style="list-style-type: none"> <li>- 5 Plots VVB visit agreements</li> <li>- Agreements letter with farmer documents from 138 to 210</li> <li>- Agreements letter with farmer documents from 211 to 261</li> <li>- Agreements letter with farmer documents from 262 to 463</li> <li>- Agreements letter with farmer documents from 464 to 536</li> <li>- Agreements letter with farmer documents from 537 to 547</li> <li>- Agreements letter with farmer documents from 803 to 828</li> <li>- Agreements letter with farmer documents under 137</li> <li>- Agreements with Farmer documents 138 to 210</li> <li>- Agreements with farmer documents 262 to 463</li> <li>- Agreements with farmer documents 803 to 828</li> </ul> <p><b>Contractual agreement between PP and implementation partner</b></p> <ul style="list-style-type: none"> <li>- Carbon_Revenue sharing_Service A VCS 3570 HLTEC - signed</li> </ul>	-
/06/	<p><b>Double counting</b></p> <p>Double_Counting_Declaration_3570</p>	-
/07/	<b>Start date and sapling distribution</b>	-

	<ul style="list-style-type: none"> <li>- Photographs</li> <li>- Nursery bill</li> <li>- Sapling Distribution Register 3570 (2019-2022)</li> </ul>	
/08/	<p><b>Grievance records</b></p> <ul style="list-style-type: none"> <li>- Grievance Register 3570</li> <li>- Grievance_Contact Sheet_VCS3570</li> </ul>	-
/09/	<p><b>Maps and Shapefiles</b></p> <ul style="list-style-type: none"> <li>- Canopy Cover data</li> <li>- PAI-1 KML File 3570</li> <li>- Project Boundary PAI 1 3570</li> <li>- Land use Land Cover data</li> </ul>	
/10/	<p><b>Forest &amp; Non-Forest Analysis Report</b></p> <ul style="list-style-type: none"> <li>- Forest Non Forest 2009</li> <li>- Forest Non Forest 2019</li> <li>- Land use Land Cover Analysis Report</li> <li>- LULC 2009</li> <li>- LULC 2019</li> <li>- Study area map</li> <li>- NDVI analysis</li> </ul>	-
/11/	<p><b>Baseline &amp; Additionality</b></p> <ul style="list-style-type: none"> <li>- Participatory Rural Response Report 3570</li> </ul>	-
/12/	<p><b>SDG</b></p> <ul style="list-style-type: none"> <li>- Detail Training Report</li> <li>- Employment Generated through-3570</li> <li>- Salary records</li> </ul>	-
/13/	<p><b>Project Operation and Management</b></p> <ul style="list-style-type: none"> <li>- SOP For MRV</li> </ul>	-

	<ul style="list-style-type: none"> <li>- Project Management Manual</li> <li>- Project Implementation Plan 3570</li> </ul>	
/14/	<p><b>Stakeholder Consultation</b></p> <ul style="list-style-type: none"> <li>- Detailed Local Stakeholder Consultation Report_3570</li> <li>- LSC ATTENDANCE SHEET-03-05-2022</li> <li>- LSC ATTENDANCE SHEET-18-06-2020</li> <li>- LSC Meetings and Training Photographs</li> </ul>	-
/15/	<p><b>Soil type</b></p> <ul style="list-style-type: none"> <li>- Soil type map</li> </ul>	
/16/	<p><b>Internal Policies</b></p> <ul style="list-style-type: none"> <li>- Code Of Conduct &amp; HR Policies HLTEC</li> <li>- Code of Conduct (Infinite Enviromental Solutions Limited)</li> <li>- POSH (Infinite Limited)</li> </ul>	-
/17/	<p><b>Others</b></p> <ul style="list-style-type: none"> <li>▪ Allometric equation reference: <u><a href="#">Allometric equations for estimating the aboveground biomass of a 14-year-old bamboo plantation at Moeswe Research Station, Myanmar</a></u></li> <li>▪ Web references for reasonable level of assumptions <ul style="list-style-type: none"> <li>- <u><a href="https://www.researchgate.net/profile/Kishor-Prasad-Bhatta/publication/358116635_INBAR_Working_Paper_Technical_Paper_Ecosystem_Services_From_Bamboo_Forests_Key_Findings_Lessons_Learnt_And_Call_For_Actions_From_Global_Synthesis/links/61f0b1be5779d35951d47a35/INBAR-Working-Paper-Technical-Paper-Ecosystem-Services-From-Bamboo-Forests-Key-Findings-Lessons-Learnt-And-Call-For-Actions-From-Global-Synthesis.pdf">https://www.researchgate.net/profile/Kishor-Prasad-Bhatta/publication/358116635_INBAR_Working_Paper_Technical_Paper_Ecosystem_Services_From_Bamboo_Forests_Key_Findings_Lessons_Learnt_And_Call_For_Actions_From_Global_Synthesis/links/61f0b1be5779d35951d47a35/INBAR-Working-Paper-Technical-Paper-Ecosystem-Services-From-Bamboo-Forests-Key-Findings-Lessons-Learnt-And-Call-For-Actions-From-Global-Synthesis.pdf</a></u></li> <li>- P. Shanmughavel, K. Francis Above ground biomass production and nutrientdistribution in growing bamboo (Bambusa bambos (L) Voss) Biomass Bioenergy, 10 (1996), pp. 383-391</li> <li>- Rawat, R.S., Arora, G., Rawat, V.R.S., Borah, H.R., Singson, M.Z., Chandra, G., Nautiyal, R. and Rawat, J. (2018). Estimation of Biomass and Carbon Stock of Bamboo Species through Development of Allometric Equations. Indian Council of Forestry Research and Education, Dehradun, INDIA</li> </ul> </li> <li>▪ Web references for conditions prior to project</li> </ul>	

	<ul style="list-style-type: none"> <li>- <a href="#">What is the climate in Assam? - Geographic FAQ Hub: Answers to Your Global Questions</a></li> <li>- <a href="#">Climate Assam: Temperature, climate graph, Climate table for Assam</a></li> <li>- <a href="#">Assam's Forests on the Brink: Urgent Action Needed to Prevent Environmental Collapse</a></li> <li>- <a href="#">Hydrological Data   Assam Water Research and Management Institute Society (AWRMIS)   Government Of Assam, India</a></li> <li>- <a href="#">Hydrological Data   Water Resources   Government Of Assam, India</a></li> <li>- <a href="#">land policy 2019 Corrected.pmd</a></li> <li>- <a href="#">World Bank Document</a></li> <li>- <a href="#">Managing woody bamboos for carbon farming and carbon trading - ScienceDirect</a></li> <li>▪ Others             <ul style="list-style-type: none"> <li>- <a href="https://www.researchgate.net/profile/Aniket-Gaikwad-6/publication/358208993_Effect_of_different_bamboo_species_on_soil_properties_grown_on_Entisol_of_semi-arid_climate/links/640e1c1d315dfb4cce7254fc/Effect-of-different-bamboo-species-on-soil-properties-grown-on-Entisol-of-semi-arid-climate.pdf">https://www.researchgate.net/profile/Aniket-Gaikwad-6/publication/358208993_Effect_of_different_bamboo_species_on_soil_properties_grown_on_Entisol_of_semi-arid_climate/links/640e1c1d315dfb4cce7254fc/Effect-of-different-bamboo-species-on-soil-properties-grown-on-Entisol-of-semi-arid-climate.pdf</a></li> <li>- <a href="#">India Biodiversity Portal</a></li> <li>- <a href="https://fsi.nic.in/isfr-2021/chapter-6.pdf">https://fsi.nic.in/isfr-2021/chapter-6.pdf</a></li> <li>- <a href="https://www.globalforestwatch.org/dashboards/country/IND/4/?map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D">https://www.globalforestwatch.org/dashboards/country/IND/4/?map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D</a></li> <li>- IPCC 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: <a href="#">Publications - IPCC-TFI</a></li> </ul> </li> </ul>	
/18/	<p><b>Documents reviewed during on-site inspection/interviews</b></p> <ul style="list-style-type: none"> <li>- Carbon Waiver Agreements</li> <li>- Project start evidence- Nursery Bill</li> <li>- Grievance register</li> <li>- LSC evidence-Meeting minutes and attendance sheets</li> <li>- Raw data sheets</li> <li>- Feedback forms</li> </ul>	

/19/	<p><b>Regulations &amp; Approval</b></p> <p>Indian Forest Act, 1927          THE CONSTITUTION OF INDIA (As on May, 2022)          Assam Forest Policy, 2004          Assam bamboo &amp; rattan policy, 2019          Forest Conservation Act, 1980          Forest Right Act, 2006          The Scheduled Castes and Scheduled Tribes Orders (Amendment) Act, 1976          Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act, 1989</p>	
/B01 /	<ul style="list-style-type: none"> <li>• VCS Program Guide (v4.4, dated 29 Aug 2023)</li> <li>• VCS Standard (v4.7, dated 16 Apr 2024)</li> <li>• Program Definitions (v4.5, dated 16 Apr 2024)</li> <li>• Registration &amp; Issuance Process (v4.6, dated 16 Oct 2024)</li> <li>• AFOLU Non-Permanence Risk Tool (v4.2, dated 03 May 2024)</li> <li>• VCS Validation and Verification Manual (v3.2, dated 19 Oct 2016)</li> </ul>	Others
/B02 /	<p>AR-ACM0003 “Afforestation and reforestation of lands except wetlands”  <a href="https://cdm.unfccc.int/methodologies/DB/C9QS5G3CS8FW04MYYXDFOQDPXWM4OE">https://cdm.unfccc.int/methodologies/DB/C9QS5G3CS8FW04MYYXDFOQDPXWM4OE</a></p>	V2.0 (04 <sup>th</sup> October 2013)
/B03 /	<ul style="list-style-type: none"> <li>(a) Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities (version 1.0)</li> <li>(b) Calculation of the number of sample plots for measurements within A/R CDM project activities (version 2.1.0)</li> <li>(c) Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM (version 2.1.0)</li> <li>(d) Estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities (version 1.1.0)</li> <li>(e) VCS AFOLU Non-Permanence Risk Tool (version 4.1)</li> <li>(f) Estimation of the increase in GHG emissions attributable to displacement of pre- project agricultural activities in A/R CDM project activity. (version 2.0)</li> <li>(g) Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities (Version 1)</li> <li>(h) Demonstrating appropriateness of volume equations for</li> </ul>	Others

	<p>estimation of aboveground tree biomass in A/R CDM project activities (version 1.0.1)</p> <p>(i) Demonstration of eligibility of lands for A/R CDM project activities (version 2.0)</p>	
<p>/B04 /</p>	<p><b>a) Other GHG programs:</b></p> <p><b>CDM:</b> <a href="https://cdm.unfccc.int/Projects/index.html">https://cdm.unfccc.int/Projects/index.html</a></p> <p><b>VCS:</b> <a href="https://registry.verra.org/app/search/VCS/All%20Projects">https://registry.verra.org/app/search/VCS/All%20Projects</a></p> <p><b>GSF:</b> <a href="https://registry.goldstandard.org/projects?q=&amp;page=1">https://registry.goldstandard.org/projects?q=&amp;page=1</a></p> <p><b>Plan Vivo:</b> <a href="https://www.planvivo.org/pages/category/projects?Take=28">https://www.planvivo.org/pages/category/projects?Take=28</a></p>	<p>Others</p>

# APPENDIX 04: FINDINGS LOG

## 1. Table 1. CL from this validation and verification

<b>CL</b>	01	<b>Section no.</b>	Applicability conditions	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				
<p>In compliance with Section 2.2 of the applied methodology, AR-ACM0003 (v02.0) and VCS Standard v4.7, PP shall provide the Forest/ Non- Forest Analysis Report to demonstrate the following:</p> <ul style="list-style-type: none"> <li>a) The land subject to the project activity does not fall in wetland category) (AR-ACM0003, v02.0).</li> <li>b) project areas were not cleared of existing natural non- degrading ecosystems due to the project activity (section 3.19.28, VCS Standard v4.7)</li> <li>c) No clearing or conversion took place at least 10 years prior to the proposed project start date.</li> <li>d) Soil distribution map and soil type in the project area.</li> </ul>				
<b>Project proponent response</b>				<b>Date:</b> 16/04/2025
<p>Information has been added in compliance with section 2.2 of the applied methodology AR-ACM0003 as follows:</p> <ul style="list-style-type: none"> <li>a) 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 (Refer site: Wetland portal of India, under the Ministry of Environment, Forest and Climate change, Government of India) and the same has been mentioned in section 1.14 of VCS PDMR.</li> <li>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.</li> <li>c) LULC map have been provided in section 1.14 of VCS PDMR, which is demonstrate that no clearing or conversion took place at least 10 years prior to the proposed project start date.</li> <li>d) Soil distribution map and soil type in the project area has been attached in section 1.14 of VCS PDMR.</li> </ul>				
<b>Documentation provided by Project proponent</b>				
<ul style="list-style-type: none"> <li>1. Forest Non-Forest shapefiles</li> <li>2. KML file</li> </ul>				
<b>VVB assessment</b>				<b>Date:</b> 11/05/2025

a) Based on PPs response and the GIS analysis of the KML shapefiles against the LULC data, VVB has determined that the project plots do not fall under the wetland category.

B) Based on the assessment of the SOP, LULC data for 2009 and 2019 and historical data for 10 years prior to project start date, VVB has determined that no clearing or conversion has taken place in the project area in the 10 years prior to project start date. Some pre project vegetation has been observed but has been accounted for in the revised baseline assessment provided. This has also been elaborated in the assessment of CL19 below.

c) Same as b)

d) based on the review of Soil distribution maps provided in the PD VVB confirms the project area (state) soil types are Inceptisols, Entisols and Ultisols with sandy clay loamy texture. Same was verified through the supporting literatures provided in the PD.

**CL has been closed.**

<b>CL</b>	02	<b>Section no.</b>	Section 1.5.1 of PDMR (Grouped eligibility criteria)	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				
<p>The grouped project geographic area within which future PAIs will be developed is inconsistently reported in joint PDMR as follows:                  Under grouped eligibility criteria section 1.5.1 of joint PDMR states that “the geographical areas has been carried is subjected to Assam state further will be scaled up to 4,500 hectares comprising of other states of India” and whereas in the section 1.1 mentions that “project is the grouped project activity and PP is intended to scale up to 4500 hectare for future activity instances”. PP shall clarify and ensure the consistency throughout the document.</p>				
<b>Project proponent response</b>				<b>Date:</b> 11/04/2025
<p>For PAI-1, the project boundary includes the Assam state of India. Future PAIs under the project activity will be implemented in other states of India. While the project boundary for PAI-1 is Assam state (a part of India’s geographical boundary), the overall grouped project boundary encompasses the entire country. Accordingly, the Joint PD and MR have been revised to ensure consistency throughout the document</p>				
<b>Documentation provided by Project proponent</b>				
1. PD & MR				
<b>VVB assessment</b>				<b>Date:</b> 05/05/2025
<p>In response to the finding, PP has appropriately made transparent that the project 1<sup>st</sup> instance boundary is the state of Assam, and the grouped project geographic boundary is considered as other states of India.</p>				
<b>CL has been closed.</b>				

<b>CL</b>	03	<b>Section no.</b>	PDMR section 1.9 (Start date)	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				

In line with section 3.8 of the VCS standard (v4.7):	
<p><i>“The project start date of an AFOLU project is the date on which activities that led to the generation of GHG emission reductions or removals are implemented (e.g., preparing land for seeding, planting, changing agricultural or forestry practices, rewetting, restoring hydrological functions, or implementing management or protection plans).”</i></p>	
<p>PP is requested to provide evidence for start date as per the requirements stated above. PP shall also provide incontrovertible evidence, including receipts of financial transactions, agreements and/or employment records, which proves that activities that led to the generation of GHG emission removals are implemented.</p>	
<b>Project proponent response</b>	<b>Date: 04/04/2025</b>
<p>PP has taken the start date as the first plantation activity on 09-July-2019 that is in line with the section 3.8 of the VCS standard (v4.7). Plantation nursery bills has been shared with VVB as evidence for the start date of the project activity.</p>	
<b>Documentation provided by Project proponent</b>	
1. Nursery bill	
<b>VVB assessment</b>	<b>Date: 05/05/2025</b>
<p>In line with the section 3.8 of VCS standard requirements, PP has provided the nursery bill dates 09/07/2019 confirming the buying and transportation of saplings to plant on ground, which is meeting the start date of project and confirming that this activity led to the generation of GHG emission removals from the project start date.</p>	
<b>CL has been closed.</b>	

<b>CL</b>	04	<b>Section no.</b>	Section 1.12 of PDMR	<b>Date: 24/03/2025</b>
<b>Description of CL</b>				
<p>In section 1.12 of PDMR, PP has mentioned <i>“There was no specific spacing was opted due to sloping and undulating area.”</i> PP is requested to justify the current spacing approach opted is appropriate during project implementation.</p>				
<b>Project proponent response</b>				<b>Date: 04/04/2025</b>
<p>The PP has provided a detailed justification in Section 1.12 of the VCS PDMR, explaining that the spacing of bamboo species may vary depending on altitude and slope gradient. This variability in spacing is crucial for ensuring optimal plant establishment, as it enables bamboo saplings to adapt to the site's unique topographical and environmental conditions. Consequently, the farmer has opted against a uniform spacing approach, instead adjusting the planting pattern to better align with the natural terrain and enhance overall growth and stability</p>				
<b>Documentation provided by Project proponent</b>				
1. VCS PDMR				
<b>VVB assessment</b>				<b>Date: 05/05/2025</b>
<p>VVB based on the review of updated PDMR section 1.12, concludes that due to the site's sloping, rugged, and uneven terrain, uniform spacing of bamboo saplings was impractical. The farmer adapted different spacing to align with topographical variations, enhancing soil and water conservation, promoting better plant establishment, optimizing resource use, and reducing environmental impact. This adaptive approach supports the successful execution and long-term sustainability of the species. The same supported by study “Gupta, ATUL KUMAR. "National</p>				

Bamboo Mission: A holistic scheme for development of bamboo sector in Tripura." Indian Forester 134.3 (2008): 305". The same deemed to be appropriate.

