VCS JOINT VALIDATION AND VERIFICATION REPORT OF KIJANI FORESTRY SMALLHOLDER FARMER FORESTRY PROJECT

Document Prepared by Earthood Services Private Limited

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Summary:

Provide a brief summary of the following:

- A description of the project

Earthood Services Ltd. (Earthood) has carried out the joint validation and verification assessment of the project activity "Kijani Forestry Smallholder Farmer Forestry Project" VCS ID 4475. The assessment covered the crediting period from 22/08/2022 to 21/08/2062 and monitoring period from 22/08/2022 to 21/08/2023 (one year, inclusive of both the dates). The project activity falls under sectoral scope 14, Agriculture Forestry and Other Land Use (AFOLU) type and category Afforestation, Reforestation and Revegetation (ARR) as per the latest VCS Standard, version 4.5. This is a grouped project and falls under "Project category" as per section 3.10 of the VCS standard, v4.5 The project involves afforestation, plantation of tree species in the fields, hereafter is referred as "gardens" of the farmers included in the project. The project is being implemented in Uganda. The project is applied approved CDM methodology AR-ACM0003 "Afforestation and reforestation of lands except wetlands" (version 02.0) and its associated tools to quantify the amount of greenhouse gas reductions achieved through this project. This project has multiple project proponents viz., One Carbon World and Kijani Forestry. Other entities involved in this project are CLIMIT. The calculation of project emissions reductions achieved for the current monitoring period has been carried out in a transparent and conservative manner and were made available in emission reductions calculations spreadsheets for this joint validation and verification assessment. The estimated total and annul emission reductions verified for the crediting period are 19,829,984 tCO2 (long-term average) and 495750tCO2/yr respectively; and the achieved annual emission reductions for the first monitoring period is 850 tCO2. Along with this, the project is also contributing to SDGs 1, 8 and 15.

- A description of the validation and verification

Earthood has carried out the joint validation and verification for the crediting period 22/08/2022 to 21/08/2062 and monitoring period 22/08/2022 to 21/08/203.

- The purpose and scope of validation and verification

This assignment is an independent assessment by a Third Party (Earthood) of the project "Kijani Forestry Smallholder Farmer Forestry Project" (VCS 4475) against all defined criteria set for the registration under the VCS Standard, version 4.5. Joint validation and verification are conducted using Earthood procedures which are developed in line with the requirements specified in the VCS Validation and Verification Manual v3.2. The purpose of the joint validation and verification is to confirm that the project and all related project documentation are in accordance with all rules and requirements of the VCS Standard v4.5, applied methodology AR-ACM0003, version 2.0 and its associated tools.

- The method and criteria used for validation and verification

The verification team has reviewed the project activity in accordance with the rules and requirements specified in the latest versions of VCS standard and checked the applicability of the project against the applied methodology and tools which includes the following:

☐ VCS Standard, version 4.5

☐ VCS Program Guide, version 4.4

☐ VCS Program Definitions, version 4.4

☐ VCS Validation and Verification Manual, version 3.2

☐ AFOLU Non-Permanence Risk Tool, version 4.2

- The number of findings raised during validation and verification

During the verification process 17 clarification, 06 corrective action requests were raised and successfully resolved. One (01) forward action request (FARs) was raised during this first verification period

- Any uncertainties associated with the validation and verification

There were no uncertainties associated with the validation and verification process. The verification team has checked the information given in the monitoring report and checked the calculation of emission reductions achieved in this monitoring period. Each detail has been checked through document review which is not only confined to information provided by project proponent (PP) but also by undertaking an independent evaluation of relevant publicly available information by making use of technical expertise of the assessment team. Project implementation activities, monitoring activities and contributed SDGs have also been confirmed during a remote site visit and the responses provided by stakeholders were positive. Thus, there are no evident uncertainties associated with the verification in this monitoring period.

- Summary of the validation and verification conclusions

In conclusion, it is Earthood's opinion that the project activity "Kijani Forestry Smallholder Farmer Forestry Project" (VCS 4475) implemented in the project area Myanmar, meets all relevant requirements for VCS standards and guidelines, and correctly applies the methodology AR-ACM0003, version 2.0 for the calculation of baseline, for determining additionality and to monitor emission reductions.

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1 INTRODUCTION

1.1 Objective

Earthood was contracted by One Carbon World to undertake the joint validation and verification of the project activity “Kijani Forestry Smallholder Farmer Forestry Project” (VCS ID 4475).

The objective of the joint validation and verification is to undertake an independent third-party assessment and to approve the joint project description and monitoring report, emission reductions and all the related project documentation & supporting documents are in accordance with the rules and requirements of the VCS Standard v4.5 /3/.

Especially the project's implementation plan, and the quantification of emission reduction & removal and non-permanence risk analysis is in line with relevant VCS requirements and host Country criteria are assessed to confirm that the project implementation, as documented, is comprehensive and practical and meets the identified criteria. Independent third-party assessment is a requirement for all VCS projects and is mandatory to provide assurance to the Verra and other stakeholders of the quality of the project and its achieved Verified Carbon Units (VCUs) generation.

1.2 Scope and Criteria

The scope of the services provided by the Earthood for the project is to perform VCS verification of the project “Kijani Forestry Smallholder Farmer Forestry Project” in Uganda (VCS4475). The scope of joint validation and verification is to assess the emission reductions estimated for the crediting period and also emission reductions achieved in this monitoring period as presented in the joint project description and monitoring report (VCS MR) and emission reduction calculation sheets against the VCS Standard version 4. 5, applied methodology AR-ACM0003, version 2.0 and its associated tool and other relevant rules and requirements established for VCS project activities.

Verification Process and Methodology

The verification process is undertaken by a competent verification team and involves the following:

☐ the desk review of documents and evidence submitted by the project participant in context of the reference VCS guidelines issued by Verra

☐ verify whether the project, implementation plan, and calculated emission reductions achieved in this monitoring period meets the requirements of VCS Standard v4.5, VCS program guide v4.4 & VCS program definition v4.4

☐ evaluate whether the implementation of the project activity is in conformance with the registered and approved implementation plan given in VCS PDMR

☐ undertaking/conducting site visit or remote site visit, interview, or interactions with the representative of the project participant, (in this project, it was physical site visit)

☐ reporting audit findings with respect to clarifications and non-conformities and the closure of the findings, as appropriate and

☐ preparing a draft validation and verification opinion based on the auditing findings and conclusions

☐ technical review of the draft validation and verification opinion along with other documents as appropriate by an independent competent technical review team

☐ finalization of the validation and verification opinion (this report)

☐ an independent technical review team reviews the validation and verification report made by the verification team. After the final report is accepted by the technical reviewer it is then approved by Earthood which is processed further according to the VCS procedures

Earthood has performed joint validation and verification based on a risk-based approach focusing mainly on the significant risks to meet the qualification criteria and the ability to generate VCUs. The verification is not meant to provide any consulting towards the client. However, stated request for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Reasonableness of Assumptions and Level of Assurance

For the validation, VVB has attained reasonable level of assurance for assumptions, limitations, and methods that support a statement about the outcome of future activities. For the verification, the level of assurance achieved is also reasonable. In accordance the VCS Standard v4.5 para 4.1.2 and 4.1.8, the level of assurance of this verification report is reasonable. VVB has reviewed sufficient evidence to verify the project implementation, data, and parameters, and achieved emission reductions calculations for this monitoring period. Further clarifications were asked, and all the discrepancies found during the verification assessment have been raised as audit findings and successfully closed.

1.4 Summary Description of the Project

Earthood Services Ltd. (Earthood) has carried out the joint validation and verification assessment of the project activity “Kijani Forestry Smallholder Farmer Forestry Project” VCS ID 4475. The

assessment covered the crediting period from 22/08/2022 to 21/08/2062 and monitoring period from 22/08/2022 to 21/08/2023 (one year, inclusive of both the dates). The project activity falls under sectoral scope 14, Agriculture Forestry and Other Land Use (AFOLU) type and category Afforestation, Reforestation and Revegetation (ARR) as per the latest VCS Standard, version 4.5. This is a grouped project and falls under "Project category" as per section 3.10 of the VCS standard, v4.5 The project involves afforestation, plantation of tree species in the fields, hereafter is referred as "gardens" of the farmers included in the project. The project is being implemented in Uganda. The project is applied approved CDM methodology AR-ACM0003 “Afforestation and reforestation of lands except wetlands” (version 02.0) and its associated tools to quantify the amount of greenhouse gas reductions achieved through this project. This project has multiple project proponents viz., One Carbon World and Kijani Forestry. Other entities involved in this project is CLIMIT. The calculation of project emissions reductions achieved for the current monitoring period has been carried out in a transparent and conservative manner and were made available in emission reductions calculations spreadsheets for this joint validation and verification assessment. The estimated total and annul emission reductions verified for the crediting period is *19,829,984*tCO2 (long-term average) and *495750* tCO2/yr respectively; and the achieved annual emission reductions for the first monitoring period is 850 tCO2. Along with this, project is also contributing to 1, 8 and 15.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

The verification process adopted by the VVB is in accordance with the Earthood internal auditing procedures and VCS Standard version 4.5 /3/ and VCS Validation and Verification Manual version 3.2 /6/ and are as follows.

The joint validation and verification process involved the following.

- A review of the data and information presented by the project proponent in context of the reference VCS rules and guidelines to verify their completeness.

- Undertaking site visit, interview, or interactions with the representative of the project proponent, project employees and local stakeholders,

- A review of the monitoring plan, the monitoring methodology including applicable tool(s) and, where applicable, the applied standardized baseline, and the quality assurance and quality control procedures.

- A review of calculations and assumptions made in determining the GHG data and emission reductions.

- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

- Site inspections were carried out including interviews with representatives of PP. The sampling approach followed by the verification team is given in section 2.4 of this report

2.2 Document Review

The VCS joint validation and verification of the project was performed by Earthood through the document review and remote site visit completed in line with the requirements specified in the VCS standard, VVB manual and applied methodology AR-ACM0003 and other VCS documents.

Additionally, cross checks were performed for information provided in the Joint project document and monitoring report (PDMR) using other independent source of information. The list of documents reviewed during the validation and verification process is provided under appendix III of this report. Physical site inspection was carried out by Team Leader and TA (14.1) Expert that covered physical inspection of project activity, interviews with PP and relevant stakeholder, review of photographic evidence and videos of sampled sites of plantation plots. Below are the details of verification team members and technical reviewer.

Assessment team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	Physical site inspection	Interviews	Verification findings
1.	Team Leader, (New)	IR	Borah	Nepolion	Central Office	Y	Y	Y	Y
2.	Team Leader (Old)	IR	Sharma	Riya	Central Office	Y	Y	Y	Y
3.	TA Expert (14.1) and Validator	IR	Borah	Nepolion	Central Office	Y	Y	Y	Y
4.	Local Expert	EI	Sam Khaukha	Julius	Central Office	Y	N	N	Y
5.	Remote Sensing & GIS Expert	IR	Hooda	Waris	Central Office	N	N	N	Y
	Remote Sensing & GIS (Trainee)	IR	Dhar	Atulya	Central Office	N	N	N	Y

Technical reviewer and approver of the verification report

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)
1.	Technical Reviewer	IR	Gautam	Ashok	Central Office
2.	TA Expert (14.1) to TR	IR	Nazneen	Sadaf	Central Office
3.	Approver	IR	Singh	Kaviraj	Central Office

2.3 Interviews

Team Leader and TA Expert from the assessment team conducted the physical site visit from 22/01/2024 to 25/01/2024. Stakeholders including PP interviewed during site visit are listed below.

No.	Interviewee			Date	Subject	Team member(s)
	Last name	First name	Affiliation			
1	Milliken	Beau	Carbon Lead, Kijani Forestry	22/01/2024	Role and involvement in the project, project objectives, implementation status of activities that led to intended GHG benefits, monitoring and management activities Role and involvement in the project, project objectives, implementation status of activities that led to intended GHG benefits, monitoring and management activities	Riya Sharma, Nepolion Borah
2	Adongping	Gloria	Kijani MEL			
3	Neely	Quinn	CEO, Kijani Forestry			
4	Taimaro	Jon	Kijani Forestry			
5	Andera	Kevin	Head of operation, Kijani Forestry			
6	Mukibi	Paul	Manager, Kijani Forestry			
7	Inthamousse	Agustin	Carbon external consultant, CLIMIT			
8	Lameck	Ojok	Monitoring and Evaluation team			
9	Ronald	Ochura	Monitoring and Evaluation team			
10	Daniel	Olelle	Monitoring and Evaluation team			
11	Nicholus	Opiyo	Reot Kheri			
12	Michael	Okello	Farmer, Omoro	22/01/2024	Implementation of project activities, land ownership, contract agreement with the Kijani Foresty, LSC meeting, Grievance mechanism	Riya Sharma, Nepolion Borah
13	Rose	Ajok	Farmer, Omoro	22/01/2024		
14	Rackarac	Oscar	Farmer, Omoro	23/01/2024	Implementation of project activities, land ownership, contract agreement with the Kijani Foresty, LSC meeting, Grievance mechanism	Riya Sharma, Nepolion Borah
15	Keric	Ocaya	Farmer, Omoro	23/01/2024		
16	Florence	Okol	Farmer, Omoro	23/01/2024		
17	George	Ocan	Farmer, Omoro	23/01/2024		
18	Margret	Lakot	Farmer, Omoro	23/01/2024		
19	David Wilson	Kitara	Farmer, Omoro	23/01/2024		
20	Josephine	Adwar	Farmer, Agago	24/01/2024	Implementation of project activities, land ownership, contract agreement with the Kijani Foresty, LSC meeting, Grievance mechanism	Riya Sharma, Nepolion Borah
21	Esther	Akidi	Farmer, Agago	24/01/2024		
22	Bianka	Akidi	Farmer, Agago	24/01/2024		
23	Bosco	Komakech	Farmer, Agago	24/01/2024		
24	Acaye	Grace	Farmer, Agago	24/01/2024		
25	Rafael	Oyugi	Farmer, Agago	24/01/2024		
26	Simond	Okidi	Farmer, Agago	24/01/2024		
27	Casto Lagen	Ocen	Farmer, Agago	24/01/2024		

2.4 Site Visits

The project is applying CDM approved methodology AR-ACM0003, Afforestation and reforestation of lands except wetlands, version 02.0. VCS standard and applied methodology AR-ACM0003 does not instruct to use particular sampling approach to follow for field remeasurement activities and site inspection, rather it is mentioned in the VCS standard that "where, due to the number of project activity instances, it is unreasonable to undertake an individual assessment of each initial or new instance, the validation/verification body shall document and explain the sampling methods employed for the validation of such instances. Such sampling methods shall be statistically sound" (para 4.1.23 VCS standard, Version 4.5).

The Validation and Verification Body (VVB) has structured its sampling approach to ensure both statistical rigor and practical feasibility for the project in Uganda, taking into account local conditions and the need for representative data.

VVB selected a confidence level of 90% with a precision of ±30% for a population size of 864. This level strikes a balance between statistical robustness and operational feasibility, given the large scope of the project. The 90% confidence level indicates that VVB can be reasonably assured that findings based on the sample will accurately represent the overall project population, while a precision level of 30% reflects an acceptable margin given potential variability in agricultural data from different locations.

Out of the total population, VVB has selected 8 samples each for both validation and verification, resulting in 16 unique sampling points. This division allows VVB to assess the consistency and reliability of data under both scopes, ensuring the comprehensive review necessary for project validation. Selecting an equal number of samples for both scopes maximize coverage and consistency across the two processes.

To minimize bias and enhance the representativeness of the sample, VVB employed a random selection process using a randomizer tool in the project database's Excel sheet. This method ensures each plot or garden in the population had an equal chance of being selected, supporting the reliability and validity of the sample for broader extrapolation.

The project spans multiple districts in Uganda—specifically Omoro, Agago, Kitgum, Oyam, and Gulu—within the first Project Area of Interest (PAI). Due to political unrest in some districts, site visits will be focused on the Omoro and Agago districts, as these regions are accessible and can safely be reviewed. This adaptation addresses safety concerns while maintaining the sampling approach's representativeness, as Omoro and Agago districts sufficiently capture the agronomic and environmental conditions typical of the overall project area.

The sampling approach taken by VVB reflects a well-considered balance between statistical reliability and practical constraints, ensuring both data integrity and field feasibility. The selected districts are expected to provide insights reflective of the entire project area, making the approach effective for achieving project validation and verification under real-world constraints.

Scope of project	Location	VVB samples
Validation	Omoro and Agago districts, Uganda	8
Verification	Omoro and Agago districts, Uganda	8

To ensure a comprehensive understanding of the project's impact and gather primary data, the Validation and Verification Body (VVB) conducted a series of interviews and site visits with local stakeholders and participant farmers on 22nd January 2024 to 24th January 2024. These activities were structured to provide both qualitative insights from stakeholders and quantitative data from farmers' plantation areas, reinforcing the robustness of the data collection process. The initial interviews with the project proponent and local stakeholders took place on January 22, 2024. This helped the audit team to understand and gather insights on community perspectives, project implementation, and any challenges observed by the stakeholders. Following these discussions, VVB proceeded with site visits to the farmers' plantation areas to validate the forest inventory data and observe project outcomes on the ground. This remeasurement process involved reassessing tree counts, species, DBH, and height. On the first day (January 22, 2024), two farmers were interviewed. On January 23 and January 24, interviews and inventory measurements were conducted for 6 farmers in Omoro and 8 farmers in Agago, respectively. This approach ensured coverage across key project areas, capturing data that reflected diverse geographical and environmental conditions within the project scope.

Reasonable Level of assurance agreed with the client.

Photographic, documents shared by PP to achieve the agreed level of assurance.

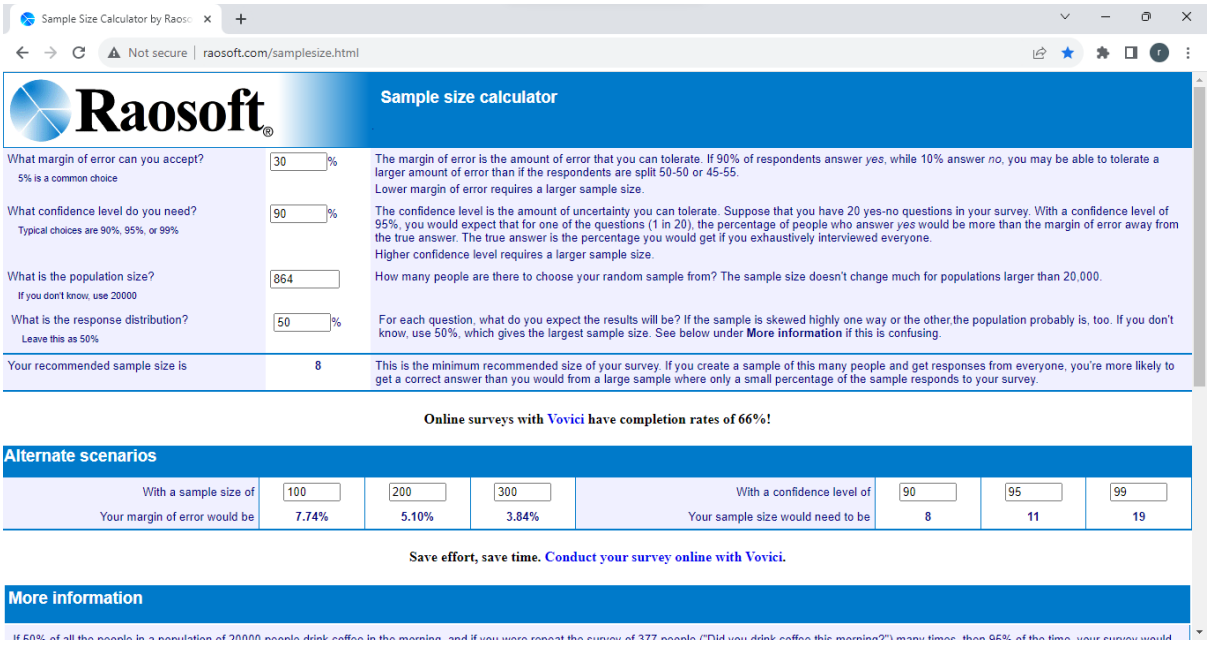
Evidence are being gathered during the desk review as well as during the physical audit.

Applied Methodology –

AR-ACM0003, Afforestation and reforestation of lands except wetlands, version 02.0.

e) Thorough review of project documentation has been taken to assess the risk of potential errors, omissions or misrepresentations of project details and especially the calculations of ERRs.

f) Evidence gathering plan has been prepared before site visit and documented in F69, STRESM form.



16 farm visits of Omoro and Agago districts, Uganda (8: Validation; 8: Verification)

Interviews conducted with representative from Once Carbon World, CLIMIT, Kijani Forestry, including but not limited to field team, farmers were carried out to confirm the project design, monitoring and implementation plan. Kijani team also explained the procedure of carbon measurement and process on field and its reporting and analysis. They also confirmed the SDGs benefits claimed for the first monitoring period.

The assessment team has reviewed the shared evidence and considered all the responses of the interviewees during site visit. The records of photographs and videos were also checked /56//57/. All the stakeholders supported the project and shared their feedback. The remote site visit completed for the project in compliance with the VCS VVB Manual, v3.2 /5/. Evidence along with other supporting documents submitted by PP to the verification team for the assessment are listed in appendix III.

2.5 Resolution of Findings

The process for raising the findings (corrective actions, non-conformities, or other findings) by the verification team is carried out after thoroughly reviewing supporting documents shared by project proponent. Observations of remote site visit inspection were also raised as audit findings. As an outcome of the verification process, the verification team can raise different types of findings as per the following understanding:

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met

Where a non-conformance arises the team leader shall raise a Corrective Action Request (CAR). A CAR is issued, where:

☐ The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions.

☐ The VCS standard, methodology and modules requirements have not been met; - there is a risk that emission reductions cannot be monitored or calculated.

☐ The validation process may be halted until this information has been made available to the team leader's satisfaction. Information or clarifications provided as a result of a CL may also lead to a CAR.

A Clarification Request (CL) will be issued where information is insufficient, unclear or not transparent enough to establish whether a requirement is met.

A Forward Action Request (FAR) will be issued when certain issues related to project implementation should be reviewed during the following verification assessment.

During the verification process, total 17 CLs and 13 CARs were raised and resolved satisfactorily. The list of CARs/CLs raised, and the responses provided, the means of verification, reasons for their closure, and references to correction in the relevant documents are provided in Appendix IV of this report. 01 FARs were raised during this joint validation and verification assessment.