**CL has been closed.**

<b>CL</b>	05	<b>Section no.</b>	1.16& 1.17 of the PDMR (Double counting)	<b>Date:</b> 24/03/2025
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**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.

<b>Project proponent response</b>	<b>Date:</b> 05/04/2025
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The PP has now shared the duly signed double counting declaration with the VVB, which demonstrates compliance with the requirements set out in Section 3.23 of the VCS Standard, version 4.7.

**Documentation provided by Project proponent**

1. Double counting declaration

<b>VVB assessment</b>	<b>Date:</b> 05/05/2025
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VT has checked the PP provided double counting declaration letter dated 10<sup>th</sup> April 2025 and confirm that the project has not been registered and is not seeking registration under any other GHG program, not involved in any supply chain process, project has neither sought nor received another form of GHG related environmental credit, in line with the section 3.23 requirements of the VCS standard.

**CL has been closed.**

<b>CL</b>	06	<b>Section no.</b>	Section 1.18 (SDGs)	<b>Date:</b> 24/03/2025
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**Description of CL**

1. As per the PDMR template instructions; PP shall provide "A description of how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting these". Same was not transparent in the PDMR section 1.18. PP shall demonstrate the same by aligning SDGs with host country priorities.

2. PDMR section 1.18.2, For SDG target "8.3.1 Proportion of informal employment in total employment, by sector and sex" the mentioned contribution (awareness trainings) seems to be not meeting the aim of selected SDG since it was focusing employment by sector/sex. PP shall clarify and select the relevant SDG accordingly.

<b>Project proponent response</b>	<b>Date:</b> 11/04/2025
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<p>1. PP has now demonstrated how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting these in the section 1.18.1 of the PDMR by aligning SDGs with host country priorities.</p> <p>2. PP has now revised the SDG targets achieved by this project activity during the current monitoring period and contributions over project lifetime in the section 1.18.2 of the PDMR. And the evidence for supporting these SDG's have been provided to VVB.</p>	
<p><b>Documentation provided by Project proponent</b></p> <ol style="list-style-type: none"> <li>VCS PDMR,</li> <li>Master data sheet,</li> <li>Employment generation records and</li> <li>Training records</li> </ol>	
<p><b>VVB assessment</b></p>	<p><b>Date:</b> 05/05/2025</p>
<p>1. It has been checked that the section 1.18.1 of the PDMR has been made transparent by justifying that the project contributes to achieving any nationally stated SDG targets SDG 1.4, 8.5, 13.1, and 15.2 aligning with UNSDGs.</p> <p>2. VVB based on the review of the PDMR section 1.18.2 and supporting evidence "Employment Generation Record 3570" confirms that the project has benefitted 110 farmers and local communities by creating employment opportunities of 1,331 man-days through its activities such as land preparation, planting, maintenance, and project management during current monitoring period, which is meeting the aims of SDG target 8.5.1.</p>	
<p><b>CL has been closed.</b></p>	

<p><b>CL</b></p>	<p>07</p>	<p><b>Section no.</b></p>	<p>1.15 of the PDMR (Relevant laws)</p>	<p><b>Date:</b> 24/03/2025</p>
<p><b>Description of CL</b></p> <p>VVB, noted that the project activities involve "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.</p>				
<p><b>Project proponent response</b></p>				<p><b>Date:</b> 15/04/2025</p>
<p>PP has updated Section 1.15 of the VCS PDMR to alignment with VCS requirement 3.1.4. PP has provided a detailed description of the legal framework applicable to the 'Karbi Anglong Autonomous Community' as governed under the Karbi Anglong Autonomous Council Act of 1951. Also, project activities do not cause any harm to reserved forests, infringe upon tribal land rights, or violate any conservation laws that protect the cultural and environmental heritage of the Karbi people.</p>				
<p><b>Documentation provided by Project proponent</b></p> <ol style="list-style-type: none"> <li>VCS PDMR</li> </ol>				
<p><b>VVB assessment</b></p>				<p><b>Date:</b> 05/05/2025</p>
<p>It has been verified that the PP has appropriately demonstrated the project's compliance with the Sixth Schedule of the Indian Constitution, legal framework applicable to the 'Karbi Anglong Autonomous Community' as governed under the Karbi Anglong Autonomous Council Act of 1951. The same was verified through the web research <a href="#">ABOUT KARBI ANGLONG AUTONOMOUS COUNCIL::   Karbi Anglong District   Government Of Assam, India</a></p>				
<p><b>CL has been closed.</b></p>				

<p><b>CL</b></p>	<p>08</p>	<p><b>Section no.</b></p>	<p>Section 2.1.2 (Grievance redress procedure)</p>	<p><b>Date:</b> 24/03/2025</p>
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<b>Description of CL</b>	
As per the requirements of section 3.18.4 of the VCS standard, the provided information in the Grievance procedure is not transparent on the specific time period for the resolution of the grievance received. PP clarify the same.	
<b>Project proponent response</b>	<b>Date:</b> 16/04/2025
PP has now provided the grievance procedure transparently mentioning the specific timelines for the resolution of the received grievances in section 2.1.4 of the PDMR, in line with the requirements set out in section 3.18.4 of the VCS standard v4.7.	
<b>Documentation provided by Project proponent</b>	
<ol style="list-style-type: none"> <li>1. VCS PDMR</li> <li>2. Grievance record register</li> </ol>	
<b>VVB assessment</b>	<b>Date:</b> 05/05/2025
VVB upon review of PD, supporting “ <i>Grievance Redressal Contact Sheet</i> ” and “ <i>Grievance register</i> ” has verified that, in line with section 3.18.4 of the VCS standard, the Grievance procedure is made transparent on the specific time period of 10 days depending on the severity of the of each case for the resolution of the grievance received.	
<b>CL has been closed.</b>	

<b>CL</b>	09	<b>Section no.</b>	PDMR Section 2.3.5 (Benefit sharing)	<b>Date:</b> 24/05/2025
<b>Description of CL</b>				
PD MR section 2.3.5; As per the requirements of section 3.18.8 of the VCS standard, the provided information on the benefit sharing is unclear on how the benefit sharing has been done between the PP and implementation partners and then with farmers, including basis of allocation of funds to individual farmers, also clarify the benefit sharing % among the entities.				
PP shall update the PDMR with a clear, fair and equitable benefit sharing from the income generated from the project and supporting agreements for confirmation.				
<b>Project proponent response</b>				<b>Date:</b> 10/04/2025
The benefit-sharing mechanism outlined in Section 2.3.5 of the VCS PDMR has been thoroughly clarified, aligning with Section 3.18.8 of the VCS standard. Additionally, the benefit-sharing mechanism or percentage sharing is explicitly defined in the Carbon Credit Agreement between the Project Participant (PP) and the implementation partner, as well as between the implementation partner and the farmer. Due to the confidentiality of the agreement, the document containing these details has been shared exclusively with the VVB for their review and assessment.				
<b>Documentation provided by Project proponent</b>				
<ol style="list-style-type: none"> <li>1. VCS PDMR</li> <li>2. Carbon credit agreement</li> </ol>				
<b>VVB assessment</b>				<b>Date:</b> 05/05/2025
VVB has verified the randomly 63 benefit sharing agreements (carbon credit agreements), following 90/10% confidence interval of total 828 farmer agreements using RaoSoft sample calculator:				

Sample size calculator

What margin of error can you accept? <small>5% is a common choice</small>	<input style="width: 80%;" type="text" value="10"/> %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer <i>yes</i> , while 10% answer <i>no</i> , you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? <small>Typical choices are 90%, 95%, or 99%</small>	<input style="width: 80%;" type="text" value="90"/> %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer <i>yes</i> would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? <small>If you don't know, use 20000</small>	<input style="width: 80%;" type="text" value="628"/>	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? <small>Leave this as 50%</small>	<input style="width: 80%;" type="text" value="50"/> %	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 <b>More information</b> if this is confusing.
Your recommended sample size is	<b>63</b>	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.

VVB found that the agreements are transparent and fair, includes the clear benefit sharing % terms between PP, Implementation partner and Farmers, with the 40-year longevity in line with the requirement of 3.18.8 VCS standard. VVB further also checked the NOC letter for land use from the village heads, IDs and bank account details of the farmers to confirm the ownership of the project lands. Since PP considers the benefit sharing % as commercially sensitive information PP did not disclose the same in the PD section 2.3.5, however the same has been provided to VVB.

However, PD still not transparent on *“basis of allocation of funds to individual farmers”* PP shall demonstrate the same.

<b>Project proponent response</b>	<b>Date: 13/05/2025</b>
PP has now mentioned the basis of the allocation of funds to the individual farmers in section 2.3.5 of the VCS PDMR.	
<b>Documentation provided by Project proponent</b>	
VCS PDMR	
<b>VVB assessment</b>	<b>Date: 21/05/2025</b>
VVB, based on the review of the updated PD section 2.3.5, confirms that the fund allocation to individual farmers will be based on plantation size and carbon sequestration achieved during the monitoring period as per the carbon waiver agreements. The same was found to be fair and transparent mechanism for the benefit sharing.	
<b>CL has been closed.</b>	

<b>CL</b>	10	<b>Section no.</b>	Section 3.3 (project boundary)	<b>Date: 24/03/2025</b>
<b>Description of CL</b>				
As per the Table.2 of the applied methodology the emission source <i>“Burning of woody biomass”</i> is not transparent in the section 3.3 of the PDMR. PP shall clarify.				
<b>Project proponent response</b>				<b>Date: 10/04/2025</b>
PP has now transparently elaborated the emission source <i>“Burning of woody biomass”</i> As per the Table.2 of the applied methodology (AR-ACM0003) in the section 3.3 of the PDMR.				
<b>Documentation provided by Project proponent</b>				
1. VCS PDMR				
<b>VVB assessment</b>				<b>Date: 06/05/2025</b>
It has been checked by the VVB that, in line with the Table.2 of the applied methodology (AR-ACM0003) in section 3.3 of the PD, PP has demonstrated the emission source burning of woody biomass as not included since the burning woody biomass has taken place for the purpose of project plantations.				
<b>CL has been closed.</b>				

<b>CL</b>	11	<b>Section no.</b>	Section 3.5 of the PDMR (Additionality)	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				
<p>1. As per the requirements of AR-TOOL 02, Step-0: PP shall provide evidence to confirm that the incentive from the planned sale of CERs was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and/or other corporate) documentation that was available to third parties at, or prior to, the start of the project activity.</p> <p>2. Throughout the PDMR, PP mentions that “<i>The land before the implementation of the project activity was degrading shrublands owned by farmers and communities</i>”, whereas in the PDMR section 3.5.2 step.1 the pre-project land use was mentioned as “<i>cropping</i>”. PP shall clarify the inconsistency and clearly define the baseline scenario.</p> <p>3. VVB, based on the review of PDMR section 3.5.2, found that it is unclear whether the additionality has been demonstrated and assessed for the entire grouped project or the initial PAI. PP shall clarify and update the same as per the section 3.6.11 of the VCS standard requirements.</p>				
<b>Project proponent response</b>				<b>Date:</b> 04/04/2025
<ol style="list-style-type: none"> <li>1. PP has updated the section 3.5.2 of VCS PDMR as per the AR-TOOL 02. Furthermore, PP has provided the carbon credit agreement to VVB, which is clearly demonstrating the incentive of CERs.</li> <li>2. PP has made the baseline scenario consist throughout the VCS PDMR. In which clearly mentioned that baseline scenario is degraded shrubland.</li> <li>3. PP has updated the section 3.5.2 of VCS PDMR as per the section 3.6.11 of the VCS standard requirements. The baseline scenario is defined in accordance with historical land-use patterns, regulatory frameworks, and the barriers identified demonstrating the additionality in the project activity instance, ensuring that the project activities would not occur in the absence of carbon finance</li> </ol>				
<b>Documentation provided by Project proponent</b>				
1. VCS PDMR				
<b>VVB assessment</b>				<b>Date:</b> 05/05/2025
<p>1. VVB based on the review of carbon credit agreements confirms that the incentive from the planned sale of CERs was seriously considered in the decision to proceed with the project activity in line with the AR-TOOL 02 step.0 requirements.</p> <p>2. It has been checked that the baseline scenario i.e. degraded shrublands is made consistent throughout the PD. The same baseline conditions were observed during the VVB onsite inspections.</p> <p>3. In line with section 11 3.6.and 3.6.16 VCS requirements, the baseline and additionality was demonstrated for the 1<sup>st</sup> project activity instance and the same approach will be followed to demonstrate the additionality and baseline for the future grouped project instance.</p>				
<b>CL has been closed.</b>				

<b>CL</b>	12	<b>Section no.</b>	5.1 of PDMR (baseline)	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				

<p>In various sections of the VCS PDMR suggest that "The land before the implementation of the project activity was degraded shrublands owned by farmers and communities."</p> <p>However, no demonstration was provided in compliance with the "Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities," therefore the PP shall provide justification, supported by evidence, to substantiate that the project area qualifies as degraded shrublands.</p> <p>Additionally, the PP is required to justify how assuming the baseline scenario as zero, despite the project baseline scenario comprising shrublands and subsistence agriculture. Same was evident in GIS files provided.</p>	
<b>Project proponent response</b>	<b>Date: 04/04/2025</b>
<p>PP has provided the detailed description in section 3.4 of VCS PDMR as per the AR Tool- "Tool for the Identification of Degraded or Degrading Lands for Consideration in Implementing CDM A/R Project Activities". 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 for procedure III consist with the result of PRA survey. Based on the PRA survey it also indicates that degradation, primarily driven by the presence of invasive alien species followed by topsoil erosion, and biological degradation.</p> <p>PP has calculated the shrub biomass due to the presence of shrub biomass within the project boundary during the baseline period.</p>	
<b>Documentation provided by Project proponent</b>	
<ol style="list-style-type: none"> <li>1. PDMR,</li> <li>2. ER calculation sheets (Ex-post &amp; Ex-ante),</li> <li>3. PRA Summery report.</li> </ol>	
<b>VVB assessment</b>	<b>Date: 05/05/2025</b>
<p>VVB based on the review of "<i>Participatory Rural Response Report 3570</i>" confirms that the project are degraded shrublands with the invasive species, it has been also indicated that this degradation was primarily driven by the presence of invasive alien species followed by topsoil erosion, and biological degradation, thus the project is appropriately demonstrated the degradation in line with AR Tool-13 stage-II, section III clause C requirements, meeting that "<i>a reduction in plant cover or productivity due to overgrazing or other land management practices, thinning of topsoil organic layer, scarcity of topsoil litter and debris</i>". Therefore, considering baseline land use as degraded land is deemed to be valid as per the AR tool-13 requirements.</p> <p>Furthermore, since baseline lands consists of shrub cover, PP has appropriately accounted baseline carbon stocks from the shrubs in line with the AR tool014 requirements.</p> <p><b>CL has been closed based on the above assessment.</b></p>	

<b>CL</b>	13	<b>Section no.</b>	Section 5 (ER sheet- Allometric equation)	<b>Date: 24/03/2025</b>
<b>Description of CL</b>				
<p>As per the AR tool-014, Paragraph 6&amp;7 requirements,</p> <p><i>"For ex-ante estimation the allometric equation, or volume table or volume equation applied to a baseline species is selected from the following sources (the most preferred source being listed first): (a) Existing data applicable to local situation (e.g. represented by similar ecological conditions); (b) National data (e.g. from national forest inventory or national greenhouse gas (GHG) inventory); (c) "Data from neighbouring countries with similar conditions; (d) Globally applicable data".</i></p>				

*“For ex-post estimation, the allometric equation used must be demonstrated to be appropriate for the purpose of estimation of tree biomass by applying the tool “Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities”.*

VVB based on the review of ER sheets found that PP has applied the allometric equation from a study *“Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019. Allometric equations for estimating the aboveground biomass of a 14-Year-old bamboo plantation at Moeswe research station, Myanmar. Journal of Tropical Forest Research”* in the neighbouring country Myanmar, therefore PP shall demonstrate how this application meets the above-mentioned requirements (preference list) and justify the appropriateness and conservativeness.

<b>Project proponent response</b>	<b>Date: 16/04/2025</b>
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As per CDM Tool-17, Paragraph 5, for ex-ante estimation of aboveground tree biomass in the project scenario, any allometric equation can be used.

However, for ex-post estimation, as outlined in Paragraph 6, a species-specific or group-of-species-specific allometric equation derived from trees growing in edaphic-climatic conditions similar to those in the project area is considered appropriate if at least one of the following conditions is met:

- a) The equation is utilized in the national forest inventory or GHG inventory of the host country.
- b) The equation has been employed in the commercial forestry sector of the host country for over ten years.
- c) The equation was developed using a dataset of at least 30 sample trees, with a coefficient of determination ( $R^2$ ) of not less than 0.85.

Since the edaphic-climatic conditions of the project region and Myanmar are similar (please refer the table below), the developed equation is applicable. Furthermore, the equation was derived from harvesting (n) of more than 30 culms, and the model achieved an  $R^2$  value of 0.975, significantly exceeding the required threshold of 0.85. Therefore, the developed allometric equation fully complies with condition (c) under CDM Tool-17, ensuring its validity and applicability for estimating aboveground biomass in the project area.

The edaphic-climatic comparison of project region:

S. N.	Parameter	Unit	Project region	Myanmar
1	Climate	Zone	Subtropics to Tropics Subtropics to Tropics	Subtropics to Tropics
2.	Daytime maximum temperature	°C	30.50	32.90
3	Daily low temperature	°C	20.90	21.30
4	Humidity	%	75	74
5	Precipitation	mm	2,164	2,208
6	Hours of Sunshine	hours	1,971	2,482
7.	Soil	Unit less	The North Eastern region (NER) of India has the largest stretches	In Myanmar, approximately 30% of soil samples have a pH below 5.5, indicating acidity.

			of acid soils. It is estimated that approximately 91% soils are acidic, and nearly 65% soils are suffering from strong acidity (pH < 5.5) in NE India	This acidity is particularly prevalent in high rainfall areas, such as mountainous regions, where phosphorus fixation and potential toxicity from aluminium, manganese, and iron can occur.
8	Major Crop	Unit Less	Rice, Tea	Rice

The same correction has also been carried in PDMR.

**Documentation provided by Project proponent**

1. VCS PDMR
2. ER calculation sheets (Ex-post & Ex-ante)

**VVB assessment**

**Date:** 06/05/2025

VVB based on the review of study “*Puangchit, L., Hnin, S.M. and Sungkaew, S., 2019*”, confirms that this equation application is meeting the requirements of ARTool17 &14. As per CDM Tool-17, Paragraph 6, a species-specific allometric equation is valid for ex-post biomass estimation if certain conditions are met. Given the similar edaphic-climatic conditions between the project region and Myanmar <https://www.worlddata.info/climate-comparison.php?r1=burma&r2=in-north-eastern> , and the fact that the equation was developed using over 30 culms with an R<sup>2</sup> value of 0.975 (well above the 0.85 threshold), which is satisfying the paragraph.6 condition (c) of the AR TOOL-17 requirements. Therefore, the equation applied is deemed to be appropriate and applicable for estimating aboveground biomass in the project activity.

The demonstration on the same are not reflected in the PDMR (on conditions of paragraph.6 of TOOL17).

**Project proponent response**

**Date:** 13/05/2025

PP has now provided justifications in Sections 3.2 and 5.2 of the VCS PDMR for the equation used to estimate above-ground biomass in this project, in accordance with the requirements outlined in AR-CDM Tool 17.

**Documentation provided by Project proponent**

VCS PDMR

**VVB assessment**

**Date:** 21/05/2025

VVB based on the review of the updated PDMR section 5.2 confirms that the PP has appropriately demonstrated that the project meets the on conditions of paragraph.6 of AR-TOOL17 requirements. Same has been assessed above.

**CL has been closed.**

<b>CL</b>	14	<b>Section no.</b>	<b>1.17 of PDMR, land ownership &amp;NPRT</b>	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				
<p>1. PP shall provide evidence in compliance with the VCS AFOLU Non-Permanence Risk Tool (v4.0) which states, “<i>Evidence may include survey responses, correspondence with relevant land title agencies/departments or evidence that project has secured title insurance.</i>”</p> <p>In line with the section 3.7.1 of the VCS standard (v4.7), the contract agreements signed between farmers (either self-owned private lands or leased lands) who have the right to authorize Project Proponent as a representative of the project and Infinite Environmental Solutions Limited is missing.</p>				

The project description shall be accompanied by one or more of the following types of evidence establishing project ownership accorded to the project proponents addressing the requirements as applicable and as laid out in Section 3.7.1 of VCS Standard (v4.7).

- Furthermore, the contractual agreement in-between Infinite Environmental Solutions Limited and the Implementation partner are also missing.

As per section 3.19.22 of the VCS Standard v4.7, PP is to provide information on benefit sharing mechanism since the project is implemented on farmer's land and provide the supporting evidence for the same.

<b>Project proponent response</b>	<b>Date:</b> 16/04/2025
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1. PP has provided the details regarding the project ownership, customary land rights and legal ownership of the project land in the section 1.8 of PDMR in line with the requirements set out in the section 3.7 of the VCS standard v4.7. PP has provided the farmer agreements as evidence for the same in accordance with the VCS AFOLU Non-Permanence Risk Tool, v4.2.

PP, Infinite Environmental Solutions Limited holds the exclusive rights to the carbon credits generated from this project. The benefit-sharing mechanism or percentage sharing is explicitly defined in the Carbon Credit Agreement between the Project Participant (PP) and the implementation partner, as well as between the implementation partner and the farmer.

PP has shared the farmer agreements between the implementation partner (Holistic Life Transforming and Empowering Community) and the farmers and the contractual agreement in-between PP (Infinite Environmental Solutions Limited, IESL) and implementation partner (Holistic Life Transforming and Empowering Community, HLTEC).

<b>Documentation provided by Project proponent</b>
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1. Farmer agreements,
2. Agreement between PP and implementation partner.

<b>VVB assessment</b>	<b>Date:</b> 07/05/2025
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VVB has verified the carbon credit agreements and VVB found that the agreements are transparent and fair, includes the clear benefit sharing % terms between PP, Implementation partner and Famers, with the 40-year longevity in line with the requirement of 3.18.8 VCS standard. VVB, further also checked the NOC letter for land use from the village heads (grants rights as per the 6<sup>th</sup> schedule of Indian constitution), IDs and bank account details of the farmers and confirmed the farmer's land ownership of the project lands. The rights of project ownership were transferred to implementation partner HLTEC from farmers through the carbon credit agreements and then HLTEC transferred the project rights to PP (Infinite), through an agreement holding the exclusive rights to the carbon revenue generated from this project. Therefore, it has been confirmed that the project ownership is in line with section 3.7 of the VCS standard v4.7 requirements.

**CL has been closed.**

<b>CL</b>	15	<b>Section no.</b>	3.19.25 to 3.19.28 of VCS Standard V4.7 (environmental safeguards)	<b>Date:</b> 24/03/2025
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<b>Description of CL</b>
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In accordant with section 3.19.25 to 3.19.28 of VCS Standard V4.7, the PP is requested to provide evidences pertaining to ensure that the *project shall not have negative impacts on biodiversity and ecosystems, shall not impact the habitats for rare, threatened, or endangered species, no introduction of non-native monocultures, including demonstration that the project activity restores the project area to a native ecosystem type represented in the same ecoregion as the project.* Such

demonstrations shall include use of remote sensing, aerial imagery, modeling, or other relevant literature. The same was not transparent.			
<b>Project proponent response</b>			<b>Date:</b> 15/04/2025
<p>The project activity entails the plantation of <i>B. tulda</i>, a native bamboo species, within Assam, the state of India. Importantly, the project does not involve the introduction of any non-native or invasive species. As an indigenous species, <i>B. tulda</i> is well-suited to the local ecosystem and poses no threat to the habitats of rare, threatened, or endangered species. On the contrary, its cultivation is expected to contribute to the ecological restoration of the area by supporting the regeneration of a native ecosystem type. To support these claims, evidence has been provided demonstrating the positive impact of bamboo plantations on overall ecosystem health:</p> <ol style="list-style-type: none"> <li>1. <a href="https://sbda.assam.gov.in/portlets/characteristics-of-bamboo#:~:text=Government%20Of%20Assam%20State%20Bamboo%20Development%20Agency%2C%20Assam&amp;text=(iii)%20Bamboo%20shoots%20of%20some,an%20atmospheric%20and%20soil%20purifier.">https://sbda.assam.gov.in/portlets/characteristics-of-bamboo#:~:text=Government%20Of%20Assam%20State%20Bamboo%20Development%20Agency%2C%20Assam&amp;text=(iii)%20Bamboo%20shoots%20of%20some,an%20atmospheric%20and%20soil%20purifier.</a></li> <li>2. <a href="https://www.researchgate.net/profile/Kishor-Prasad-Bhatta/publication/358116635_INBAR_Working_Paper_Technical_Paper_Ecosystem_Services_From_Bamboo_Forests_Key_Findings_Lessons_Learnt_And_Call_For_Actions_From_Global_Synthesis/links/61f0b1be5779d35951d47a35/INBAR-Working-Paper-Technical-Paper-Ecosystem">https://www.researchgate.net/profile/Kishor-Prasad-Bhatta/publication/358116635_INBAR_Working_Paper_Technical_Paper_Ecosystem_Services_From_Bamboo_Forests_Key_Findings_Lessons_Learnt_And_Call_For_Actions_From_Global_Synthesis/links/61f0b1be5779d35951d47a35/INBAR-Working-Paper-Technical-Paper-Ecosystem</a></li> </ol> <p>On the other hand, based on project boundary shapefile, project boundary does not overlap the boundary of National Park, Wildlife Sanctuary and other national and state designed protected area i.e., project activity does not adversely affect such habitats.</p>			
<b>Documentation provided by Project proponent</b>			
<ol style="list-style-type: none"> <li>1. VCS PDMR</li> <li>2. Project boundary shapefile</li> </ol>			
<b>VVB assessment</b>			<b>Date:</b> 07/05/2025
<p>VVB based on the review of PD and supporting weblinks <a href="#">Bambusa tulda Roxb.   Plants of the World Online   Kew Science</a>, confirms that the project involves planting of <i>Bambusa tulda</i>, a native species in Assam, without introducing non-native or invasive species. As an indigenous bamboo, it supports local ecosystems and does not threaten rare, threatened, or endangered species. Instead, it aids ecological restoration by promoting native habitat regeneration, as supported by relevant studies <a href="#">Characteristics of Bamboo   State Bamboo Development Agency, Assam   Government Of Assam, India</a>. Additionally, the project boundary does not consist of areas with the habitats for rare, threatened, or endangered species and further does not overlap with any National Parks, Wildlife Sanctuaries, or other protected areas, ensuring no adverse impacts on such habitats. Therefore, it has been confirmed that project is in line with sections 3.19.25 to 3.19.28 of VCS Standard V4.7 requirements.</p>			
<b>CL has been closed.</b>			
<b>CL</b>	16	<b>Section no.</b>	Harvesting cycle
<b>Date:</b> 24/03/2025			
<b>Description of CL</b>			
<p>In Various sections of PDMR, PP has mentioned about harvesting. Additionally, In Project management plan, harvesting cycle is mentioned as “Upon maturation at 5th year, the bamboo clumps are subjected to sustainable thinning.” However, PP shall elaborate on harvesting/thinning activity, amount of biomass that will be harvested, harvesting interval etc.</p>			
<b>Project proponent response</b>			<b>Date:</b> 07/04/2025
<p>PP has detailed the harvesting and thinning activities in Section 1.12 of the VCS PDMR. In this section, PP clearly demonstrates that harvesting begins from the fifth year onward. According to the definition of harvesting activity in the VCS Program Definition v4.5, the project qualifies for LTA. Due to harvesting, 20% of the biomass is removed; therefore, PP has quantified the LTA for the project accordingly.</p>			

<b>Documentation provided by Project proponent</b>	
1. ER calculation sheets	
<b>VVB assessment</b>	<b>Date:</b> 07/05/2025
<p>VVB, based on the review of PD and ER sheets assessed that the PP has provided a detailed description of the thinning activity in Section 1.12 of the VCS PDMR, which clearly states that thinning activity is considered focusing on the older, overmature culms and implemented from the 5th year onwards. Moreover, the selective thinning of matured culms stimulates growth and increase carbon stocks, the same was clearly demonstrated in the 1.12 of the PD in line with the section 3.2.30 of the VCS standard requirements.</p> <p>However, no selective thinning of 20% has been not accounted in the ER sheet calculations from 5th year. PP shall account the same in ER sheet. The PP must ensure to update the ERR calculation sheet to account for the thinning activities and updates all relevant sections in the PD.</p>	
<b>Project proponent responseE</b>	<b>Date:</b> 13/05/2025
PP clearly demonstrates that harvesting begins from the fifth year onward. PP has now accounted the ERs considering thinning of 20% in ER sheet and same has been updated in the VCS PDMR.	
<b>Documentation provided by Project proponent</b>	
1. ER sheet 2. VCS PDMR	
<b>VVB assessment</b>	<b>Date:</b> 22/05/2025
<p>VVB based on the review of the updated ER sheets and PD confirms that the project has appropriately accounted for 20% of thinning from the 5<sup>th</sup> year of plantations in line with section 3.2.28 of the VCS standard requirements.</p> <p><b>CL has been closed.</b></p>	

<b>CL</b>	17	<b>Section no.</b>	ER sheets	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				
<p>Upon review of Ex-ante and Ex-post sheets, VVB has noted following inconsistencies:</p> <ol style="list-style-type: none"> <li>Baseline is considered as zero whereas, as per VCS PDMR, project is implanted on degraded shrublands. PP shall recalculate project baseline emissions considering shrublands as baseline as per the requirements of section 5.4 of the applied methodology.</li> </ol> <p>Further to be noted that as per the AR-tool-14 requirements, <i>“For the strata with a shrub crown cover of greater than 5 per cent, carbon stock in shrubs is estimated as per paragraph 61”</i> of the tool.</p> <p>- In addition to this, during the onsite inspections VVB observed the baseline vegetation in the project area. PP shall clarify how the requirements of para 11 as per AR tool-014 is ensured.</p> <ol style="list-style-type: none"> <li>PP is requested to clarify the formula used for tab “summary”- column E, VVB requests clarification regarding the values taken as no. days such as 190, 175 and formula applied.</li> </ol>				
<b>Project proponent response</b>				<b>Date:</b> 16/04/2025