2.5.1 Forward Action Requests

One FAR has been raised from this validation and verification assessment. As stated by the Project Proponent (PP), "For future verifications, the PP will create its own allometric equations to ensure compliance with the methodology and methodological tools." This commitment is also documented in the supporting file, Kijani - Selection of Allometric Equation for Ex-Post ERR_v2.pdf.

In alignment with this statement, the audit team has issued this Finding and Recommendation (FAR) to ensure compliance in subsequent verifications. Specifically, the Validation and Verification Body (VVB) must validate the allometric equation developed by Kijani during the next verification cycle. The newly developed equation must adhere to the requirements outlined in points 8–19 of the methodological tool, Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities. Furthermore, the equation must be conservative in nature, ensuring that biomass estimations do not overstate carbon sequestration potential.

3 VALIDATION FINDINGS

3.1 Project Details

- Project type, technologies and measures implemented, and eligibility of the project

Earthood Services Pvt. Ltd. (Earthood) has carried out the joint validation and verification assessment of the project activity “Kijani Forestry Smallholder Farmer Forestry Project” VCS ID 4475. The assessment covered the crediting period from 22/08/2022 to 21/08/2062 and monitoring period from 22/08/2022 to 28/08/2023 (one year, inclusive of both the dates). The project activity falls under sectoral scope 14, Agriculture Forestry and Other Land Use (AFOLU) type and category Afforestation, Reforestation and Revegetation (ARR) as per the latest VCS Standard, version 4.5. This is a grouped project and falls under "Project category" as per section 3.10 of the VCS standard, v4.5 The project involves afforestation, plantation of tree species in the fields, hereafter is referred as "gardens" of the farmers included in the project. The project is being implemented in Uganda. This grouped project covers following districts of Uganda under first PAI; Omoro, Agago, Kitgum, Oyam and Gulu districts. The project is applied approved CDM methodology AR-ACM0003 “Afforestation and reforestation of lands except wetlands” (version 02.0) and its associated tools to quantify the amount of greenhouse gas reductions achieved through this project. This project has multiple project proponents viz., One Carbon World and Kijani Forestry. Other entities involved in this project is CLIMIT.

The project is implemented in farmer’s land. The participating farmers transferred ownership and rights of the carbon credits to Kijani Forestry through a partnership-based commercial contract. During a site visit, the audit team confirmed that this contract was collaboratively developed with input from farmers, local district authorities, the federal government, and both local and international councils. Upon reviewing the contract, the audit team verified that it clearly states Kijani has no intention of claiming land ownership or pursuing any legal ownership rights through the agreement. Instead, the contract outlines the foundational working relationship between Kijani and the farmers. The land ownership at individual level is confirmed by Rwot Kheri and community leaders. Rwot Kheri, District head, village saving & leaning associate (VSLA), village group head and secretary, community leaders and cultural head were confirmed to be part of local stakeholder consultation and project related communication. The farmers confirmed the participation in this project with their willingness to plant trees in their fields. Some planted with timber and charcoal species. During the onsite field visit, the audit team confirmed that the species planted on the farmers’ land included *Maesopsis eminii, Melia volkensii, Albizia lebbek, Faidherbia albida, Gmelina arborea, Acacia polyacantha, Senna siamea*, and *Terminalia glaucescens*. Based literature survey it is confirmed that all species are to be either native or non-indigenous but useful for plantation. The farmers own field, in each field tree species are planted in small land area called garden. There is different plantation model as per the willingness and interest of farmers for plantation. Some grow trees in boundaries of their land while some grows in square patches or block in their fields. In this project, the calculation of

biomass has been based on number of trees planted in all gardens. For the first verification, the project participants included 790 gardens that were integrated into the project in 2022, as verified by the audit team through GIS analysis. The audit team confirmed that a total of 174,111 trees were planted across these gardens, based on plantation records provided by the participants. The calculation of project emissions reductions achieved for the current monitoring period has been carried out in a transparent and conservative manner and were made available in emission reductions calculations spreadsheets for this joint validation and verification assessment.

VVB checked the information provided in PDMR /1/ for project type, technologies and measures implemented, and eligibility of the project. It was confirmed that this project design is eligible under AFOLU, ARR category as the project involved plantation to tree species in agricultural land of farmers. The project is qualifying as per VCS standard version 4.5 appendix 1 for project type ARR. More details are provided in section 3.4 to demonstrate the eligibility of the project in adherence to applied methodology. Desk review, review of evidence and site visit observation confirmed that project implementation. Detailed assessment is provided on each aspect in following sections of this report.

- Project design, including eligibility criteria for grouped projects

The assessment team validated the project design against the VCS requirements and applied methodology. The eligibility criteria as mentioned in sections 2 and 3 of the PDMR has been verified against the following requirements:

The eligibility criteria of grouped projects in line with VCS Standard 4.5, para 3.6.16 and 3.6.17 have been checked. The means of validation has been summarised in below table.

1. Project Instances (PIs) must meet the applicability conditions set out in the methodology applied to the project.

VVB assessment: It was confirmed that first PAI meets the applicability criteria of applied methodology /10/. Please refer 3.3.2 section of this report. Furthermore, PP has confirmed in the PD section 1.4 that PI1 has also complied with all the applicability conditions of the applied tools /11//12//13//14//15//16//17//18/.

2. Use the technologies or measures specified in the project description.

VVB assessment: The technology identified in this project is the afforestation activity in the gardens belong to farmers included in this project /1/. The PAIs introduced in the validation are the four districts of Uganda i.e., Omoro, Agago, Kitgum, Oyam and Gulu. The site visit observations /57/ confirmed that the included PAI is in conformance of this eligibility criterion.

3. Apply the technologies or measures in the same manner as specified in the project description.

VVB assessment: It was confirmed through evidence and site visit observations that all gardens included in this project are subjected to plantation of different species as per different plantation

models. MEL Handbook evidence /31/ is the main document reviewed to confirm the project conceptualisation, implementation strategy and all the activities and training conducted on site /31/. The Nursery Hub Gardens Forest Management Plan /30/ provided the detailed description of project design and implementation. VVB was able to confirm the project design by reviewing the information provided in plan /30/. The seeds of selected species have been confirmed from document Nursery Visit samples /36/. The staff list and training manual /37//38/ provided the assurance that PP has sufficient resources to carry out the plantation activity. To further check, VVB reviewed the farmer contracts /34/ on site and interviewed the stakeholders to reconfirm the project activity. Photographs and written records have been maintained /57/ by VVB.

The validation team has checked the eligibility criteria as mentioned in sections 2 and 3 of the PD against following requirements:

☐ AFOLU specific requirements of Section 3.1 and Section 3.2 of the VCS Standard v4.5

☐ This baseline conforms to the methodological requirements and Section 3.12.1 of the VCS Standard, v4.5

☐ The project crediting period chosen is as per Section 3.8.3 of the VCS Standard, v4.5

☐ The project validation is according to Section 3.7.3 VCS Standard, v4.5

☐ The Project has used a current and valid, approved, and up-to-date methodology to calculate its greenhouse gas emissions (GHG) reductions and removals in a conservative manner including the full application of any tools or modules referred to by a methodology as required by Section 3.1.1 & 3.1.2 of the VCS Standard, v4.5

☐ The Project has demonstrated its additionality requirements as set forth in section 3.13.1(1) of the VCS Standard, v4.5

☐ Detailed assessment has been provided in following sections of this report.

The validation team confirms the project activity conformance with VCS standard as follows:

☐ AFOLU specific requirements of Section 3.1 and Section 3.2 of the VCS Standard v4.5

☐ The Project falls under the ARR category in accordance with Section 3.2.1, Section 3.2.8, Section 3.5.1, and appendix point numbers A1.1 of the VCS Standard, v4.5

☐ This baseline conforms to the methodological requirements and Section 3.12.1 of the VCS Standard, v4

☐ The project crediting period chosen is as per Section 3.8.3 of the VCS Standard, v4.5

☐ The project validation is according to Section 3.7.3 VCS Standard, v4.5

All new instances to be incorporated must meet the technical land eligibility criteria for carbon forest projects. Therefore, any project area that wants to join the grouped project must meet the following conditions:

1. **AFLOU Activity Application**: The project must apply under the AFLOU category for Afforestation, Reforestation, and Revegetation (ARR). The methodology used is AR-ACM 0003, "Afforestation and Reforestation of Lands Except Wetlands."

2. **Location within Uganda**: The activity must be located within Uganda's boundaries. The initial Project Activity Instances (PAIs) fall within the project boundary as outlined in the project KML file. Geographic boundaries (KML polygons or SHP files) of all future PAIs will be assessed to ensure they are within Uganda's boundaries.

3. **Compliance with Local Laws and Regulations**: Activities must comply with local laws and regulations governing afforestation, with all necessary documentation up to date. Before onboarding new farmers, the Project Proponent (PP) ensures there are no legal issues or unresolved conflicts within the new PAIs.

4. **Inclusion in Kijani's Forest Program**: Activities must involve reforestation with woody species and be part of Kijani's Forest program.

5. **VCS Standard Compliance**:

    - **Planting Start Date**: Planting must not have occurred before the project start date (2022-08-22). This is verified using site plantation records, nursery registers, geotagged pictures, and other documentation.

    - **Baseline Continuity**: The baseline must represent the continuation of pre-existing activities and not include previously planted forests.

    - **Protection of Native Ecosystems**: There must be no destruction of the pre-existing native ecosystem within at least 10 years prior to the project start date.

6. **Project Methodology and Tools Compliance** (see Sections 3.1 and 3.2):

    - **Exclusion of Wetlands and Organic Soils**: Project areas must not include wetlands or occur on organic soils, as defined by the methodology.

    - **Low Baseline Inputs**: Baseline input levels must be low or null.

7. **Avoidance of Double Accounting**: The area must not be involved in another GHG program or receive other forms of credit for these activities, preventing redundancy or double accounting of carbon removals.

8. **Consistency with Additionality Characteristics**: The area must demonstrate characteristics of additionality consistent with the initial project instances (see Sections 3.4 and 3.5).

9. **Adherence to VCS Standard Criteria 2 and 3 (Section 3.6.16)**:

    - **Criteria 2**: Use technologies and measures specified in the Project Document (PD), such as no-till practices and species provided by Kijani in agroforestry systems.

- **Criteria 3**: Apply these technologies and measures as outlined in the PD, specifically in charcoal, boundary, or timber plantation systems

The Project has used a current and valid, approved, and up-to-date methodology to calculate its greenhouse gas emissions (GHG) reductions and removals in a conservative manner including the full application of any tools or modules referred to by a methodology as required by Section 3.1.1 & 3.1.2 of the VCS Standard, v4.5

The Project has demonstrated its additionality requirements as set forth in section 3.13.1(1) of the VCS Standard, v4.5

- Project proponent and other entities involved in the project

This project has multiple project proponents viz., One Carbon World and Kijani Forestry. Other entities involved in this project is CLIMIT only. VVB checked the Partner Collaboration Framework Agreement, Uganda /44/ to confirm the PP information and caron credit rights. All information given in PDMR and evidence /44/ were found consistent and complete.