<p>PP has corrected the Ex-ante and Ex-post and is now consistent all over the calculation sheets:</p> <ol style="list-style-type: none"> <li>1. PP has recalculated the baseline emissions in accordance with Section 5.4 of the applied methodology, taking into account the presence of shrubland within the project area. As per the guidance provided in AR-Tool-14, specifically paragraph 61, the carbon stock in strata with a shrub crown cover greater than 5% has been duly estimated.</li> <li>2. PP has calculated the vintage-wise (calendar year) estimated ERs in “summary” tab, column E, as well in column C &amp; D. The ERs generated for any given year of growth through the plantation are split according to the calendar year. For instance, the ERs for the 2nd year of the project activity (i.e., from 09-July-2020 to 08-July-2021, as per the project start date) are distributed across two vintages; the first from 09-July-2020 to 31-December-2020 (176 days) and the second from 01-January-2021 to 08-July-2021 (189 days) and the total no of days are 365 (one complete year). Therefore, the values taken as no of days used in the calculation (e.g., 190 &amp; 175) and the applied formula are justified.</li> </ol>	
<p><b>Documentation provided by Project proponent</b></p> <ol style="list-style-type: none"> <li>1. VCS PDMR,</li> <li>2. ERR Sheets</li> </ol>	
<p><b>VVB assessment</b></p>	<p><b>Date:</b> 07/05/2025</p>
<p>1. VVB based on the review of PD and verification of ER sheets, confirms that PP has recalculated baseline emissions as per Section 5.4 of the applied methodology requirement, considering shrubland within the project area. In line with AR-Tool-14, paragraph 61, carbon stock in strata with shrub crown cover over 5% has been appropriately estimated.</p> <p>2. VVB based on the review of PD and verification of ER sheets, confirms that the PP has calculated vintage-wise estimated ERs in the “summary” tab (columns C, D, and E) by splitting annual ERs across calendar years. For example, ERs for the second project year (09-Jul-2020 to 08-Jul-2021) are divided between two vintages: 176 days in 2020 and 189 days in 2021, totalling 365 days. Thus, the use of day counts (e.g., 190 and 175) and the applied formula is justified.</p>	
<p><b>CL has been closed.</b></p>	

<p><b>CL</b></p>	<p>18</p>	<p><b>Section no.</b></p>	<p>Supporting documents</p>	<p><b>Date:</b> 24/03/2025</p>
<p><b>Description of CL</b></p> <p>The following list of documents are missing based on the VCS Standard v4.7 and the applied methodology:</p> <ol style="list-style-type: none"> <li>1. Supporting documents for carbon calculations including all the assumptions i.e., raw sampling records.</li> <li>2. Evidence to demonstrate that the project increase carbon sequestration by establishing, increasing, or restoring vegetative cover (forest or non-forest) through the planting, sowing, or human-assisted natural regeneration of woody vegetation.</li> <li>3. Evidence to demonstrate that the project activity also complies with the applicability conditions of the tools contained within the methodology and applied by the project activity.</li> <li>4. Project implementation schedule/ plan for future plantation for the PAIs of the grouped project</li> <li>5. Capacity building/Training manual, plan &amp; records</li> <li>6. Pest Control and Prevention Policy, Fire Plans, any training or mitigation measures implemented.</li> <li>7. Employment data and salary slips. Total no of employees employed.</li> <li>8. Master of farmers details (project clump data parameter).</li> </ol>				
<p><b>Project proponent response</b></p>				<p><b>Date:</b> 16/04/2025</p>
<p>All the documents required as per the VCS Standard v4.7 and the applied methodology have been shared with VVB:</p>				

1. Master data sheet, sapling distribution record and PSP monitoring records have been shared as evidence for ERs calculations (both, Ex-Ante and Ex-Post).
2. Forest Non-Forest maps (for 2009 and 2019), LULC maps (for 2009 and 2019), LULC analysis report, KML files have been shared as evidence to demonstrate that the project increase carbon sequestration by establishing, increasing, or restoring vegetative cover through the planting, sowing, or human-assisted natural regeneration of woody vegetation.
3. PP has shared the following documents as evidence to support applied methodology and tool:
  - kml files for each and every plot, kml file for the project boundary and LULC analysis report as supporting evidence for applied methodology AR-ACM0003,
  - Canopy cover data as evidence for baseline scenario for tool 2,
  - Winrock sample plot calculator for tool 03,
  - ER sheets (Ex-ante for PAI-1 & Grouped and Ex-post) for tool 08, 12, 14, 15, & 16
  - LULC maps (for 2009 and 2019), LULC analysis report, Forest Non-Forest maps (for 2009 and 2019) and Canopy cover data as evidences to demonstrate the eligibility of land as per tool 19
  - Non permanence risk calculator, NPR report, NPR notes, financial viability, impact assessment report, SOP, management plan and other risk reports (fire, geological, pest & disease and extreme weather) as supporting evidences for Non-Permanence Risk Tool.
4. Project implementation plan for future plantations of the grouped project for next instances has been shared with VVB.
5. In this project activity capacity building/Trainings has been conducted to the stakeholders, as evidence of the same, PP has shared training report, and other records.
6. PP has shared project management plan which includes pest control and prevention policy, fire plans, and other trainings.
7. The total no of employment generated has been provided in the table in section 1.18.2 of the PDMR, employment generation records have been shared with VVB. Additionally, the salary slips of the permanent staff of this project activity has also been provided.
8. Master data sheet, and PSP monitoring records have been shared with VVB.

**Documentation provided by Project proponent**

1. Master data sheet.
2. Sapling distribution record book,
3. PSP monitoring data sheet,
4. Forest Non-Forest maps (for 2009 and 2019),
5. LULC maps (for 2009 and 2019),
6. LULC analysis report,
7. KML files,
8. Canopy cover data,
9. Winrock sample plot calculation sheet,
10. ER sheets (Ex-ante for PAI-1 & Grouped and Ex-post)
11. Non permanence risk calculator,
12. NPR report,
13. NPR notes,
14. Financial viability,
15. Impact assessment report,
16. SOP,
17. Management manual,
18. Other risk reports (fire, geological, pest & disease and extreme weather),
19. Project implementation plan for future instances,
20. Training report,
21. Training photographs,
22. Training attendance sheet,

23. Employment generation records, 24. Salary slips.	
<b>VVB assessment</b>	<b>Date: 09/05/2025</b>
<p>VVB confirms that the above-mentioned documents are provided for VVB review,</p> <ol style="list-style-type: none"> <li>1. Master data sheet, Sapling distribution record book, PSP monitoring data sheet were reviewed by VVB. VVB confirms the monitored data, plantation distribution by project implementation partners.</li> <li>2. Refer CL01 and CL19 assessments.</li> <li>3. Refer CL01 and CL19 assessments. NPR report, NPR notes, SOPs, management plan and Risk reports are reviewed by VVB. It was confirmed that PP has provided relevant evidences pertaining to Non-Permanence Risk Tool.</li> <li>4. PP has provided the project implementation plan for review. It was noted that PP has planned total 4500 ha combining both 1<sup>st</sup> PAI and 2<sup>nd</sup> PAI.</li> <li>5. Based on the review of the training report, and other records VVB confirms, the HLTEC training helps farmers manage bamboo plantations for carbon credit projects by teaching site &amp; species selection, planting techniques, and ongoing care. It enhances skills, efficiency by empowering communities through training.</li> <li>6. The Project Management Manual outlines pest control, fire prevention, and training measures for bamboo plantations. It includes regular monitoring, biological pest control, firebreaks, weather tracking, emergency response training, and safety protocols to protect plantations. VVB confirms that evidence provided is valid and appropriate.</li> <li>7. VVB reviewed seasonal employment records and salary records. VVB confirms that evidence provided is valid and appropriate.</li> <li>8. VVB has reviewed PSP monitoring data including PSP farmer data. VVB confirms that evidence provided is valid and appropriate.</li> </ol> <p><b>CL has been closed.</b></p>	

<b>CL</b>	19	<b>Section No.</b>	GIS files	<b>Date: 24/03/2025</b>
<b>Description of CL</b>				
<ol style="list-style-type: none"> <li>1. PP is requested to provide LULC data with clearly defined classes so the VVB can conduct a GIS analysis against the given plots.</li> <li>2. Based on the assessment of the plots against the historical imagery data on google earth, VVB has observed significant vegetation inside the plots from 01/2010 which falls within 10 years prior to the claimed project start date of July 2019 (images added below). Based on this observation, PP is requested to provide a justification for a Zero baseline considered for the project.</li> </ol>				



01/2010



12/2016

3. As described in the VCS Standard, item “3.11.2 The spatial extent of the project shall be clearly specified...”, which is not evident when analysing the KML file of the farms. The boundaries of the farms appear to have been “drawn” on the image, with no clear boundaries in the field. This situation can generate several types of conflicts and make verification and future monitoring difficult. If there were well-defined physical boundaries (fences, rivers, roads, etc.) between the properties, there would be no empty spaces between them, as can be seen in the figures below.



Figure 1: Note that the farm boundaries do not follow any physical boundary, but were apparently made just under the image.

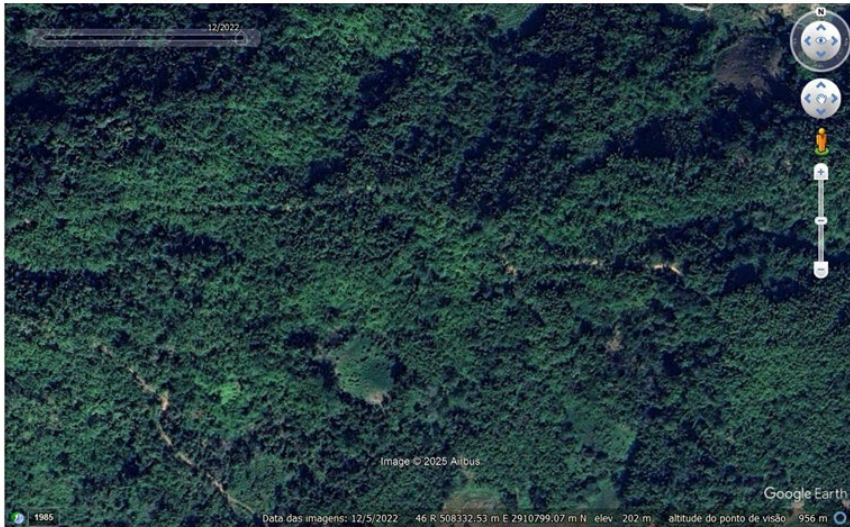


Figure 2: Same image as Figure 1, but without the farm boundaries, highlighting the lack of physical boundaries.

4. Before July 9, 2019 (Start Date), most of the farms had bamboo clumps (figures below), therefore, it is necessary to analyse whether the existing biomass was included in the calculation to define the baseline, as established in AR-TOOL14, items 5 and 6.

- Further PP shall recheck all the project plots for the existing plantations before the project start date and exclude accordingly.



Figure 3: Image from 11/22/2018, before the start date, showing the existence of bamboo and other native vegetation inside the farms.

b. During the review of shapefiles/project's KMLs VVB has drawn a sample of random sample of 25 plot files. The result of this review reveals the following observations:

- Plot "Dibising kramsa"- existing vegetation found in 2013-2018 prior the project start date. PP shall clarify.



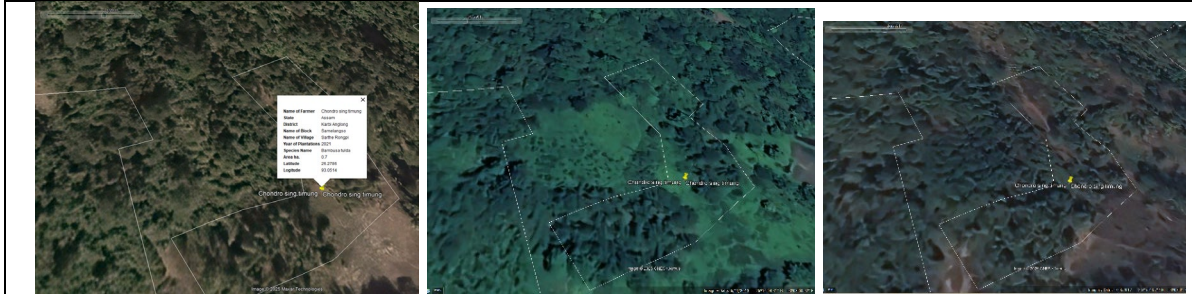
Plot: Chondro sing timung (Sarthe Rongpi village, Samelangso block)

Year of plantation: 2021

Area: 0.7 Ha

Historical assessment Year: 2010, 2012, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



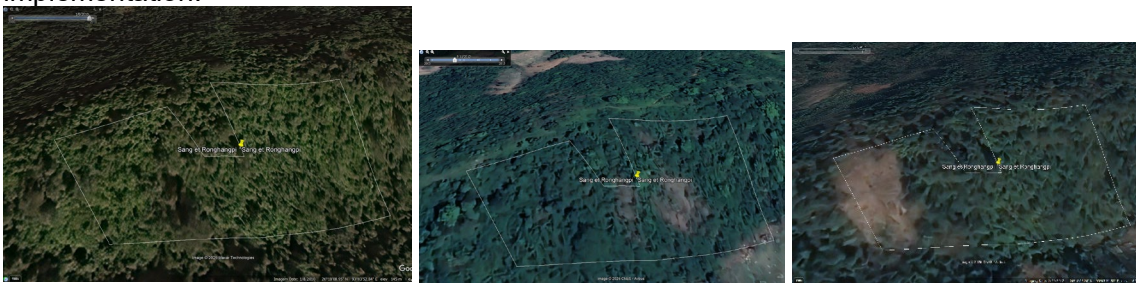
Plot: Sang et Ronghangpi (Bitakabi gaon village, Samelangso block)

Year of plantation: 2019

Area: 1.64 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



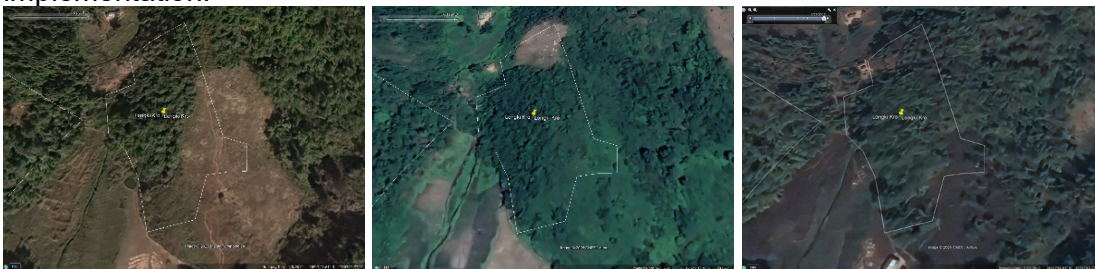
Plot: Longki Kro (Habe Kro village, Samelangso block)

Year of plantation: 2020

Area: 1.1 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



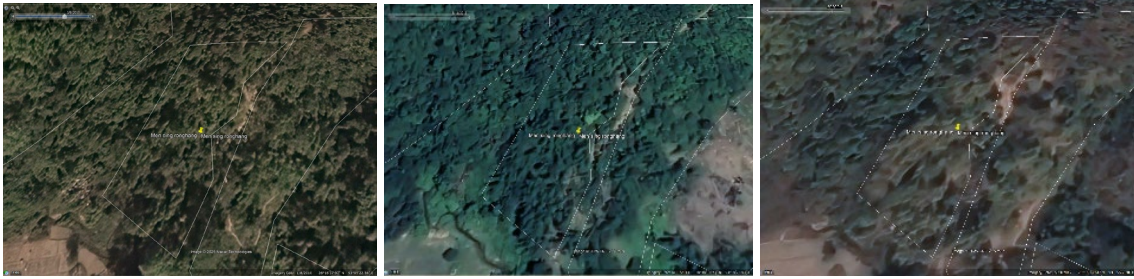
Plot: Men sing ronghang (Pandit taro village, Samelangso block)

Year of plantation: 2020

Area: 0.58 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



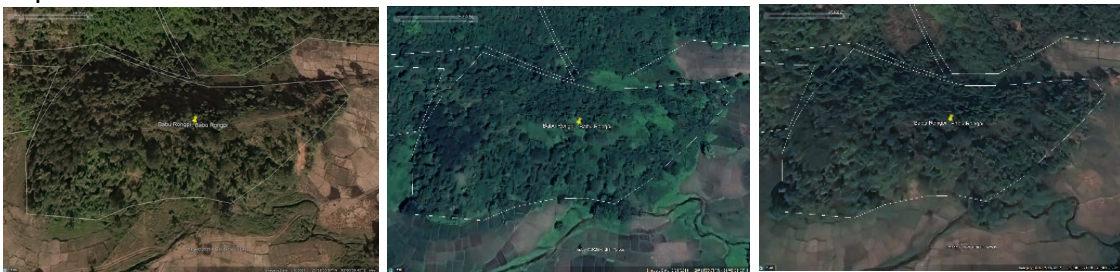
Plot: Babu Rongpi (Buraching Taro village, Samelangso block)

Year of plantation: 2020

Area: 3.88 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



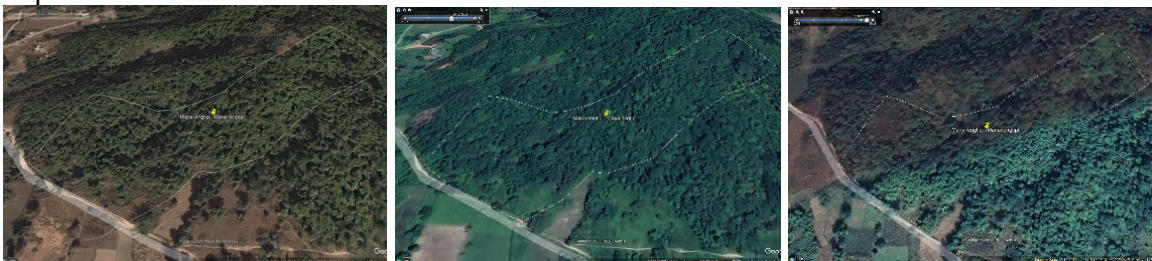
Plot: Manai engtipi (Thang teron village, Samelangso block)

Year of plantation: 2019

Area: 4.15 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



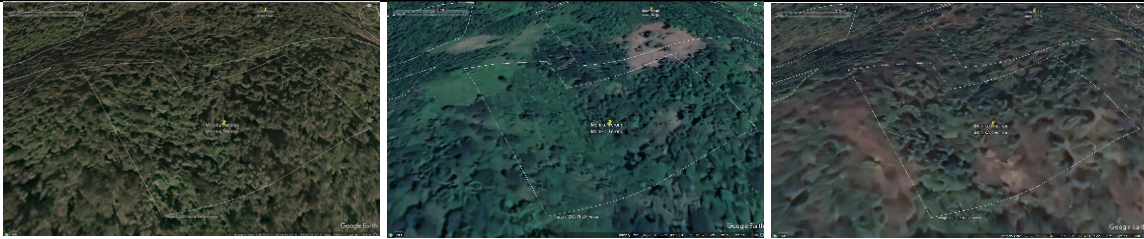
Plot: Monika teronpi (Thang teron village, Samelangso block)

Year of plantation: 2020

Area: 3.1 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



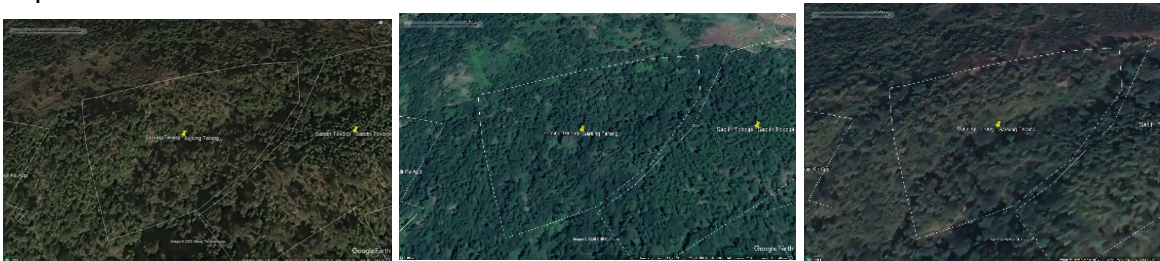
Plot: Sarsing Terang (Nala Ingti Gaon village, Samelangso block)

Year of plantation: 2019

Area: 3.42 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation.



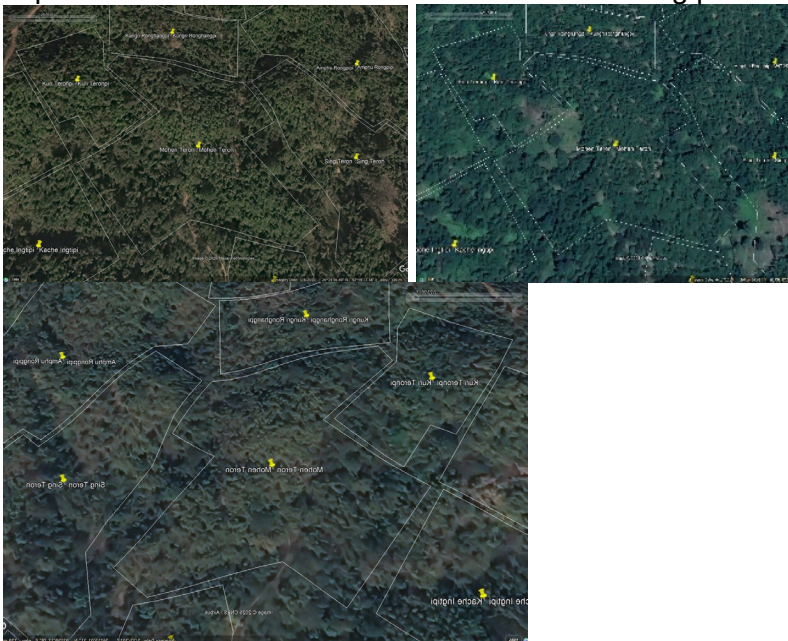
Plot: Mohen Teron (Matikhula Timung Gaon village, Samelangso block)

Year of plantation: 2019

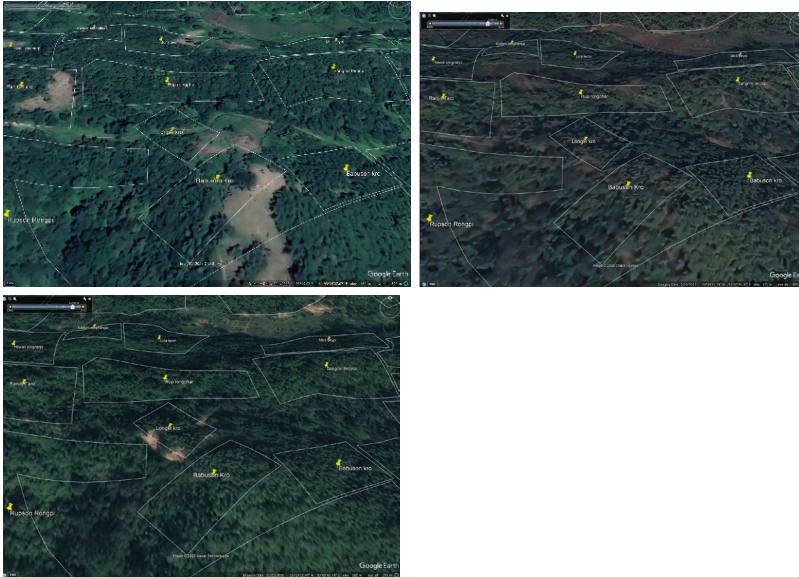
Area: 3.37 Ha

Historical assessment Year: 2010, 2013, 2017

Remark: Vegetation was observed during the period of 10 years preceding the project implementation. Same was the case for the following plots:



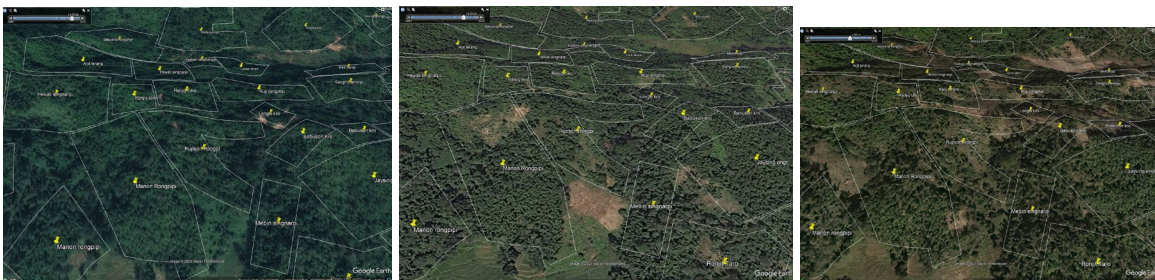
Plot “Longki kro”: existing vegetation found in 2010- 2018 prior the project start date.



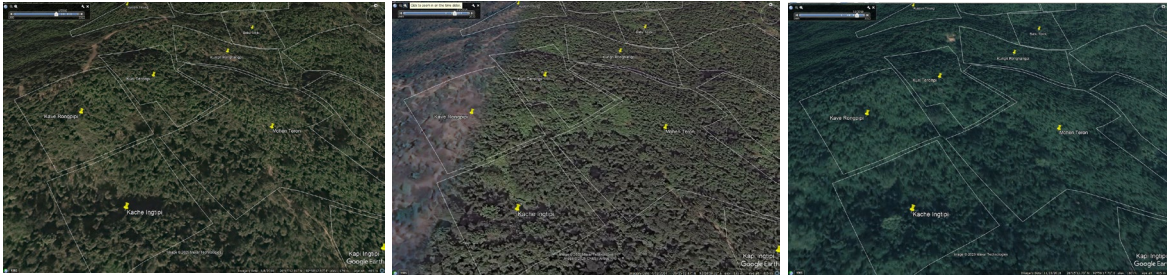
Plot “Rupasing rongpi” and also in surrounding plots: existing vegetation found across the years 2013-2018:



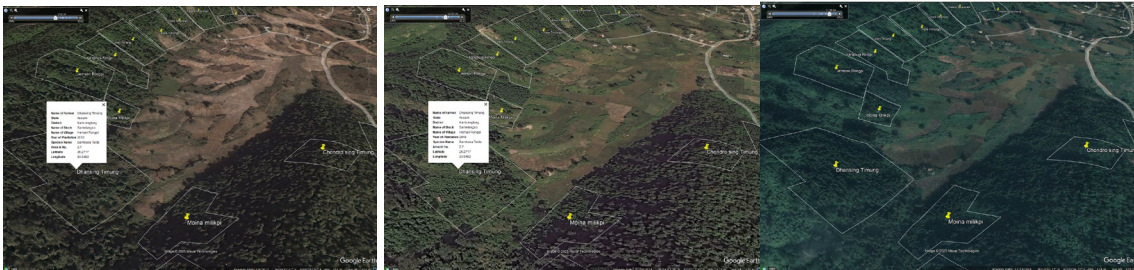
Plot- “Manon Rongpi” and also in surrounding plots: existing vegetation found across the years 2013-2018;



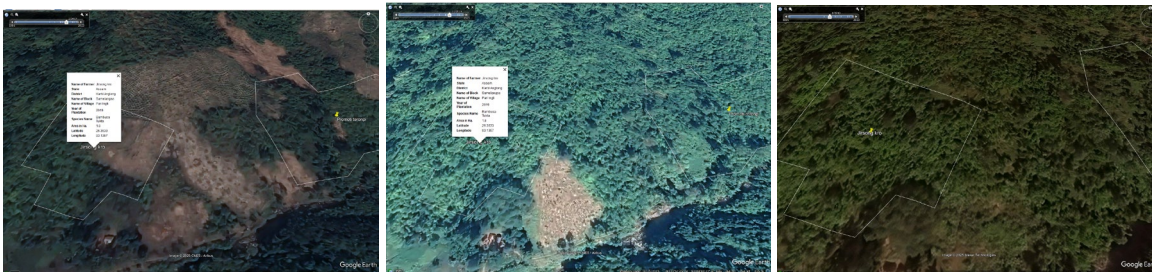
Plot- Kache Ingtipi and also in surrounding plots: existing vegetation found across the years 2010-2018.



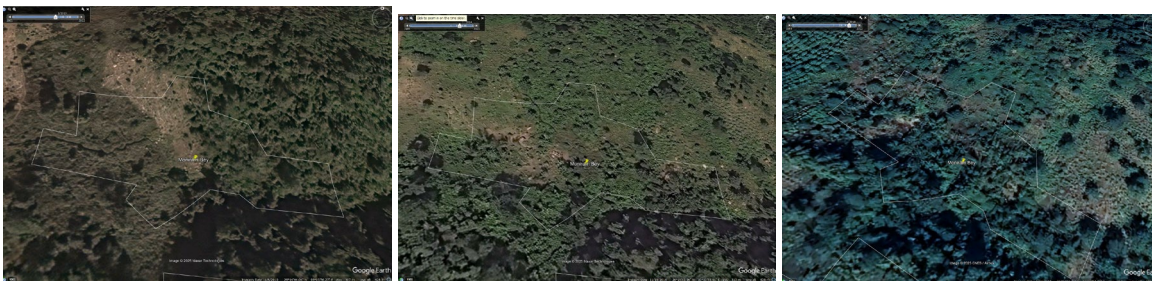
Plot-Dhansing Timung and also in surrounding plots; existing vegetation found across the years 2010-2018.



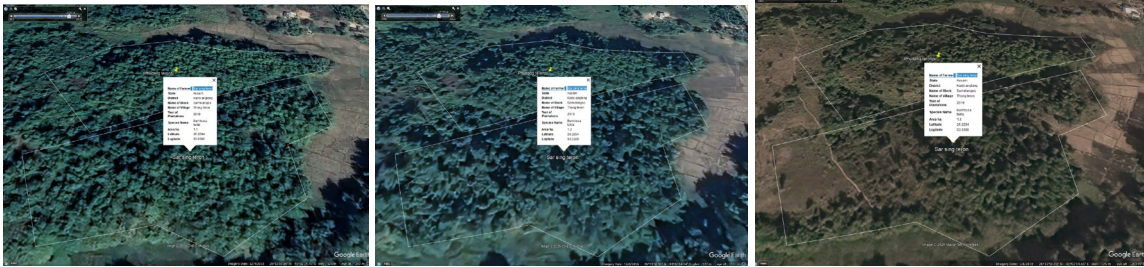
Plot-Jirsong kro and also in adjacent plots; existing vegetation found across the years 2010-2018;



Plot-Moniram Bey



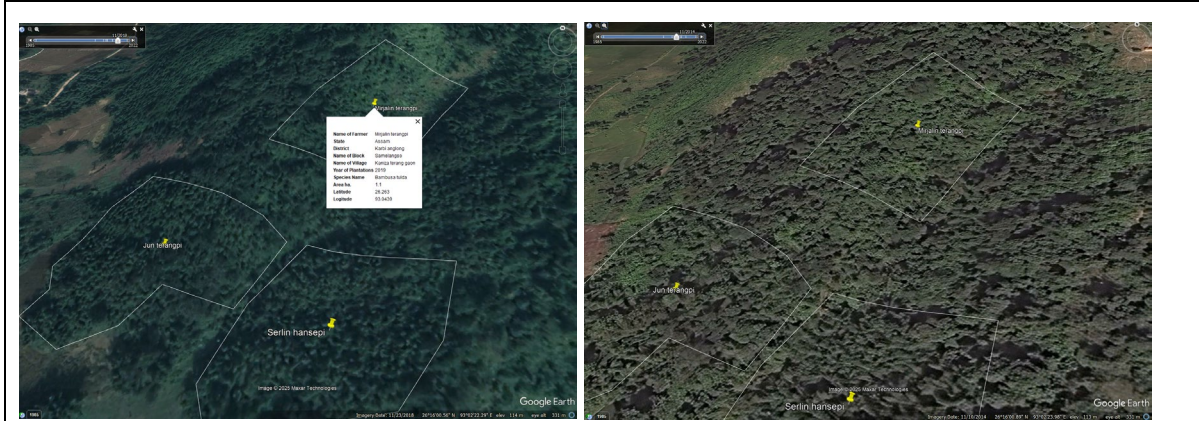
Plots- Phudang teronpi and Sar sing teron- existing vegetation found across the years 2010-2018 prior the project start date.