- Ownership

The ownership of the carbon credits belongs to Kijani. These can be seen in every contract signed with the farmer. Project proponents demonstrate they have the legal right to control and operate project or program activities because Kijani participates in the timber and charcoal business with the farmer. They both decide when is best to harvest and where to sell the timber. The submitted evidence “Partner Collaboration Framework Agreement Uganda” dated 09/02/2024 confirmed that Partner (Kijani Forestry PBC) are the owners of carbon credits generated from the project that commenced on the project start date (as uploaded in VERRA registry from the Project Design Document). Since the involvement of CLIMIT is clarified and not substantially included in the project carbon credits allotment.

- Project start date

The start date of the project is 22/08/2022 which is the earliest date in which the first trees of this project have been planted and verified according to the records and photo with the GPS coordinates.

- Project crediting period

The crediting period of the project spans from 22/08/2022 to 21/08/2062, the total year of crediting is 40 years. PP has correctly identified project crediting period in line with Section 3.9.3. of the VCS Standard, v4.5. This also ensure that project adherence to VCS Standard version 4.5 section 3.2.11 requirement of “Projects shall have a minimum of a 40-year project longevity.”

- Project scale and estimated GHG emission reductions or removals

The scale of the project is “Large Project” as per the VCS standard version 4.5 section 3.10.1. PP has correctly identified the scale of the project.

- Project location

The project boundary is Uganda. This grouped project covers following districts of Uganda under first PAI; Omoro, Agago, Kitgum, Oyam and Gulu districts. Future instances will be included within the boundary of Uganda. VVB checked the KML files submitted by PP to confirm this detail /40//41//42/. In line with the VCS Standard v4.5, section 3.11.1 and 3.11.2, it was found that the PAIs included in this project are clearly delineated in the map and non-eligible areas within the boundary of the KML files are excluded from the area calculation. It has been assessed and confirmed that the submitted KML file consists of polygons demarcating areas where actual project activities are to be implemented for the initial project instance with area attribute added for verification. Furthermore, this has been confirmed that the non-eligible areas are not accounted in ERRs calculation.

- Conditions prior to project initiation

As given in the section 1.13 of the PDMR, the baseline scenario in the project area involved traditional agriculture. VVB interviewed the farmers to confirm the conditions prior to project initiation and it was confirmed that the area was earlier used for agriculture purposes and the pre project condition in the areas were degraded land primarily used for agriculture. VVB also checked the pre project condition by referring to historical satellite images. Earth Observation is used to assess the historical satellite images for the farms which fell on the following categories: Forest cover (FAO) and Primary Forests, Protected Areas (GFW). Further, FAO land cover layers are overlapped to evaluate the land cover of the project's area 10 years ago. Simultaneously, protected areas and primary forest layer from the Global Forest Watch are used to discard any of the project areas which fall into any of these two categories. IPCC soils categories are also assessed to determine if any of the gardens are under wetlands. Pre project condition is sufficiently justified in the PDMR.

- Project compliance with applicable laws, statutes and other regulatory frameworks

PP has provided the list of laws and regulations in section 1.14 of the PDMR and demonstrated the compliance with the laws, statutes and other regulatory frameworks. VVB reviewed the laws /58/ and confirmed that the project activity of introducing tree species in farmers lands is not mandated by any regional, local or national regulation and nor supported by any subsidies.

The Project has been designed and implemented to comply with the applicable national laws and regulations of Uganda. This includes the relevant laws, acts and regulations concerning relevant aspects of carbon emission and carbon offsetting and is clearly presented in section 1.14 of the PD/1/.

Hence, it has been concluded that the project is implemented and adhere to the respective laws and regulations of the project area. Hence, it was concluded that the project is in line with the section 3.1.4 of the VCS Standard v4.5.

- Participation under other GHG programs:

The project has not been registered or is seeking registration under any other GHG programs. The project has not been rejected by any other GHG programs. PP has confirmed and submitted undertaking document /59/ which was checked to fulfil this requirement.

- Rejection by other GHG programs

The project has not been rejected by any other GHG programs. PP has confirmed and submitted undertaking document /59/ which was checked to fulfil this requirement

- Other forms of credit and supply chain (Scope 3) emissions:

This section is not applicable in this project as the project is not involved in supply chain (Scope 3) emissions. Moreover, requirements of section 3.24.7 of VCS standard v4.5 is effective for all project requests submitted on or after 1 March 2024. The project submission is done before 1 March 2024 and therefore no further demonstration of adherence to the requirements is required.

- Additional information relevant to the project, including:
  - Leakage management for AFOLU projects

    VVB confirmed that there is no leakage expected and recorded in this project activity as per the VCS standard and applied methodology /3//10/.

  - Commercially sensitive information

    PP has recorded no commercially sensitive information in the PDMR /1/. All the project documentation has been available to VVB and there is only one version PDMR submitted for assessment /1/.

  - Sustainable development contributions

    PP has targeted SDG 1, 8 and 15. For SDG 1, staff list /37/, 2022 DCs and SCs Payroll /52/, 2022 Intern salary Payroll /53/ and 2022 Office Staff Payroll /54/ have been reviewed. The claims made for SDGs 1 and 8 have been achieved by PP. For SDG 15, number of trees planted record have been checked. /41//51/

VVB confirmed that details provided in PDMR/1/ is accurate, complete, and provides an understanding of the nature of the project, and whether the project has been implemented as described in the project description. This has been confirmed by reviewing the supporting document submitted for assessment and recorded in appendix III of this report. PP has not sought any methodology deviation. All data has been consistently provided following the requirements of VCS standard and applied methodology. It was confirmed that the project is likely to achieve estimated GHG emission reduction or removals. Since, the current assessment is joint validation and verification, VVB checked the achieved ER claimed for first monitoring period and confirmed that the calculation made are correct, complete and consistent.

3.2 Participation under Other GHG Programs

The project is not seeking participation under other GHG programs. PP has confirmed and submitted undertaking document /59/ which was checked to fulfil this requirement. It is concluded that the project is eligible to participate under the VCS Program.

3.3 Safeguards

3.3.1 No Net Harm

In terms of environmental impact, the plantation activity has been done using the species that are native and does not harm the project area. Moreover, species that are non-native confirmed to be beneficial for planation. The evidence signed and stamped by District Forestry Officer of Gulu District, Uganda confirmed that Gmelina arborea does not impact negatively to social, economic and environmental aspects in the project. Moreover, the species is encouraged to be planted in Uganda and reported to recommend for planation in North as it seemed to have huge potential as timber species and for charcoal production. /29/ In terms of socio-economic impact, the major stakeholder is farmers who are involved from nursery activities to plantation in their respective field. They are well aware of planation schedule and willingly confirmed their participation in this project. Site visit observation confirmed that there is only positive impact. /59/

Hence, VVB confirmed that there is no potential negative environmental and socio-economic impacts identified by the project proponent. The project has demonstrated complete adherence to requirement of section 3.19.2 of VCS standard.

3.3.2 Local Stakeholder Consultation

PP has carried stakeholder consultation prior to project start date and follow up consultation throughout the years. The key stakeholders include farmers, district forest offices, local land tenure leadership (LC1 and Rwot Kweri). Stakeholder consultation meeting records /55/ have been reviewed to confirm the same. Section 2.2 of the PDMR provided the complete information of LSC and outlines the project proponent's commitment to maintaining continuous communication and consultation with local stakeholders throughout the project's duration. This ongoing process aims to enable stakeholders to express concerns about potential negative impacts during implementation. Key elements of the communication strategy include Sharing information about project design, implementation, and monitoring results, Discussing the risks, costs, and benefits associated with the project for local stakeholders, informing stakeholders about relevant laws and regulations regarding workers' rights in the host country and Explaining the VCS Program validation and verification process, including site visits by the VVB. It was confirmed that the stakeholder agreed to the project design and showed enthusiasm to implement the project. Mechanism of ongoing communication has been mentioned through identified themed meetings. The communication process involves receiving and addressing

grievances within a reasonable timeframe, utilizing culturally appropriate conflict resolution methods. It includes: (a) distributing a "Document for Public Communication" to stakeholders, which will provide project information and a permanent email for ongoing feedback. Negative comments will trigger the grievance redress procedure automatically, (b) making project information accessible on the project proponent's website, including a link to Verra for further details and (c) conducting remote interviews and meetings with stakeholders to gather comments and refine project design. Additionally, a registry system will track all communications with stakeholders, documenting received emails and responses, as well as recording any concerns or comments in the communication registry.

Section 2.2 of the PDMR stated that ongoing communication will be tailored to the cultural context of the project's location. Proposed communication methods include: (a) Availability of Kijani's Parish Coordinators for inquiries, (b) A dedicated email address and (c) A webpage featuring FAQs and a database for collecting questions. Complaints received verbally must be documented, and informal resolutions should also be logged. All grievances will be recorded in a database with unique identifiers for tracking. Upon filing a complaint, individuals will receive a receipt and information about procedures and timelines, with staff trained to assist those who may be illiterate. The grievance process emphasizes timely responses, with unresolved issues referred to a designated grievance focal point for assessment within one week. Grievances will be categorized based on their nature and potential impact, allowing for prioritization based on risk. Key principles of grievance resolution include respecting every complaint, documenting issues, gathering relevant facts, and evaluating solutions. Management will follow up to assess any changes in stakeholder attitudes.

The project conforms with the 3.16.2, 3.16.3 and 3.16.4 of the VCS Standard v4. During VVB site visit, it was confirmed that PP has communicated information about the project design and implementation, risks, costs and benefits, relevant laws and regulations and the process of VCS Program validation completely.

Based on the assessment by the audit processes, the VVB confirm that the PP has established a comprehensive and well-structured stakeholder consultation and communication strategy, emphasizing transparency, inclusivity, and responsiveness to stakeholder concerns. The ongoing consultation process provides a platform for stakeholders to express any concerns regarding potential negative impacts during project implementation, and the grievance redress mechanisms ensure that all issues are addressed in a timely and culturally sensitive manner.

3.3.3 Environmental Impact

As discussed in section 3.3.1 of this report, project has only positive environmental impact. In terms of environmental impact, the plantation activity has been done using the species that are native and does not harm the project area. Moreover, species that are non-native confirmed to be beneficial for planation. The evidence signed and stamped by District Forestry Officer of Gulu District, Uganda confirmed that Gmelina arborea does not impact negatively to social, economic and environmental aspects in the project. Moreover, the species is encouraged to be planted in

Uganda and reported to recommend for planation in North as it seemed to have huge potential as timber species and for charcoal production /29/.

3.3.4 Public Comments

In accordance with the requirement in para 3.17.6 of the VCS standard v4.5 “All projects are subject to a 30-day public comment period. The date on which the project is listed on the project pipeline marks the beginning of the project’s 30-day public comment period”.

This project was open for public comment for 30 days from 06/10/2023 to 05/11/2023/21/ for public comments. Comment received during the commenting period, as evident from the VCS pipeline in the web interface was addressed by PP in the audit finding rounds. Refer Appendix IV for details.

3.3.5 AFOLU-Specific Safeguards

The local stakeholder identification process has been clearly given in section 2.5 of the PDMR. The project identified the risks related to food security, land loss, and climate change adaptation, which stakeholders can discuss during consultations. The project aims to enhance farmers' socio-economic status and break the poverty cycle by planting trees alongside crops, ensuring adequate land for sustenance. The project’s Human Resources manual strictly prohibits sexual harassment, emphasizing a zero-tolerance policy and clear reporting procedures. Ongoing consultation with local stakeholders is integral to the project, allowing for continuous communication through group meetings, direct contact with trained Parish Coordinators, and multiple feedback channels. This engagement addresses project design, potential risks, and compliance with relevant laws, ensuring that stakeholder concerns are heard and resolved promptly.

Feedback management process of the project ensures that once concerns or comments from stakeholders are received, they are acknowledged and considered, potentially leading to updates in project design. If necessary, these modifications will be reflected in the project description. This ongoing dialogue allows the project proponent to evaluate stakeholder impacts and incorporate their concerns into the project.

The project recognizes and supports local stakeholders' property rights, ensuring that farmers retain rights to their land and the trees planted. To minimize ecological damage, the project will use tree species appropriate for the region and refrain from using synthetic fertilizers or harmful chemicals. Kijani also implements a farmer support plan that includes permanent nurseries, training, and technical assistance, with field staff actively involved in local communities. This continuous engagement fosters sustainable forest management practices and creates economic opportunities, contributing to the project’s long-term success. Project evidence /79//80/ and independent desk review /81//82/ have been used to assess the grievance redress mechanism and the FPIC process.

The validation team finds the information in the sections 2.5 of the PD /1/ is consistent with overview of substantive updates to VCS rules & requirements. VVB concluded that the project is in compliance with the requirements of the VCS Standard Version 4.5 section 3.18.15.

3.4 Application of Methodology

3.4.1 Title and Reference

Title and reference of the applied methodology and tools in the project has been given below.

- Version 2.0 of methodology AR-ACM0003 "Afforestation and reforestation of lands except wetlands"
- Version 01 of "Combined tool to identify the baseline scenario and demonstrate the additionality in A/R CDM project activities".
- Version 04.0.0 of "Estimation of non-CO2 GHG emissions from burning of biomass attributable to a CDM A/R project activity".
- Version 02.0 of "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity".
- Version 01.1.0 of "Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities".
- Version 02.1.0 of "Calculation of the number of sample plots for measurements within A/R CDM project activities".
- Version 04.2 of "Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activity"
- Version 03.1 of "Estimation of carbon stocks and change in carbon stocks in deadwood and litter in A/R CDM project activity"
- Version 01. 1 "Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities

The validation team confirms that PP has provided correct references of the applied methodology and tools in the section 3.1 of the PDMR /1/ and correctly applied the methodology. Applicability criteria has been checked and validated in next section of this report. The validation team confirms that the methodology and tools, and the specific versions of them applied by the project, were valid at the time of validation.

3.4.2 Applicability

The validation team has checked the applicability condition of applied methodology and tools for the grouped project and first PAI and the same has been justified as follows

AR-ACM0003 Applicability conditions	Means of assessment
The land subject to the project activity does not fall in wetland category	VVB confirmed through desk review and review of KML file submitted /41//42/ that the project does not fall under wetland category. All the eligible land area covered in this project falls under agricultural land.
Soil disturbance attributable to the project activity does not cover more than 10 per cent of area2 in each of the following types of land, when these lands are included within the project boundary: (i) Land containing organic soils. (ii) Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to this methodology.	As stated in the PDMR section 3.2, the land preparation in this project is insignificant. The land preparation involves only the area where the tree will be planted. The farmers prepare the site with a hoe (or similar) by taking out the topsoil of an area of 30cm by 30cm (max) at a two or four meter spacing, depending on the tree type.
A project activity applying this methodology shall also comply with the applicability conditions of the tools contained within the methodology and applied by the project activity.	VVB checked the applicability conditions of each tool applied in this project and confirmed that project meet the conditions.

3.4.3 Project Boundary

The project is implemented in Uganda. The Carbon Pools and GHG sources included in the project are mentioned in the table below.

Source		Gas	Included?	Justification/Explanation
Baseline scenario	Above and below ground biomass	CO_2	Yes	Carbon stocks in tree biomass is the main carbon pool affected by project activity. It is considered in the baseline scenario and project activity.

Source		Gas	Included?	Justification/Explanation
	Dead wood, litter and SOC	CO_2	Yes	These three forest carbon reservoirs are expected to increase due to project activities. It is considered in the baseline scenario and project activity.
	Burning of woody biomass	CO_2	No	CO2 emissions due to burning of biomass are accounted as a change in carbon stock
		CH_4	No	Burning woody biomass for site preparation is not part of the baseline activities. Considered as zero in baseline scenario.
		N_2O	No	Burning woody biomass for site preparation is not part of the baseline activities. Considered as zero in baseline scenario.
	Harvested wood products	CO_2	No	This carbon pool is not eligible under selected methodology.
	Combustion in fossil fuel in vehicles and machinery	CO_2	No	Potential emissions are negligibly small and are not included as a source of GHG emissions
		CH_4	No	Potential emissions are negligibly small and are not included as a source of GHG emissions
		N_2O	No	Potential emissions are negligibly small and are not included as a source of GHG emissions
	Nitrogen based fertilizers	N_2O	No	Potential emissions are negligibly small and are not included as a source of GHG emissions
Project	Above and below ground biomass	CO_2	Yes	Carbon stocks in tree biomass is the main carbon pool affected by project activity. It is considered in the baseline scenario and project activity.
	Dead wood, litter and SOC	CO_2	Yes	These three forest carbon reservoirs are expected to increase due to project activities. It is considered in the baseline scenario and project activity.

Source		Gas	Included?	Justification/Explanation
	Burning of woody biomass	CO_2	No	CO2 emissions due to burning of biomass are accounted for as a change in carbon stock.
		CH_4	Yes	Burning woody biomass for site preparation is not part of forest management. Although there have not been any forest fires since the beginning of the project, the occurrence of such an event would be accounted indirectly as a change in the carbon stock. Forest fires are considered under applicability conditions of the tool "Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity" (Version 04.0.0).
		N_2O	Yes	Burning woody biomass for site preparation is not part of forest management. Although there have not been any forest fires since the beginning of the project, the occurrence of such an event would be accounted indirectly as a change in the carbon stock. Forest fires are considered under applicability conditions of the tool "Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity" (Version 04.0.0).
	Harvested wood products	CO_2	No	This carbon pool is not eligible under selected methodology.
	Combustion in fossil fuel in vehicles and machinery	CO_2	No	Potential emissions are negligibly small and are not included as a source of GHG emissions
		CH_4	No	Potential emissions are negligibly small and are not included as a source of GHG emissions
		N_2O	No	Potential emissions are negligibly small and are not included as a source of GHG emissions

Source		Gas	Included?	Justification/Explanation
	Nitrogen based fertilizers	N_2O	No	Potential emissions are negligibly small and are not included as a source of GHG emissions

Through the review of available information and evidence collected during on-site observations /57/ as well as supporting documents submitted by the PP, the audit team concluded that the appropriate carbon pools and GHG emissions sources have been thoroughly considered. The audit confirmed that the description provided in the PD is both accurate and comprehensive. Additionally, the selected carbon pools for the proposed project activity are well-justified. The project boundary has been properly verified, and the relevant carbon pools have been appropriately considered by the PP, ensuring alignment with the project's goals and standards for carbon accounting.

3.4.4 Baseline Scenario

The baseline scenario, as outlined in section 3.4 of the PD, describes the ongoing land degradation due to its use as pastoral land over the years. The baseline scenario for the project area is defined as degraded croplands or grasslands across the project area. The process to define the baseline and demonstrate additionality involved the following five steps:

Step 0 - Preliminary Screening: This step differentiates afforestation from reforestation and was followed to ensure completeness, even though it's not required under Verra's standards. The Kijani Forestry project began in 2022, with land previously used for subsistence agriculture or left fallow after degradation, and no deforestation occurred within the past decade.

Step 1 - Identification of Alternative Scenarios: The project explores several land use scenarios that could serve as the baseline:

- **Scenario 1**: Continuation of subsistence crop production, with land maintained for food crops alongside agroforestry systems.
- **Scenario 2**: Limited commercial crop production, which is not realistic for most farmers due to financial constraints.
- **Scenario 3**: Afforestation with exotic species for timber production, not viable for farmers due to financial and logistical barriers.

- **Scenario 4**: Afforestation with native or exotic species intended for future harvest without carbon credits, possible but not assured due to barriers like financing and access to seedlings.
- **Scenario 5**: Afforestation with native species without carbon credits, not feasible due to the high costs and lack of resources among farmers.

The credible alternatives identified by the PP are: (a)Continuation of domestic agriculture (Scenario 1) and (b) Afforestation with native or exotic species without carbon credits (Scenario 4)

Step 2 - Barrier Analysis: This step involves two sub-steps: **2a** identifies barriers preventing the implementation of land use scenarios, while **2b** eliminates scenarios blocked by these barriers.

Sub-step 2a categorizes barriers as investment, institutional, technological, traditional, and ecological. For example, smallholder farmers face investment barriers due to limited access to capital and financial services, while institutional barriers stem from weak forest governance. Technological barriers include the lack of knowledge on afforestation and limited access to seedlings, and traditional practices are focused on subsistence crops. Ecological challenges include soil degradation and changing weather patterns.

Sub-step 2b eliminates scenarios affected by these barriers. While domestic agriculture can continue, afforestation with exotic or native species is hindered by financial, knowledge, and ecological barriers, along with cultural resistance. Therefore, afforestation without carbon credits generation is not viable for smallholders, while continuing existing agricultural practices remains unaffected.

Step 3 - Investment Analysis: this step is not applicable as the forestation without being registered as an A/R CDM project activity and included in the list of land use scenarios that are prevented above mentioned barriers.

Step 4 - Common Practice: This step analyses whether the proposed project activity is consistent with common practices in the region. The National Forest Inventory (NFI) of Uganda (2019) and the FAO Global Forest Resources Assessment (2020) report that Uganda's forest cover as of 2020 is 11.5% of the total national area, comprising 9.2% natural forests and 2.3% planted forests. From 1990 to 2020, natural forest cover decreased from 16.7% to 9.2%, reflecting ongoing deforestation. In contrast, planted forests have seen gradual growth, particularly through initiatives like the Sawlog Production Grant Scheme (SPGS), which has contributed to the establishment of over 70,000 hectares of timber plantations since 2002. However, deforestation persists at an unsustainable rate, and the SPGS has been critiqued for being inaccessible to smaller farmers with limited capital and land.

The Kijani Forestry initiative presents an alternative approach, focusing on small-scale farmers and providing full financial support for tree planting, including costs for seedlings, labor, and carbon credits. In comparison to SPGS, Kijani works with local communities, uses native species,

and allows agroforestry practices. The program's financial model, which also offers income from carbon credits, can significantly improve household income, making afforestation more accessible to farmers.

A key distinction in Kijani's methodology is its focus on the number of trees planted rather than the land area covered, which deviates from traditional forest inventory methods. This approach reflects the organization's detailed tracking of tree planting at the species level, rather than measuring afforestation by hectares.

In summary, despite the expansion of commercial plantations through programs like SPGS, Uganda's forest cover is still in decline. Kijani Forestry offers a more inclusive, financially accessible model that promotes afforestation, particularly among smallholder farmers, and encourages sustainable land management practices through carbon credit programs.

From the baseline assessment the project identifies two main baseline scenarios: the continuation of subsistence crop production (Scenario 1) and afforestation with non-carbon credit generation (Scenario 4). These scenarios comply with mandatory national regulations and are the most plausible alternatives to the proposed project activity.