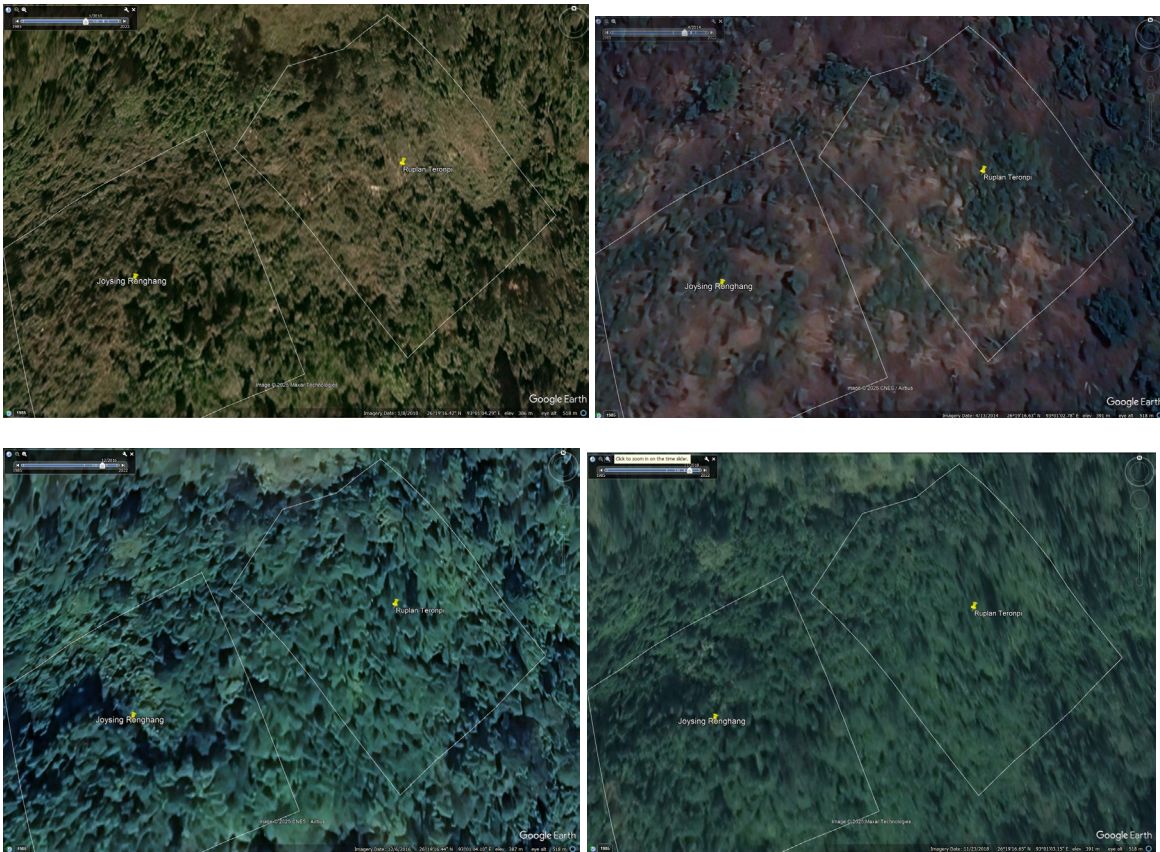
Plot-Ranjan Rongpi and in adjacent plots; existing vegetation found across the years 2010-2018



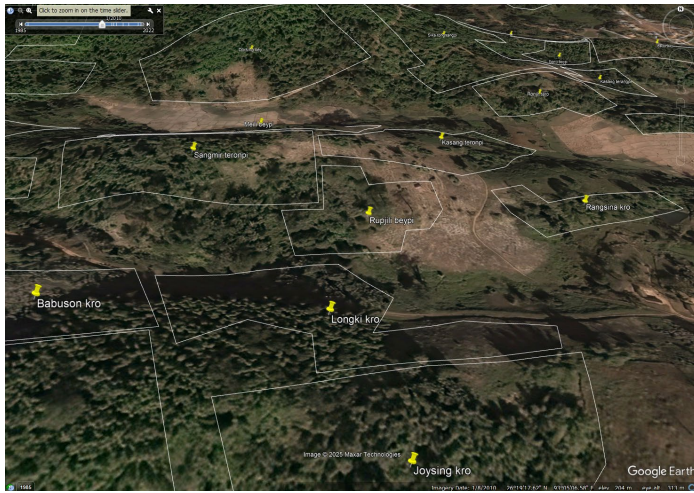
Plot- Mirjalin terangpi and adjacent plots: existing vegetation found across the years 2010-2018.



Plot- Ruplan Teronpi and adjacent plots: existing vegetation found across the years 2010-2018.

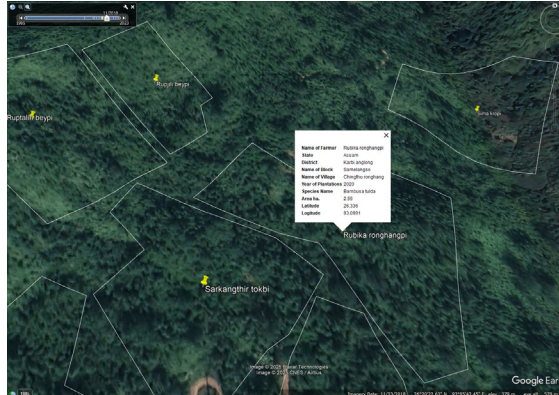


Plot- Longki kro and adjacent plots: existing vegetation found across the years 2010-2018

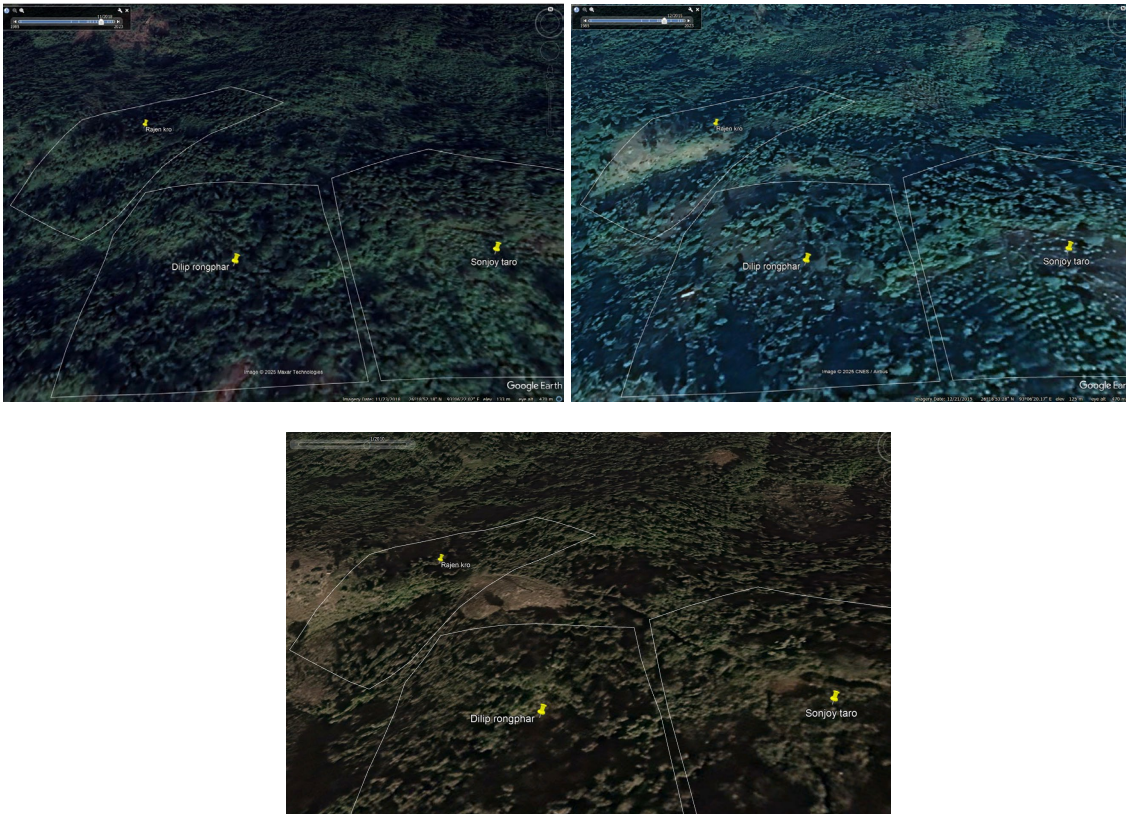


Plot- Rubika ronghangpi and adjacent plots: existing vegetation found across the years 2010-2018





Plot-Rubika ronghangpi and adjacent plots: existing vegetation found across the years 2010-2018.



Project proponent response	Date: 16/04/2025
<ol style="list-style-type: none"> <li>1. PP has provided classified Land Use Land Cover (LULC) shapefiles for the years 2009 and 2019.</li> <li>2. PP has calculated the baseline for the shrubland area.</li> <li>3. The PAI-1 of grouped project is being implemented in Assam state, where the gentle sloped and undulating terrain presents significant challenges for establishing visible and</li> </ol>	

permanent field boundaries. In many land parcels, there are no natural or man-made markers such as fences, roads, or rivers to distinguish adjacent farm plots. To address this, the Project Proponent (PP) carried out a comprehensive field verification and GPS ground-truthing survey before project implementation. Multiple GPS coordinates were collected for each land parcel to accurately define the plot boundaries. Importantly, both the participating farmers and neighbouring landowners were present during the GPS point collection to ensure mutual agreement and transparency. These verified GPS points were then used to generate the KML files representing each farm plot. While physical boundary markers may be absent due to the terrain, the involvement and consensus of all stakeholders during data collection serve as a socially validated method of boundary delineation, no risk of future disputes.

4. The kml files have now been revised:
  - a. PP has reviewed all the KML files of the project boundaries. Before July 9, 2019, some land parcels were removed, total area of 834.33 ha.
  - b. PP analysed Landsat satellite images of the project area for 2009 and 2019 using LULC classification with a supervised classification procedure and Maximum Likelihood algorithm. Based on the methodologies outlined in Ritse et al. (2020) and Chaudhary et al. (2008), it was concluded that the project area is classified as shrubland.

Ritse, V., Basumatary, H., Kulnu, A.S., Dutta, G., Phukan, M.M. and Hazarika, N., 2020. Monitoring land use land cover changes in the Eastern Himalayan landscape of Nagaland, Northeast India. *Environmental Monitoring and Assessment*, 192, pp.1-17.

Chaudhary, B.S., Saroha, G.P., and Yadav, M. (2008) Human Induced Land Use Land Cover Changes in Northern Part of Gurgaon District, Haryana, India: Natural Resources Census Concept. *Journal of Human Ecology*, 23(3), pp. 243-252.

Furthermore, Project area having greenery vegetation during all over the year due to a combination of climatic, geographical, and ecological factors. The district's rolling hills and deep valleys create diverse microclimates, which enhance biodiversity. The humid subtropical climate, characterized by significant monsoonal rainfall, sustains fertile soils and a rich variety of vegetation. The region is predominantly covered by a variety of shrubs and scattered woodlands, which provide habitats for diverse flora and fauna, ensuring ecosystem stability. Low levels of industrialization in the district help minimize environmental degradation and pollution, preserving its natural landscapes. Additionally, traditional agricultural practices, such as shifting cultivation, contribute to soil fertility and vegetation cover, preventing land degradation and maintaining ecological balance. This combination of factors allows Karbi Anglong to maintain its lush, green landscape year-round.

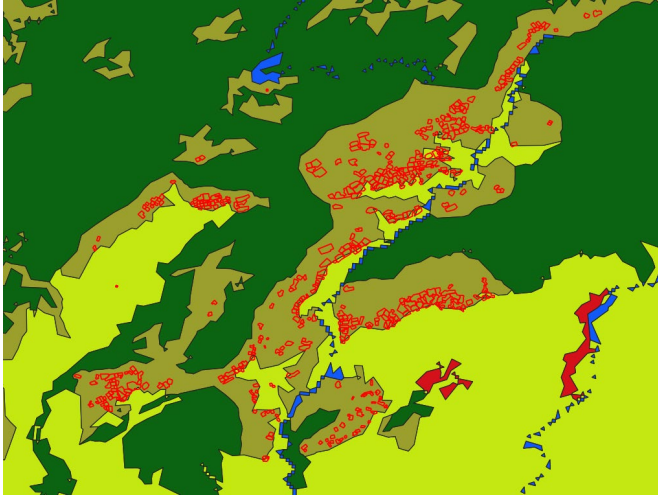
**Documentation provided by project proponent**

1. Land use Land Cover Shapefile
2. Land use Land Cover Analysis Report
3. Revised PAI-1 KML

**VVB assessment** **Date:**

1. PP has satisfactorily provided classified Land Use Land Cover (LULC) shapefiles for the years 2009 and 2019.
2. Based on the analysis of the plot boundaries against the provided LULC shapefiles, VVB has determined that a vast majority of the plots fall under the shrubland class. PP has considered this in the revised baseline assessment and accounted the carbon stocks from shrubs in the baseline.
3. VVB finds PP's justification satisfactory.

4. As stated in point 2 above, VVB conducted a GIS assessment of plot boundaries against the provided LULC shapefiles and determined that the plots fall under the shrubland category. With the carbon stock of pre-project vegetation now accounted for in the baseline assessment, VVB finds PP's justification for presence of pre-project vegetation satisfactory.



Symbol	Value	Legend
	Built-up Land	Built-up Land
	Cropland	Cropland
	Forest	Forest
	Shrubland	Shrubland
	Water Bodies	Water Bodies

Screenshot showing plots within shrubland class

CL has been closed.

CL	20	Section no.	NPRT	Date: 24/03/2025
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**Description of CL**

1. PP shall provide the AFOLU NPRT report v4.2 and notes of the project from the VERRA hub same was found to be missing.

2. Financial viability: PP shall provide the supporting document (eg. Balance sheets/audit report/investor agreement) to confirm that the selected risk factor *“Project has secured from 40 percent to less than 80 percent of the funding needed to cover the total cash out required before the project reaches breakeven”*.

- Total risk scoring of financial viability is incorrect. PP shall clarify.