A literature survey /85//86//87/ conducted by the VVB confirmed that the area has indeed experienced degradation, supporting the initial baseline scenario. The VVB checked the evidence /83//84/ provided by the PP in support of Step 2b and confirmed that that the evidence submitted by the Project Proponent (PP) aligns with the requirements outlined in Paragraph 17 of Tool02. Additionally, this scenario was further validated through consultations with stakeholders and the Project Participant (PP) during a site visit.

The assessment of the baseline scenario follows the prescribed methodology requirements. The audit team has reviewed the provided data—including emission reduction (ER) sheets, spatial and remote sensing data, and other relevant evidence—and concludes that the identification of the baseline scenario is well-supported. The scenario identified is a reasonable representation of the conditions likely to occur in the absence of the project.

In summary, the audit team confirms that the procedures for determining the baseline scenario were appropriately followed, and the identified baseline scenario is justified based on available evidence. The process aligns with the requirements outlined in section 3.13 of the VCS standard v4.5 and AR-ACM0003, ensuring that the baseline scenario is both credible and compliant.

3.4.5 Additionality

The project activity is using AR-TOOL02 "Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities" (Version 01) to demonstrate additionality. Following steps were used to check the additionality of the project.

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

PP has correctly identified the start date which is 22/08/2022 and identified the alternative land used scenarios.

2. Identification of alternative scenarios

The alternative land use scenarios identified were as follows.

1) Continuation of subsistence crop production and cattle grazing

2) Commercial crop production

3) Afforestation with exotic commercial species (Eucalyptus spp.; Pines)

4) Afforestation with native or exotic species intended to be harvested without carbon credit generation

5) Afforestation or reforestation with native species without carbon credit generation

None of the land use scenarios have been eliminated as alternative land uses.

3. Barrier analysis

PP has provided justification for all the barriers in section 3.5 of the PD. VVB confirmed that the demonstration of investment barrier, barriers related to local tradition, barriers due to local ecological conditions are sufficient and appropriate.

4. Common practice analysis

The audit team carried out individual literature survey and interact with the participant farmers and local stakeholders during the site visit to gather information on the common practices prevailed in the project area. The auditors reviewed the Information provided by the PP and confirmed that the forest cover in Uganda has been steadily declining over the past few decades. According to the National Forest Inventory (NFI) of Uganda (2019) and the FAO Global Forest Resources Assessment (FRA) (2020), total forest cover represented only 11.5% of the country's land area by 2020, with 9.2% covered by natural forests and 2.3% by planted forests. The data indicates a continual reduction in forest cover, from 17.5% of the national area in 1990 to just 11.5% in 2020. Specifically, the area covered by natural forests decreased by 1.5 million hectares from 1990 to 2020 due to deforestation.

The increase in forest plantations, particularly from 2015 to 2020, was largely driven by the Sawlog Production Grant Scheme (SPGS), a government initiative aimed at promoting sustainable forest management and bridging the gap in timber supply. This scheme provided financial support for the establishment of timber plantations, particularly using exotic species such as pine, teak, and eucalyptus. By 2020, the SPGS had helped establish over 70,000 hectares of plantations, with a particular focus on timber production. However, despite its success, the SPGS was primarily targeted at larger landowners and farmers with at least 25 hectares of land, leaving smallholders out of the equation. This limitation, alongside the significant costs involved in

planting trees without external funding, highlights the challenges faced by small-scale farmers in Uganda.

Kijani Forestry's approach contrasts with the SPGS by working with smallholders, providing 100% financial assistance for inputs and training, including the planting of native and nativized tree species, and offering carbon credit generation opportunities. This model aims to make afforestation more accessible to small-scale farmers, who typically own less than 2 hectares of land, and provides them with the potential to earn income from carbon credits, timber, and charcoal production. In contrast, under the SPGS, farmers need to have significant upfront capital and land to qualify for support, and those with less than 25 hectares are excluded from the scheme.

The financial barriers for smallholders are significant. For example, planting 1,000 trees on 1 acre of land costs around $938 USD without assistance, which far exceeds the average annual income of a Ugandan household. Kijani, however, provides all necessary inputs at no cost to the farmer, requiring only minimal labor in exchange for support, training, and the opportunity to earn income through carbon credits and timber. This approach significantly reduces the financial burden on farmers and allows them to earn a higher income through afforestation compared to conventional methods.

From the assessment, it is concluded that afforestation is not yet a common practice in Uganda, primarily due to financial, technical, and institutional barriers. The SPGS has made some progress in promoting commercial plantations, but its focus on larger landowners and limited financial support has excluded many smallholders. Kijani Forestry's model presents a more inclusive approach, supporting small-scale farmers with financial assistance, training, and access to carbon credits, thereby contributing to the country’s efforts to address deforestation and promote sustainable land use practices. The additionality approach used in this project has been checked in line with AR-TOOL02. It was confirmed that PP has appropriately demonstrated the additionality of the project

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3.4.6 Quantification of GHG Emission Reductions and Removals

Quantification of baseline emissions

As per PDMR section 5.1, in agreement with IPCC Good Practice Guidance for Land Use, Land Use Change and Forestry (2003) that the net GHG removals by sinks in the baseline equals zero. In accordance with AR-Tool 14, the carbon stock of trees in the baseline is recorded as zero due to specific conditions being met. Firstly, pre-project trees must remain unharvested and intact throughout the project's crediting period. Kijani staff inspect fields before adding new gardens to ensure that any pre-project trees identified are preserved and not removed. Secondly, pre-project trees should not experience mortality due to competition or damage from newly planted trees, which Kijani mitigates by designing project layouts to minimize resource competition and practicing spot planting without tillage, thereby protecting the ecosystem and biodiversity. Finally,

pre-project trees are not included in carbon stock inventories, but their existence is monitored during the crediting period. The project references a consistent activity over 20 years, aligning with IPCC guidelines, resulting in zero net GHG removals by sinks in the baseline scenario. The audit team confirmed through interviews with the participant farmers and project staff and review of provided ERR calculation sheet that required conditions are met to consider the carbon stock of trees in the baseline is zero and it is as per applied methodology and tools.

Quantification of project emissions

Project emissions have been calculated in accordance with applied methodology and tools. Section 5.2 of the PDMR was found to be completed reporting the correct equations for project emission calculations.

Quantification of leakage

Leakages are 0. As per section 5.3 of the PDMR, and according to the methodological tool the displacement of an agricultural activity by itself does not result in leakage emission. Leakage emissions occur when the displacement leads to an increase in GHG emissions relative to the GHG emissions attributable to the activity as it exists within the project boundary, which is not the case of Kijani. Through interaction with the participant farmers and local stakeholders, onsite observation during the site visit, audit team confirmed that there was no area of land from which agricultural activity was being displace. The farmers confirmed that the planation in the boundary of the garden and plantation in very small portion of the degraded cropland helped them to avoiding displacement of the agricultural land. Therefore, leakage emissions are estimated as zero.

Summary of net GHG emission reductions or removals

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)	Buffer pool allocation	VCUs eligible for Issuance
Year 2022 (22/08/2022 – 31/12/2022)	0	301	0	301	42	259
Year 2023 (01/01/2023 – 28/08/2023)	0	549	0	549	77	472
Total	**0**	**850**	**0**	**850**	**119**	**731**

It was confirmed that all relevant assumptions and data are listed in the project description, including their references and sources. All data and parameter values used in the project description are considered reasonable. All estimates of the baseline emissions can be replicated using the data and parameter values provided in the project description.

3.4.7 Methodology Deviations

1. In this project, tree biomass and carbon removal estimates are based on the number of trees rather than the area (hectares) typically used in forest inventories. Kijani tracks the number of trees per species and garden instead of calculating density per hectare due to its precise planting records and variable tree density across gardens. This approach necessitated a methodological adjustment, where the parameter for stratum size (A) was redefined from hectares to the number of trees.

   Kijani's forest inventory operates on a per-tree basis, with 5 trees per plot, rather than area-based sampling, to accurately represent their planting approach. While Kijani records total garden areas, these records do not specify the area per species, focusing instead on the number of trees per species per garden. Consequently, biomass carbon removal estimates are calculated based on the tree count per species rather than land area per species. Since PP has meticulously recorded the number of all plantations and conducts regular monitoring, the audit team agreed that this biomass approach will provide more accurate and precise information regarding biomass changes, and it will not impact negatively on the ERR calculation. Therefore, VVB confirms that this according to section 3.20.2 of the VCS Standard.

2. Due to the lack of species-specific allometric equations applicable to agroforestry systems in the project area, the Project Proponent (PP) has applied a methodological deviation for ex-post biomass estimation. The equation developed by Chave et al. (2014) was selected as the most appropriate and conservative option. Although originally developed for natural tropical forests rather than planted agroforestry systems, the equation satisfies key requirements under paragraph 6 of AR-TOOL17, including:

   - Use in Uganda's National Forest Inventory and GHG Inventory (condition a), and
   - Derivation from a dataset exceeding 30 trees with $R^2 > 0.85$ (condition c).

   The unavailability of species-specific equations stems from several factors, including limited empirical data on native species, a research focus on commercial plantations (e.g., Eucalyptus, Tectona), high costs of destructive sampling, and the lack of standardized biomass data in Uganda's forest inventories. The PP conducted a comprehensive literature review, analyzing over ten alternative equations, including those from regional sources and FAO's GlobAllomTree database. Only Chave et al. (2014) met the required scientific rigor and institutional validation.

   The assessment team reviewed the Project Proponent's comparative analysis of Emission Reduction and Removal (ERR) estimates using various allometric equations, including those developed by Brown (1997) and Mugasha et al. (2013). The review confirmed that the Chave et al. (2014) equation yielded the most conservative estimates of tree carbon stocks, thereby reducing the risk of overestimating emission removals. The model's flexibility—enabling biomass estimation with or without tree height data—and its integration of wood density

parameters enhances its applicability across diverse tropical forest ecosystems. In addition, independent literature reviewed by the assessment team confirms that the Chave equation has been officially utilized in Uganda's Forest Reference Emission Level (FREL) submission to the UNFCCC and is consistent with IPCC guidelines. This reinforces its scientific validity and institutional acceptance. Therefore, the assessment team concludes that the use of the Chave et al. (2014) equation is appropriate and will not negatively impact the accuracy or conservativeness of the ERR estimations.

Additionally, as a forward-looking measure, the Project Proponent intends to collaborate with scientific institutions to develop species-specific allometric equations tailored to Uganda's native tree species. This initiative aims to improve the precision of future estimations, strengthen subsequent verifications, and contribute to national efforts in enhancing forest carbon accounting methodologies and policies.