Financial Viability		
Q1	How long is the project's payback period (i.e., how many years will it take to breakeven)?	c)
a)	The payback period is greater than 20 years from the current risk assessment.	0
b)	The payback period is greater than 10 years from the current risk assessment, but less than or equal to 20 years.	0
c)	The payback period is greater than seven and up to and including 10 years from the current risk assessment.	2
d)	The payback period is greater than four and up to and including 7 years from the current risk assessment.	0
e)	The payback period is four years or less from the current risk assessment.	0
Q2	What percentage of funding has the project secured to cover the total cash out required before the project reaches breakeven?	h)
i)	Project has secured less than 15 percent of funding needed to cover the total cash out required before the project reaches breakeven.	0
g)	Project has secured 15 percent to less than 40 percent of the funding needed to cover the total cash out required before the project reaches breakeven.	0
h)	Project has secured from 40 percent to less than 80 percent of the funding needed to cover the total cash out required before the project reaches breakeven.	1
i)	Project has secured 80 percent or more of the funding needed to cover the total cash out before the project reaches breakeven.	0
Q3	Does the following mitigation apply to the project?	
j)	Mitigation: Project has available, as callable and secured financial resources, at least 80 percent of total cash out before the project reaches breakeven.	2
<b>Total Financial Viability [(b, c, d or e) + (f, g, h or i + j)]</b>		
Total shall not be less than zero and the sub-total for question two with the mitigation shall not be less than zero		

3. PP shall provide the CVs/resumes of the project management & monitoring team to confirm their expertise and competency.	
<b>Project proponent response</b>	<b>Date: 16/04/2025</b>
<ol style="list-style-type: none"> <li>1. PP has now provided the AFOLU NPR report v4.2 and notes of the project from the VERRA hub for this project activity.</li> <li>2. Financial viability has been shared with VVB, as evidence for the selected risk factor <i>“Project has secured from 40 percent to less than 80 percent of the funding needed to cover the total cash out required before the project reaches breakeven”</i>. The options selected to calculate score of the financial viability are based on the financial viability calculation sheet. Hence, the total risk score of the financial viability is correct.</li> <li>3. PP has shared the CVs of the experts the project management &amp; monitoring team to confirm their expertise and competency.</li> </ol>	
<b>Documentation provided by Project proponent</b>	
<ol style="list-style-type: none"> <li>1. NPR report</li> <li>2. NPR notes</li> <li>3. Financial Viability calculation sheet</li> <li>4. Expense Estimation record for bamboo plantation</li> <li>5. CVs/resumes of the project management &amp; monitoring team</li> </ol>	
<b>VVB assessment</b>	<b>Date: 09/05/2025</b>
<ol style="list-style-type: none"> <li>1. Upon review of AFOLU NPRT report v4.2 and notes of the project from the VERRA hub, VVB confirms that relevant documents are provided to VVB for review.</li> <li>2. VVB confirms that the financial viability scoring is calculated correctly. However, PP shall provide the supporting document (e.g. Balance sheets/audit report/investor agreement) to confirm that the selected risk factor <i>“Project has secured from 40 percent to less than 80 percent of the funding needed to cover the total cash out required before the project reaches breakeven”</i>.</li> <li>3. To confirm management team experience, VVB reviewed the CV of monitoring personals. VVB confirms the competency of project management &amp; monitoring teams composed of individuals with the significant expertise to implement the project activity.</li> </ol>	
<b>Project proponent response</b>	<b>Date: 14/05/2025</b>
<ol style="list-style-type: none"> <li>2. The risk score indicating that the project has secured from 40 percent to less than 80 percent of the funding needed to cover the total cash out required before the project reaches breakeven, for the internal risk category under NPRT, has been determined using the financial viability calculator.  This percentage is calculated as the ratio of the estimated total secured funding and projected revenue to the estimated total project cost. The total project cost estimate is based on the expense estimation letter provided by the project implementor, which includes costs related to project implementation, registration, validation, consultancy, issuance fees, and other associated expenses.  The estimated funding and revenue figures are derived from the anticipated earnings through carbon credits and the sale of matured bamboo.  The financial viability calculator and expense estimation letter has already been submitted to the VVB, and supporting references for project registration, validation, consultancy and issuance costs, projected carbon credit value, and expected income from bamboo sales are all detailed in the financial viability sheet.</li> </ol>	
<b>Documentation provided by Project proponent</b>	
<b>VVB assessment</b>	<b>Date: 22/05/2025</b>

2. VVB based on the review of the Financial Viability sheet, confirms that the “*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*”. Further supported through the PP’s website [infisolutions.org/climate-investments](https://infisolutions.org/climate-investments).

**CL has been closed.**

<b>CL</b>	21	<b>Section no.</b>	LTA	<b>Date:</b> 24/03/2025
<b>Description of CL</b>				
As per the ER sheets, the LTA cap reaches on the 17 <sup>th</sup> year from project start date. It is unclear how the project intends to cover the project expenses after the LTA is reached and carbon revenues stop, and PP must set up a financial mechanism to ensure permanence until the end of project length.				
<b>Project proponent response</b>				<b>Date:</b> 16/04/2025
The project will receive carbon revenue only during the initial 6 years, as the LTA is reached by that time. The implementation and management of the project are carried out through a collaborative effort between the Project Proponent (PP) and the farmers.				
After carbon revenues stop, the farmers will continue to earn income through the sale of bamboo. A small portion of this income will be allocated to cover the ongoing project expenses, such as maintenance and monitoring. This cost-sharing mechanism has been agreed upon and is clearly outlined in the Agreement between the PP and the farmers.				
This arrangement ensures the long-term sustainability of the project and the permanence of carbon benefits until the end of the project duration.				
<b>Documentation provided by Project proponent</b>				
<ol style="list-style-type: none"> <li>1. ER calculation sheets,</li> <li>2. Farmer agreements</li> </ol>				
<b>VVB assessment</b>				<b>Date:</b> 09/05/2025
<p>VVB upon review of ER sheets, farmer agreements and PDMR, VVB noted following points:</p> <ul style="list-style-type: none"> <li>- According to ex-ante sheet for 1<sup>st</sup> PAI, LTA is reached at 6<sup>th</sup> year. Considering the monitoring data, ex-post sheet reported that LTA cap will be reached at 17<sup>th</sup> year.</li> <li>- Cost sharing mechanism confirms, 70:30 (farmer:PI) benefit sharing. Which was further confirmed by farmer agreements.</li> <li>- It is still unclear how the project intends to cover the project expenses after the LTA is reached and carbon revenues stop, and PP must set up a financial mechanism to ensure permanence until the end of project length.</li> <li>- Evidence supporting PP’s claim, “<i>After carbon revenues stops, the farmers will continue to earn income through the sale of bamboo. A small portion of this income will be allocated to cover the ongoing project expenses, such as maintenance and monitoring.</i>” is requested for VVB review. Farmer agreements do not cover any clause highlighting benefit sharing/ project expenses coverage after carbon revenues stops.</li> </ul>				
<b>Project proponent response</b>				<b>Date:</b> 14/05/2025
<ul style="list-style-type: none"> <li>- The farmers participating in this project have complete ownership of the bamboo plantations and related bamboo products as per the carbon credit agreement. Once the LTA is achieved and carbon revenue ceases, these farmers will be responsible for sustaining the plantation and covering project expenses throughout the remaining life of the project from the sale of bamboo as mentioned in the financial viability sheet.</li> <li>- According to Clause 4 of the farmer agreement, the farmers participating in this project retain full ownership rights over the land, bamboo, and all related bamboo products from the plantation. The carbon rights, however, have been transferred to the Project Proponent (PP),</li> </ul>				

<p>and a fixed share of the revenue generated from the sale of carbon credits will be deposited directly into the farmers' bank accounts by PP, as detailed in Section 2.3.5 of the VCS PDMR. Furthermore, as outlined in Clause 3, the farmers are responsible for implementing and maintaining the carbon stock of the plantation for project's longevity, which is set at 40 years. Therefore, as outlined above, the benefits to be provided to farmers through the project activity are clearly specified in the farmer agreement, and the mechanism for covering project expenses after the cessation of carbon revenues has also been clearly described.</p>	
<p>VCS PDMR, Farmer Agreements,</p>	
<p><b>VVB assessment</b></p>	<p><b>Date:</b> 22/05/2025</p>
<p>PP has clarified that the farmers in the project retain full ownership of their land, bamboo plantations, and related products, while carbon rights are transferred to the PP. As per the farmer agreements, it has been confirmed that a fixed share of carbon credit revenue is directly deposited into farmers' bank accounts. After the LTA is achieved and carbon revenue ends, farmers are responsible for sustaining the plantation and covering related expenses through bamboo sales, as outlined in the financial viability sheet. Additionally, as per the Clause 3 of farmer agreements the farmers are responsible for implementing and maintaining the plantation's carbon stock to ensure the project's longevity over the 40-year period, which ensures the project maintenance after the LTA cap. Therefore, the same has been to be acceptable.</p> <p><b>CL has been closed.</b></p>	

<p><b>CL</b></p>	<p>22</p>	<p><b>Section no.</b></p>	<p>Onsite observations</p>	<p><b>Date:</b> 24/03/2025</p>
<p><b>Description of CL</b></p>				
<p>1. During the onsite observations, VVB noted that PP has measured three clumps per plot for biomass estimations, therefore PP shall clarify how this approach is scientifically appropriate and representative of entire plot.</p> <p>2. VVB, during onsite interactions with the PP, noted that there is a change in the project area. PP shall provide the updated the KML's for the same.</p>				
<p><b>Project proponent response</b></p>				<p><b>Date:</b> 07/04/2025</p>
<p>2. PP followed the standard methodology for the sampling procedure during the field survey. The sampling was conducted through a complete enumeration of three clumps per plot, with a total count of each clump within the 625 m<sup>2</sup> (25m X 25m) plot. This sampling approach has been followed in accordance with a registered project under the VCS Program (<a href="#">Verra Search Page</a>).</p> <p>3. There was a computational error in the project area reported in the PDMR. The PP has now corrected the error, ensuring consistency throughout the document. Updated KML files have also been provided to the VVB.</p>				
<p><b>Documentation provided by Project proponent</b></p>				
<p>1. Monitoring data sheets, 2. KML files</p>				
<p><b>VVB assessment</b></p>				<p><b>Date:</b> 09/05/2025</p>
<p>1. Upon review of PD of registered project VCS-2928, VVB confirms that the sampling procedure is referred from already registered VCS project. Yet there is no scientific justification provided for selection of sampling procedure. PP shall clarify how this approach is scientifically appropriate through literature and representative of entire plot.</p> <p>2. VVB has verified the GIS files of project area found that the updated area of 834.ha has been made consistent with PDMR.</p>				
<p><b>Project proponent response</b></p>				<p><b>Date:</b> 14/05/2025</p>

<p>1. The study “Kaushal, R., S. Islam, Salil Tewari, J. M. S. Tomar, S. Thapliyal, M. Madhu, T. L. Trinh, Tarun Singh, Avnindra Singh, and J. Durai. "An allometric model-based approach for estimating biomass in seven Indian bamboo species in western Himalayan foothills, India." <i>Scientific Reports</i> 12, no. 1 (2022): 7527”, which states “for understanding the culm size distributions within the sample plots, three clumps were selected randomly and measured for their clump girth, crown diameter, culm number, culm diameter at breast height.” PP has provided the same reference in the section 6.3, VCS PDMR.</p>	
<p><b>Documentation provided by Project proponent</b></p>	
<p>VCS PDMR</p>	
<p><b>VVB assessment</b></p>	<p><b>Date: 22/05/2025</b></p>
<p>VVB based on the review of peer reviewed literature “<i>Kaushal et al 2022</i>”, which reported that the to assess culm size distribution, three clumps were randomly selected and measured for clump girth, crown diameter, culm count, and DBH. The similar sampling procedure has been followed the project activity and further the similar approach was followed in the VCS approved 2928 project. Therefore, the same has been deemed to be acceptable to the VVB and confirming that measuring three clumps per plot for biomass estimations is appropriate considering site conditions and representative of entire plot.</p>	
<p><b>CL has been closed.</b></p>	

**4. Table 2. CAR from this validation and verification**

<p><b>CAR</b></p>	<p><b>01</b></p>	<p><b>Section No.</b></p>	<p><b>PDMR Template instructions &amp; editorials</b></p>	<p><b>Date: 24/03/2025</b></p>
<p><b>Description of CAR</b></p>				
<p>Upon review of PDMR, VVB found following discrepancies,</p> <ol style="list-style-type: none"> <li>1) On the title page, version “no” of document is missing as per the VCS PDMR template instructions. PP shall correct.</li> <li>2) In section 1.4.1 of PDMR, PP stated that “<i>Section 2.1.1 of the VCS standard 4.7 explains scope of the VCS program. “AGROFORESTRY PLANTATIONS IN INDIA” lead to sequestration/removal of CO<sub>2</sub> (which is one of the Kyoto protocols GHG) in different pools of carbon in the form of AGB, BGB, SOC Litter and Dead wood.</i>” The project title mentioned does not match the actual project title. PP shall correct.</li> <li>3) As per the PDMR template instructions PP shall “<i>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</i>”. The information provided in the PDMR section 1.4.1 is not transparent on the methodology AR-ACM0003 deadline. PP shall demonstrate the same.</li> <li>4) The joint PDMR section 4.1 is not transparent on the dates of project monitoring activities carried out. PP shall include the same.</li> </ol>				
<p><b>Project proponent response</b></p>				<p><b>Date: 10/04/2025</b></p>

<p>PP has now corrected all the discrepancies and is now consistent in overall VCS PDMR:</p> <ol style="list-style-type: none"> <li>1) Version no of the document has now been updated in the column “version” in the table given on the title page of the document.</li> <li>2) There was an editorial error in section 1.4.1 of the PDMR. PP has now corrected the same and is now in line with actual project title.</li> <li>3) PP has now provided the information regarding the deadline of the applied methodology AR-ACM0003 in the 1.4.1 of the PDMR.</li> <li>4) PP has now correctly mentioned the date of project monitoring activities (PAI-1 plantation) began, in section 4.1 of the PDMR.</li> </ol>	
<p><b>Documentation provided by project proponent</b></p>	
<p>1. VCS PDMR</p>	
<p><b>VVB assessment</b></p>	<p><b>Date:</b> 09/05/2025</p>
<p>VVB based on review of Revised PDMR confirms following revisions:</p> <ol style="list-style-type: none"> <li>1) On the title page, version “no” of document is revised to current version as per the VCS PDMR template instructions.</li> <li>2) In section 1.4.1 of PDMR, the project title is corrected and made consistent with the project.</li> <li>3) In the PDMR section 1.4.1, As per the PDMR template instructions PP shall “<i>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</i>”. The information provided in the PDMR section 1.4.1 covers pipeline listing deadline, validation deadline as well as methodology deadline, but the information about opening meeting with the validation/verification body is missing. PP shall demonstrate the same.</li> <li>4) The joint PDMR section 4.1 is revised with the dates of project activities carried out (from date of 1<sup>st</sup> PAI plantations to end of current monitoring period).</li> </ol>	
<p><b>Project proponent response</b></p>	<p><b>Date:</b> 13/05/2025</p>
<p>3) PP has now provided the information about opening meeting with the validation/verification body in the section 1.4.1 of VCS PDMR.</p>	
<p><b>Documentation provided by Project proponent</b></p>	
<p>VCS PDMR</p>	
<p><b>VVB assessment</b></p>	<p><b>Date:</b> 22/05/2025</p>
<p>VVB has checked that the section 1.4.1 of the PD is made transparent on the date of opening meeting with the VVB, which is conducted on 25<sup>th</sup> March 2025, which is after the project listing status as “under validation” in line with section 4.1.5 of the VCS standard requirements.</p>	
<p><b>CAR has been closed.</b></p>	

<p><b>CAR</b></p>	<p>02</p>	<p><b>Section No.</b></p>	<p>Section 3.4 of PDMR</p>	<p><b>Date:</b> 24/03/2025</p>
<p><b>Description of CAR</b></p>				
<p>Section 3.4 of PDMR, mentions <i>Lantana camara</i>, <i>Chromolaena odorata</i> (Siam weed), and <i>Ipomoea carnea</i> as <i>invasive species in project area</i> whereas, in PDMR section 2.4.2, PP has mentioned only one species.</p> <p>PP is requested to demonstrate all invasive species from the project area and justify the Mitigation measures to prevent the spread or continued existence of invasive species as per the requirements of section 3.19.27 of the VCS standard.</p>				
<p><b>Project proponent response</b></p>				<p><b>Date:</b> 07/04/2025</p>

PP has now updated the section 3.4 of VCS PDMR, and it is now consisted with the section 2.4.2 of VCS PDMR.

Based on scientific literature i.e. (“Deka and Barua (2015), Problem weeds and their management in the North-East Himalayas”) reported that “the ground vegetation is damaged and change remarkably because of increasing predominance of invasive weeds like *Lantana camara*, etc. For their management practices it is necessary to remove the invasive species from land type. Therefore, PP follow the manually uprooting and weeding practices to remove the invasive species.

**Documentation provided by project proponent**

1. VCS PDMR

**VVB assessment**

**Date:** 09/05/2025

Upon review of revised PDMR, VVB confirms that Invasive species are updated in section 3.4 and section 2.4.2. Furthermore, VVB reviewed the supporting evidence/scientific literature provided by PP (“Deka and Barua (2015), Problem weeds and their management in the North-East Himalayas”) and upon own web review, [\(PDF\) Invasive alien herbaceous species in terrestrial and swampland habitats in India: A review](#) confirmed that *Lantana camara* is invasive species in project area.