3.4.8 Monitoring Plan

The farmers own field, in each field tree species are planted in small land area called garden. There are different plantation model as per the willingness and interest of farmers for plantation. Some grow trees in boundaries of their land while some grows in square patches or block in their fields. In this project, the calculation of biomass has been based on number of trees planted in all gardens. For the first verification, PP has considered gardens onboarded in the project in year 2022. In terms of management in the fields, there is a comprehensive connectivity established on ground by Kijani team, Farmers are directly connected to Parish Coordinator, who entered the program through internship. Parish coordinator reports to village coordinator, who reports to district coordinator. Regular updated in regard to nursery and plantation activities are being recorded in Kijani database. As per PP, the field coordinators trace the perimeter of the trees planted. For adjacent gardens with separate family members, separate plots will be measured. The area planted is calculated through the software platform and the data and kml files are kept in the Kijani database. All field coordinators are well-equipped to record and update the field details in the database enabling transparent and consistent reporting of field work. The project has Kijani's Nursery Hub model which is the decentralized model for seedling raising in our communities. As per PP, when Kijani is asked to enter a new community, usually by local government officials, Kijani's Community Mobilization team meets with these groups to share about Kijani's program, go over benefits of tree planting, and determine if a group is interested in participation. Once a group has confirmed their interest, the Community Mobilization team hands it over to the local Parish Coordinator, who then works with the group to establish the nursery and start the process of raising seedlings. Periodically, the Community Mobilization team may visit the group again, as support for the Parish Coordinator, to address any questions or concerns the group may be having. A Comprehensive Training Manual for Trainer of Trainers (ToTs)" which includes 'Community mobilization; Nursery establishment and management; Agronomy and Agroforestry; Plantation establishment and management; Monitoring, evaluation, accountability and learning; Leadership and management skills.

The monitoring plan aims to validate project data, assess tree biomass growth, estimate carbon stocks, and determine GHG removals related to the project activities. Data collection focuses on

the above-ground biomass, the primary carbon pool, with below-ground biomass and dead wood pools estimated indirectly. Kijani staff, trained in August 2023, performed the initial field data collection following structured guidelines, supervised during a training week (August 14-18) to ensure accuracy and safety.

Project boundaries and strata areas were confirmed using GIS, remote sensing, and site visits. A total of 188 sample plots were determined based on a 10% precision level and 90% confidence for species-specific biomass measurements. Kijani measured 244 plots, distributing them across various districts, using a "Garden Inventory Guide" that outlines the protocol for plot selection, data measurement, handling of non-viable trees, and recording procedures. Essential tools for field measurements included callipers, height poles, measuring tape, GPS-enabled smartphones, and other data collection and marking equipment.

Above ground biomass of the Gmelina arborea trees were determined by using the allometric equation from the 2002 study by Swamy, Puri, and Singh, which specifically focuses on Gmelina arborea, a major species in the Kijani project. Paragraph 5 of the tool "Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities" clarifies that for preliminary (ex-ante) estimations of aboveground tree biomass, any suitable allometric equation can be applied. The allometric equation applied in the project was derived from a sample size of 40 trees and demonstrates a high degree of accuracy with an R^2 value of 0.95, which is strong evidence of its reliability. Additionally, the environmental conditions in the study location and the project area closely align, both falling within tropical montane and tropical moist climatic zones as classified by the IPCC. This similarity suggests that growth patterns and species behaviour are comparable across the two areas, supporting the applicability of the equation.

For the remaining species, where regionally developed species-specific or group-specific allometric equations were unavailable, the Project Proponent (PP) applied the Chave et al. (2014) allometric equation. To generate the input parameters required for this equation—namely, diameter at breast height (DBH) and tree height—the PP utilized the MYRLIN (Methods of Yield Regulation with Limited Information) model. MYRLIN is a forest growth and carbon simulation tool designed specifically for data-limited contexts. It integrates species-specific growth parameters, regional climatic variables, and geospatial data to simulate biomass accumulation and carbon stock changes across all major IPCC carbon pools, including aboveground biomass, belowground biomass, deadwood, and litter. Based on an independent literature review, the assessment team confirms that MYRLIN, developed since 2001 and applied in various tropical regions, is recognized for its methodological robustness, flexibility, and alignment with IPCC carbon accounting principles. The model incorporates globally accepted ecological frameworks such as WWF biomes and ecoregions and allows for customization based on species composition, planting density, and forest management regimes. For the Kijani project, MYRLIN simulations were accessed via an API provided by AirImpact. Species modeled using this approach included Acacia polyacantha, Melia volkensii, Maesopsis eminii, and several species

groups allocated for timber production, charcoal generation, and boundary planting. Biomass estimation was conducted by applying the Chave et al. (2014) equation to the DBH and height parameters derived from MYRLIN. Tree-level biomass values were then scaled based on species-specific planting densities and designated end uses. The audit team reviewed the submitted supporting documents /98/, Ex-ante calculations, and confirmed that PP estimated the Ex-ante ERR using Chave et al. (2014) equation with parameters derived from MYRLIN model.

For estimating the Ex-post aboveground for the tree species, the project used AGB) the allometric equation proposed by Chave et al. (2014). The assessment team evaluated the applicability of the Chave et al. (2014) allometric equation against the requirements outlined in paragraphs 6 and 7 of AR-TOOL17 v1.0, including the justification for a methodological deviation where full compliance could not be achieved.

With respect to paragraph 6, the Project Proponent (PP) provided a comprehensive analysis demonstrating that the Chave et al. (2014) equation is derived from a globally distributed dataset of over 4,000 destructively sampled trees from tropical forest regions, including areas with edapho-climatic conditions similar to those of the project area. The equation satisfies condition (a), as it is utilized in Uganda's National Forest Inventory, and condition (c), having been developed from a robust dataset with a high coefficient of determination ($R^2 = 0.94$). However, it was originally developed based on data from natural forests rather than planted systems, which introduces limitations in its direct applicability to the project context. Consequently, the equation is considered to be in partial compliance with the requirements of paragraph 6.

In relation to paragraph 7, which outlines additional conditions to be met when paragraph 6 is not fully satisfied, the PP addressed several key requirements. These include the use of field-derived data, destructive sampling of trees, and the application of species-specific wood density values. However, certain critical elements remain unfulfilled—specifically, the absence of a paired t-test to statistically assess the agreement between predicted and observed biomass values, and the lack of information regarding the application of a biomass expansion factor (BEF). These omissions indicate that the equation does not fully meet the conditions set forth in paragraph 7.

Acknowledging these limitations, the PP has applied a methodological deviation, which is clearly documented and justified in the file "Kijani - selection of allometric equation for expost ERR_v2.pdf." The deviation has also been formally incorporated into the revised Project Description and Monitoring Report (PDMR). Given the conservative nature of the Chave equation and its institutional recognition, the applied deviation is deemed acceptable and consistent with Verra's requirements for methodological flexibility.

Species-specific allometric equations for Uganda are scarce due to limited empirical data, reliance on pan-tropical models like Chave et al. (2005), a focus on commercial rather than native species, lack of detailed forestry inventories, and funding constraints for biomass studies /97/. While some equations exist for species like Maesopsis eminii and Gmelina arborea, their small sample sizes limit their applicability.

From the desk review, the audit team found that Chave et al. (2005, 2014) is appropriate over general allometric equation such as Brown (1997) for biomass estimation due to its broader dataset, inclusion of wood density, and flexibility in accounting for tree height. It is widely used in carbon stock assessments and is officially adopted in Uganda's National GHG Inventory and Forest Reference Emission Level (FREL).

The wood density values used in this equation are sourced from the World Agroforestry Database. For species without available wood density information, a default value of 0.615 t/m^3 is applied. The equation and methodology align with the "Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities" tool, and the same equation was used in the National Forest Inventory in Uganda (2019).

As PP has stated that "For future verifications, the PP will create its own allometric equations to ensure compliance with the methodology and methodological tools." This statement is also reflected in the supporting document Kijani - Selection of Allometric Equation for Ex-Post ERR_v2.pdf.

Accordingly, the audit team has raised this FAR, requiring the VVB for the next verification to validate the allometric equation developed by Kijani. The newly developed allometric equation must meet the requirements outlined in points 8–19 of the methodological tool Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities. Additionally, the equation must be conservative in nature.

The monitoring of the trees planted in garden has been done as per the field protocol. Each plot needs to have 5 trees (no less than that) and ideally, no more than 1 plot per species per garden. Every garden records the tree measurement of 5 tress of each species. VVB confirmed the field protocol data management system and monitoring activities during site visit. It was found that all the monitoring activities is implemented as per the monitoring plan described in PDMR.

3.5 Non-Permanence Risk Analysis

The non-permanence risk report and risk calculation sheet and report are provided by PP, the risk assessment was conducted according to the VCS "AFOLU Non-Permanence Risk Tool" v4.2 Each risk category was calculated based on the VCS guidance. The information was validated and cross-checked through document review, onsite visits of the project area and interviews conducted. Details of the assessment are provided as follow

Risks	Assessment of the risk factor justification	Risk rating
Internal risks		
Project management (PM)	The validation team conducted a project risk analysis in alignment with the AFOLU Non-Permanence Risk Tool. This grouped project	Risk rating: 0

	encompasses Afforestation, Reforestation, and Revegetation (ARR) practices. The initial Project Activity Instance (PAI) involves planting tree species within farmers' gardens in the designated project region. According to Section 2.2.1 of the tool and Table 1, project management, species planted, and measures to prevent encroachment by external actors were rated "Not Applicable," as these factors do not pertain to this project. The management team, located within a day's travel of the project site, includes professionals with substantial experience in AFOLU project design and implementation, carbon accounting, and reporting under the VCS Program or other approved GHG programs. Consequently, the risk was assessed at zero within the framework of the adaptive management plans.	
Financial viability (FV)	The applicable financial viability risk categories is (i). Based on the FV analysis (attached as a separate excel), the Project has secured 80 percent or more of the funding needed to cover the total cash out before the project reaches breakeven. The risk is rated 0 as the risk factor does not apply to project.	Risk rating: 0
Opportunity costs (OC)	The applicable category is (h). The risk is rated 0. The audit team reviewed the Kijani survey report and confirmed that before the project, farmers had a median annual income of 1,000,000 UGX (83,333 UGX/month), which was significantly lower than Uganda's minimum wage (130,000 UGX/month) and living wage (848,837 UGX/month) /91//92/. With the project's implementation, farmers' incomes are expected to rise substantially through carbon profit sharing, charcoal production, and timber sales. By year 40, earnings are projected to exceed 20 times the baseline, highlighting the project's transformative impact on livelihoods /91/ /92/.	Risk rating: 0
Project longevity (PL)	The project longevity is 30 years. The project has a management, financial and monitoring plan	Risk rating: 5
Internal risk rating	PM + FV + OC + PL	In accordance with the Tool, total may not be less than zero Internal risk score = 5
External risks		