**CAR has been closed.**

<b>CAR</b>	03	<b>Section No.</b>	ER sheets	<b>Date:</b> 24/03/2025
<b>Description of CAR</b>				

Upon review of Ex-ante and Ex-post sheets, VVB has noted following inconsistencies:

1. Ex-post sheet - tab 'vintage period' – column C, PP is requested to recalculated total no. of days considering leap years during monitoring period i.e. 2020 and 2024.
2. In the Ex-ante and Ex-post sheets- tab 'SOC' For the parameter “fLU,I” the applied value of 0.48, which is meant for “areas that has been continuously managed for crops for more than 20 years” as per AR tool-016 requirement, the same was not with project case. Therefore, PP shall correct same with the appropriate value as per the table.4 of the AR tool016.
3. Ex-ante sheet (PAI- I), Tab ‘General information’ cell C10, PP shall clarify and provide the reference of value mentioned.

Year of Plantation	Plantation	Grand Total
	Bambusa tulda Area (ha)	
	270	
2019	530.348	530.35
2020	211.795	211.80
2021	45.86	45.86
2022	12	12.00
<b>Grand Total</b>	<b>800.00</b>	<b>800.00</b>

> General Information Tulda 2019 Tulda

4. The mentioned date of vintage period is inconsistent in the ER sheets, PP shall correct the date of vintage period (01-January-2049 to **08-July-2048**), from tab LTA, in ex-ante 4500 sheet and ex-

26	01-January-2039 to 31-December-2039	0	1989034	12465	1989034
27	01-January-2040 to 31-December-2040	0	2000391	11357	2000391
28	01-January-2041 to 31-December-2041	0	2011359	10969	2011359
29	01-January-2042 to 31-December-2042	0	2022241	10882	2022241
30	01-January-2043 to 31-December-2043	0	2033104	10863	2033104
31	01-January-2044 to 31-December-2044	0	2043967	10863	2043967
32	01-January-2045 to 31-December-2045	0	2054830	10863	2054830
33	01-January-2046 to 31-December-2046	0	2064708	9878	2064708
34	01-January-2047 to 31-December-2047	0	2072109	7400	2072109
35	01-January-2048 to 31-December-2048	0	2076573	4464	2076573
36	01-January-2049 to 08-July-2048	0	2078101	1528	2078101
37				<b>SUM</b>	<b>41590687</b>
38				<b>LTA</b>	<b>1386356</b>

post calculation sheets.

< > ... Tulda 2028 Tulda 2029 SOC Baseline Leakage NPR Summary LTA

**Project proponent response**

**Date: 16/04/2025**

1. The ex-post vintage period calculation has now been revised to account for the leap years in 2020 and 2024.
2. There was a computational error in the Ex-ante and Ex-post sheets, under the 'SOC' tab. The value for the parameter “fLU,I” has been revised from 0.48 to 0.82, considering the land category as short-term cultivated land (< 20 years).
3. This plantation model has been adopted by the PP for project implementation. To support this approach, the PP has provided the sapling distribution records as evidence.
4. The inconsistency in the vintage period has been corrected. It is now consistent across all over the ER sheets (Ex ante for PAI-1 and grouped project and EX post).

**Documentation provided by project proponent**

1. ERR sheet (Ex ante (PAI-1 and Grouped project) and EX post of PAI-1
2. Sapling distribution records

**VVB assessment**

**Date: 09/05/2025**

VVB, upon review of revised ER sheets confirm that,

1. The ex-post vintage period calculation is updated considering leap years.

2. In the Ex-ante and Ex-post sheets, PP has revised the value of parameter “fLU,l” from 0.48 to 0.82. VVB validates this revision, confirming that the land was cropland in a fallow state for less than five years at any point in the last 20 years. This assessment was further supported by onsite observations and GIS data.
3. In the Ex-ante sheet (PAI-I), under the 'General Information' tab, cell C10, the Project Proponent (PP) is requested to clarify and provide a reference for the value mentioned. The column titles indicate 'Plantation Model' and 'B. tulda (Area in ha),' yet the value provided represents the number of culms per hectare rather than the plantation area. Therefore, the PP should explicitly state the origin of this value to ensure accuracy and transparency.
4. VVB confirms that dates of vintage period are revised in both ex-ante and ex-post and made consistent with project’s current monitoring period.
5. In the Ex-ante ER sheet: tab Tulda 2020, cell D13 PP has not accounted the mortality rate of 10% in estimations. PP shall correct the same.
6. Column C & D of the ex-post sheet (tab LTA) are hardcoded. PP shall correct.

**Project proponent response**

**Date: 13/05/2025**

3. PP has now provided the clarification for the cell C10, under the ‘General Information’ tab in the Ex-ante sheet (PAI-I). The value provided represents the average number of clumps per hectare, derived from the sapling distribution records. The sapling distribution records have already been shared with VVB.
5. There was a calculation error in cell D13, tab Tulda 2020 in the Ex-ante ER sheet. The same has now been rectified by PP through the inclusion of a 10% mortality rate in the calculation. The revised estimated emissions have been incorporated in VCS PDMR.
6. PP has now corrected the column C & D in tab LTA of the Ex-post sheet. The values provided in the column C11 & D11 in the tab LTA, Ex-post sheet are referenced from D9 (sum of baseline emissions in monitoring period) and E11 (sum of the project emissions in monitoring period) respectively. The values provided in column C & D are distributed based on the emissions (for baseline and project respectively) per year.

**Documentation provided by Project proponent**

1. ER Sheets (Ex-ante, Ex-post and grouped ER sheet)
2. VCS PDMR

**VVB assessment**

**Date: 22/05/2025**

3. It has been checked that in the ER sheet 'General Information' tab, cell C10 referred value of 250 clumps/ha, which represents the average no. of clumps per hectare and this value is sourced from the sapling’s distribution records.
4. VVB based on the verification of updated ER sheet (tab *Tulda 2020*), confirms that the PP has accounted the 10% mortality rate in the estimations appropriately.
6. It has been checked that in Ex-post sheet (tab LTA) column C & D are updated with reference to the baseline and project emissions sheets appropriately.

**CAR has been closed.**

<b>CAR</b>	04	<b>Section No.</b>	6.1 (Data parameters)	and	<b>Date:</b> 24/03/2025
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**Description of CAR**

1. The section 6.1 of PDMR, for parameter  $DF_{DW}$  the value applied is mentioned as 1%, whereas in the justification row it was stated as 2%. PP shall correct the inconsistency.  
 - The same was the case with the parameter  $DF_{LI}$ , PP shall correct.
2. PP shall provide the supporting document to confirm that “the project is located in tropical region with <2000m elevation and 1000 mm yr-1”.
3. VVB, based on the review of provided “Winrock sample calculation tool”, found that the provided sample plot no. distribution is inconsistent with the sample plot values reported in section 6.2 of PDMR (Parameter-Size of Each PSPs in the Stratum i ( $A_{Plot\ i}$ )). PP shall correct.

Additional plots are installed as a precaution. Please calculate the number of plots to install as a precautionary measure. It is recommended that at least 10-20% more plots be installed than CDM tool equations calculate.

Stratum	Stratum Name	Final plot quantity (n)
Total Sample Size		43
stratum 1	2019 B, tulda	30
stratum 2	2020 B, tulda	12
stratum 3	2021 B, tulda	1
stratum 4	2022 B, tulda	0
stratum 5		
stratum 6		
stratum 7		
stratum 8		
stratum 9		
stratum 10		
stratum 11		
stratum 12		
stratum 13		
stratum 14		

**Project proponent response** **Date:** 16/04/2025

1. The inconsistencies in  $DF_{DW}$  and  $DF_{LI}$  throughout the PDMR have been revised to ensure consistency across the document.
2. The reference of project is located in tropical region with <2000m elevation and 1600 mm yr-1 has been added in PDMR.
3. The Winrock sample calculation tool was used to determine the required number of PSPs for monitoring. As per the revised calculations, the required number of PSPs is 40. However, considering a conservative approach, the Project Proponent (PP) monitored 43 PSPs. This number has been consistently mentioned throughout the PDMR.

**Documentation provided by project proponent**

1. VCS PDMR,
2. Sample plot calculator

**VVB assessment** **Date:** 09/05/2025

- VVB upon review of revised PDMR confirms following,
1. The values  $DF_{DW}$  and  $DF_{LI}$  throughout the PDMR, VVB confirms that values are revised based on Data / Parameter table 5 & 6 from section 8.1 of AR-TOOL12 (A/R Methodological tool: Estimation of carbon stocks and change in carbon stocks in dead wood and litter in A/R CDM project activities.)
  2. Based on supporting evidence, [Assam State Disaster Management Authority](#), VVB confirms precipitation rate 1600 mm yr-1, and based on [Elevation map of Karbi Anglong, Assam, India - Topographic Map - Altitude Map](#), VVB confirmed that elevation is <2000m.

3. Document "Sample plot calculator" is reviewed by VVB, it was confirmed that value of PSPs is revised to 40. Additional 3 plots, makes a sampling more inclusive and transparent.

**CAR has been closed.**

# APPENDIX 05: COMPETENCY CERTIFICATES



## Carbon Check (India) Private Limited

### Certificate of Competency

#### Mr. 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:*

<input checked="" type="checkbox"/> Validator	<input checked="" type="checkbox"/> Verifier	<input checked="" type="checkbox"/> Team Leader	<input checked="" type="checkbox"/> Technical Expert
<input type="checkbox"/> Technical Reviewer	<input type="checkbox"/> Validator/Verifier (Trainee)	<input type="checkbox"/> Gender Expert	<input type="checkbox"/> Plastic Waste Expert
<input type="checkbox"/> CCB Expert	<input type="checkbox"/> Legal Expert	<input type="checkbox"/> Financial Expert	<input type="checkbox"/> Environmental, Health and Safety financial matters
<input type="checkbox"/> SDG Expert	<input type="checkbox"/> Expert Social aspect	<input type="checkbox"/> Expert Environmental Aspect	<input type="checkbox"/> Health Expert
<input checked="" type="checkbox"/> Regional Expert for India		<input type="checkbox"/> FOEN Approved Technical Expert	<input type="checkbox"/> FOEN Approved Quality officer

*in the following Technical Areas:*

<input type="checkbox"/> TA 1.1	<input type="checkbox"/> TA 1.2	<input type="checkbox"/> TA 2.1	<input type="checkbox"/> TA 3.1	<input type="checkbox"/> TA 4.1
<input type="checkbox"/> TA 4. n	<input type="checkbox"/> TA 5.1	<input type="checkbox"/> TA 5.2	<input type="checkbox"/> TA 7.1	<input type="checkbox"/> TA 8.1
<input type="checkbox"/> TA 9.1	<input type="checkbox"/> TA 9.2	<input type="checkbox"/> TA 10.1	<input type="checkbox"/> TA 13.1	<input type="checkbox"/> TA 13.2
<input checked="" type="checkbox"/> TA 14.1	<input checked="" type="checkbox"/> TA 15.1	<input type="checkbox"/> TA 16.1		

<b>Issue Date</b> 06 <sup>th</sup> February 2025	<b>Expiry Date</b> 31 <sup>st</sup> December 2025
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Mr. Vikash Kumar Singh  
Director - Compliance

**Revision History of the document:**

Revision Date	Summary of changes
Jan 2025 <sup>1</sup>	Revised as per latest organogram
Feb 2025	Revised to include FOEN requirements

CCIPL\_FM 7.9 Certificate of Competency\_V8.0\_05022025  
<sup>1</sup> Please refer to previous version of FM 7.9 for the revision history



## Carbon Check (India) Private Limited

### Certificate of Competency

**Ms. Koushiki Sarma**

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:

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> Validator                            | <input type="checkbox"/> Verifier                     | <input type="checkbox"/> Team Leader                    | <input type="checkbox"/> Technical Expert                                   |
| <input type="checkbox"/> Technical Reviewer                   | <input type="checkbox"/> Validator/Verifier (Trainee) | <input type="checkbox"/> Gender Expert                  | <input type="checkbox"/> Plastic Waste Expert                               |
| <input type="checkbox"/> CCB Expert                           | <input type="checkbox"/> Legal Expert                 | <input type="checkbox"/> Financial Expert               | <input type="checkbox"/> Environmental, Health and Safety financial matters |
| <input type="checkbox"/> SDG Expert                           | <input type="checkbox"/> Expert Social aspect         | <input type="checkbox"/> Expert Environmental Aspect    | <input type="checkbox"/> Health Expert                                      |
| <input checked="" type="checkbox"/> Regional Expert for India |   | <input type="checkbox"/> FOEN Approved Technical Expert | <input type="checkbox"/> FOEN Approved Quality officer                      |

in the following Technical Areas:

- |                                  |                                  |                                  |                                  |                                  |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> TA 1.1  | <input type="checkbox"/> TA 1.2  | <input type="checkbox"/> TA 2.1  | <input type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1  |
| <input type="checkbox"/> TA 4. n | <input type="checkbox"/> TA 5.1  | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1  | <input type="checkbox"/> TA 8.1  |
| <input type="checkbox"/> TA 9.1  | <input type="checkbox"/> TA 9.2  | <input type="checkbox"/> TA 10.1 | <input type="checkbox"/> TA 13.1 | <input type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1 | <input type="checkbox"/> TA 15.1 | <input type="checkbox"/> TA 16.1 |                                  |                                  |

Issue Date

06<sup>th</sup> February 2025

Expiry Date

31<sup>st</sup> December 2025

Mr. Vikash Kumar Singh  
Director - Compliance

Revision History of the document:

Revision Date	Summary of changes
Jan 2025 <sup>1</sup>	Revised as per latest organogram
Feb 2025	Revised to include FOEN requirements

CC IPL FM 7.9 Certificate of Competency\_V8.0\_05022025

<sup>1</sup> Please refer to previous version of FM 7.9 for the revision history



## Carbon Check (India) Private Limited

### Certificate of Competency

**Ms. 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:*

- |   |   |   |   |
|---|---|---|---|
| <input checked="" type="checkbox"/> Validator                 | <input checked="" type="checkbox"/> Verifier          | <input checked="" type="checkbox"/> Team Leader         | <input checked="" type="checkbox"/> Technical Expert                        |
| <input checked="" type="checkbox"/> Technical Reviewer        | <input type="checkbox"/> Validator/Verifier (Trainee) | <input type="checkbox"/> Gender Expert                  | <input type="checkbox"/> Plastic Waste Expert                               |
| <input type="checkbox"/> CCB Expert                           | <input type="checkbox"/> Legal Expert                 | <input type="checkbox"/> Financial Expert               | <input type="checkbox"/> Environmental, Health and Safety financial matters |
| <input type="checkbox"/> SDG Expert                           | <input type="checkbox"/> Expert Social aspect         | <input type="checkbox"/> Expert Environmental Aspect    | <input type="checkbox"/> Health Expert                                      |
| <input checked="" type="checkbox"/> Regional Expert for India |   | <input type="checkbox"/> FOEN Approved Technical Expert | <input type="checkbox"/> FOEN Approved Quality officer                      |

*in the following Technical Areas:*

- |   |   |                                  |                                  |                                  |
|---|---|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> TA 1.1             | <input type="checkbox"/> TA 1.2             | <input type="checkbox"/> TA 2.1  | <input type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1  |
| <input type="checkbox"/> TA 4. n            | <input type="checkbox"/> TA 5.1             | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1  | <input type="checkbox"/> TA 8.1  |
| <input type="checkbox"/> TA 9.1             | <input type="checkbox"/> TA 9.2             | <input type="checkbox"/> TA 10.1 | <input type="checkbox"/> TA 13.1 | <input type="checkbox"/> TA 13.2 |
| <input checked="" type="checkbox"/> TA 14.1 | <input checked="" type="checkbox"/> TA 15.1 | <input type="checkbox"/> TA 16.1 |                                  |                                  |

**Issue Date**

06<sup>th</sup> February 2025

**Expiry Date**

31<sup>st</sup> December 2025

**Mr. Vikash Kumar Singh**  
Director - Compliance

**Revision History of the document:**

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Feb 2025	Revised to include FOEN requirements