Land Tenure and Resource Access/ Impacts (LT)	The Land Tenure and Resource Access/Impacts conditions are rated 0, with justification verified through community interactions, traditional leaders, and contract review. The audit confirmed that Kijani's project operates on farmer-owned land under customary tenure. Farmers retain full ownership and use rights, with local leaders overseeing land matters. Kijani holds carbon rights through informed farmer agreements, providing training, technical support, and financial benefits, including carbon revenue sharing and guaranteed offtake for charcoal and timber. The contract explicitly states that Kijani does not claim land ownership but holds the carbon rights. In return, farmers receive training, technical support, and financial incentives, including a share of carbon revenue and guaranteed offtake for charcoal and timber /1//44/ /57/ /96/.	Risk rating: 0
Stakeholder engagement (CE)	The farmer's community are directly involved in this project. The risk rating is provided on category mitigation - the project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area. The audit team confirmed it through the interaction with the local community members /57/.	Risk rating: 0
Political risk (PC)	PP has calculated governance score from the mean of Governance Scores across the six indicators of the World Bank Institute's Worldwide Governance Indicators (WGI). The score is -0.67 which gives risk rating of 4. Mitigation: The project is in a country that: 1) is party to the Paris Agreement and has submitted an NDC to the UNFCCC Secretariat in the last five years, 2) includes AFOLU commitments (conditional or unconditional) in its NDC, and 3) has a documented and active climate change plan that includes the project activity.	Risk rating: 2
External risk	LT + CE + PC	External score = 2
Natural risks		
Fire (F);	Kijani's forest management includes fire prevention measures. The analysis of fire frequency in the project area, based on MODIS/Terra data (2000–2025), indicates an average of 4.7 fire events over 25 years, primarily linked to agricultural land preparation rather than large-scale forest fires. The Global Forest Watch data confirms that these fires have not resulted in significant tree cover loss, with fires accounting for less than 0.1% of Uganda's total tree cover loss between 2001 and 2023 /93/ /94/. To	Risk rating: 1.5

	mitigate fire risks, Kijani implements firebreaks and provides farmer training as part of its Forest Management Plan. These measures were verified during site visits.	
Pest and Disease outbreaks (PD)	Kijani's tree species are not among those most susceptible to pests and diseases, as confirmed by research on African tree health. The project's approach—planting diverse native or naturalized species in small gardens—enhances resilience compared to monoculture plantations, which are more vulnerable to outbreaks. Native trees also benefit from natural defences and symbiotic relationships with local soil microorganisms and wildlife, further strengthening their resistance. To mitigate pest and disease risks, Kijani has a management plan in place. This includes termite control measures, general best practices such as proper pruning and monitoring, and species-specific management strategies. While some species, like Gmelina arborea and Maesopsis eminii, may experience occasional issues like leaf spot, root rot, or cankers, Kijani ensures early detection and intervention to minimize impacts. The VVB confirmed during site visit that Kijani prevents pest and disease outbreaks through regular inspections, healthy soil use, proper spacing, timely pesticide application, physical removal of infected plants, planting resistant varieties, maintaining garden hygiene, and erecting natural barriers. The risk category was found to be applicable, and it was confirmed that project provides veterinary health services to the livestock. Therefore, mitigation score of 1 is considered. However, as per Non-Permanence Risk Tool v4.0 para 2.4.1.4 (a) and (b), the risk is calculated to be 0.	Risk rating: 1.5
Extreme Weather (W)	Kijani mitigates extreme weather damage by selecting drought-resistant agroforestry species and using direct sowing in nurseries for species that tolerate it, enhancing drought resilience. The audit team, through a desk review, confirmed that the World Bank and GFDRR's *Disaster Risk Profile* for Uganda indicates a low risk of major natural disasters in the project area. Drought risk is minimal, with no severe impacts reported. Flood hazards are concentrated in specific regions, excluding the project area. Landslide risk is low, as confirmed by geospatial research, and earthquake risks are highest in Western Uganda, while the project area remains in a lower-risk zone /89/.	Risk rating: 1.5
Geological risk (G)	Risks such as drought and erosion are rated 1	Risk rating: 1

Other natural risk (ON)	Through site visit inspection and interview with PP it was confirmed that chances of occurrence of other risks are not applicable, but PP has ta	Risk rating: various
Natural risks	F + PD + W + G + ON	6.4
Overall risk rating	Internal risk + external risk + natural risk	5 + 2 + 6.4 = 14

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

The data and parameters used to calculate the GHG emission reductions and removals were assessed as follows:

Parameters available at validation

Data/ Parameter	Unit	Description of parameter	Appropriateness of the values used in the MR
A_i	Number of trees	Size of stratum i	The value of the parameter is sourced form project database wherein the number of planted trees per species and garden is registered by Kijani. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet.
CFj	t C t-1 d.m.	Carbon fraction of tree biomass for species or group of species j	The value of the parameter is 0.47 and considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Thes source of the value is IPCC database.
CO_2-e	CO_2	The factor of 3.667 (44/12) is applied to convert the tree carbon sequestered to tree CO2-e sequestered.	The value of the parameter is 3.667 and considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet.

			Thes source of the value is IPCC database.
R_j	dimensionless	Root-shoot ratio for species or group of species j	The value of the parameter is calculated and considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet.
B_{TREE}	T d.m	Tree biomass within the biomass estimation strata	The value of the parameter is calculated and considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. The value is sourced from *Chave et al (2014)*.
WD	*t/m3*	*Wood Density*	*World Agroforestry Database.*
SOC REF	t C ha-1	Reference SOC stock corresponding to the reference condition in native lands (i.e. non-degraded, unimproved lands under native vegetation. normally forest) by climate region and soil type applicable to stratum i of the areas of land	The value of the parameter is considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Variable according to strata: HAC, tropical montane: 42.78 HAC, tropical moist: 37.1 LAC, tropical montane: 40.73
$f_{IN,i}$	dimensionless	Relative stock change factor for baseline input regime (e.g. crop residue returns, manure) in stratum i of the areas of land.	The value of the parameter is considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Variable according to strata: 0.94 for low level input in tropical montane 0.92 for low level input in tropical moist
$f_{MG,i}$	dimensionless	Relative stock change factor for baseline	The value of the parameter is considered in line with the applied methodology. The

		management regime in stratum i of the areas of land; dimensionless	verification team confirmed that the value of the parameter is consistently applied in the ER sheet.
$f_{LU,i}$	dimensionless	Relative stock change factor for baseline land-use in stratum i of the areas of land; dimensionless	The value of the parameter is considered in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Variable according to strata Long term cultivated, tropical montane: 0.88 Long term cultivated, tropical moist: 0.82
Dead Wood (DF_{DW})	t C ha-1	Conservative default factor expressing carbon stock in dead wood as a percentage of carbon stock in tree biomass	The value of the parameter is considered 1% in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet.
Litter (DF_{LI})	t C ha-1	Conservative default factor expressing carbon stock in litter as a percentage of carbon stock in tree biomass	The value of the parameter is considered 1% in line with the applied methodology. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet.
Leakage ($LK_{AGRIC,t}$)	*t CO_2e*	*Leakage emission due to the displacement of agricultural activities in year t*	Tool "Estimation of the increase in GHG emissions attributable to displacement of pre-project agricultural activities in A/R CDM project activity"

Parameter monitored:

Data/ Parameter	Unit	Description of parameter	Appropriateness of the values used in the MR
DBH	cm	Diameter at breast height of tree (DBH)	The value of the parameter is calculated on fields and provided project monitoring records wherein the number of planted trees per species and garden is registered by Kijani. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet.

			Measurement methods according to Kijani's Work Manual.
Height	meters	Height	*Field measurement in sample plots.*
T	year	Time period elapsed between two successive estimations of carbon stock in trees and shrubs	The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Measurement methods according to Kijani's Work Manual.
ni	Units	Number of sample plots in stratum i	The value of the parameter is calculated on fields and provided project monitoring records wherein the number of planted trees per species and garden is registered by Kijani. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Measurement methods according to Kijani's Work Manual.
N	units	Number of sample plots to be established in the project area	The value of the parameter is calculated on fields and provided project monitoring records wherein the number of planted trees per species and garden is registered by Kijani. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Measurement methods according to Kijani's Work Manual.
Ap,i	Number of trees	Area of sample pots	The value of the parameter is calculated on fields and provided project monitoring records wherein the number of planted trees per species and garden is registered by Kijani. The verification team confirmed that the value of the parameter is consistently applied in the ER sheet. Measurement methods according to Kijani's Work Manual.
$A_{disp,t}$	ha	Area of land from which agricultural activity is being displaced in year t	Tool "Estimation of the increase in GHG emissions attributable to displacement of

			pre-project agricultural activities in A/R CDM project activity".

The verification team checked the source of the parameters in line with the applied methodology and it was found that PP has correctly applied values of the parameters in the emission reductions calculation sheet.

This data provided in for each plot in the excel sheet provided sufficient confidence in the data collection procedures implemented by PP. It was found that data management and following monitoring plan adopted by PP is as per the applied methodology and registered PD. Going forward with the analysis, it was found that PP has identified and numbered the plant on site the same numbering of plant species has been utilised to report the consistent information in all the documents. VVB confirmed the data collection, reporting and analysing procedures in the interviews of PP and other stakeholder conducted during site visit. The data from this sheet is used in the excel sheet that consists of the calculations of monitoring data with year wise plantation records for this monitoring period.

The input values in calculation sheet have been clearly provided to review the calculations. The equation used for the calculation of biomass have also been provided in the same worksheets. Additionally, the equation derived from the methodology for each step have been appropriately used in the worksheets too. While assessing the ERRs, these information and cell linking were checked and found to be correct in all the excel sheets provided for each year considered in this monitoring period.

VVB confirms that the total VCUs calculated in the final sheet has been done step wise following the appropriate equations derived from the methodology and the cell linkages have been well established within the excel sheet and between excel sheets. After making reproducible and consistent in all ERR calculation excel sheets and rounding two digits after decimal point as standards in the ERR sheets, only insignificant numbers after decimal points changes occurred, and final VCUs generated and eligible for issuance remain unchanged.

It was checked and found that PP has provided sufficient information in the section 5.2 and 5.4 of the PD/MR and the calculations done following the description given in PD/MR and in the ERR sheet confirmed that the calculations are reproducible and was found to be accurate and sufficient.

The methods and formulae used for quantification of GHG emission reductions and removals have been assessed and it was found that the equations used for the calculation of net emission reductions were applied correctly. The equations and values applied in each parameter have been given consistently in PD/MR and ER sheet for quantification of baseline emission, project emissions, leakage, and uncertainty.

In conclusion, VVB reviewed all the evidence submitted by PP related to GHG emission reduction calculations and confirmed that all the parameters are correctly applied. The emission reduction calculation has been done in line with the applied methodology. The project is in complete compliance with the monitoring plan described of registered PD/MR. All the values are provided in the MR and ER calculation sheet are cross verified with its sources and confirmed no manual transposition errors between data sets have occurred. Also, the consistency of values within MR was checked and found to be okay. Therefore, the verification team conclude that the GHG emission reductions and removals have been quantified correctly in accordance with the project description and applied methodology.

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

The GHG emissions reductions and removals of the project are analysed on the basis of field monitoring forest inventory measurements and calculation procedures and satellite image analysis. All these documents have been evaluated by the verification team, as described in Section 4.4 of this report. The verification team interviewed the PP's team and confirmed their roles, responsibilities and expertise. Through the assessment of field monitoring data, and other evidence as listed in appendix IV GHG emission reductions were found to conform to the project design and monitoring plan which ensured a high degree of data reliability and also that adequate monitoring mechanisms are in place where the required parameters need to be monitored. The evidence provided to determine emission reductions reported in the Monitoring Report included values, description, units, QA/QC procedures and sources. This evidence has been cross-checked with the project's emission reduction calculation spreadsheets. The procedure for data recording, transfer and final reordering was also verified and found to be in compliance with the monitoring plan outlined in the - PD/MR.

The verification team confirms that the calculation and data is authentic. The quality of supporting documents submitted for verification is adequate. The assessment team confirms that the proper evidence is available for the whole monitoring period and the same is verifiable and the data collection system meets the requirement of the monitoring plan and the applied methodology according to the assessment carried out. The measuring instruments used by PP for the monitoring is calibrated.

The verification team confirms the quality of evidence to determine the GHG reductions are satisfactory and the detailed information regarding the roles and responsibilities have been provided in the MR.

5 VALIDATION AND VERIFICATION OPINION

Earthood Services Private Limited has been contracted by One Carbon World to validate the project activity Kijani Forestry Smallholder Farmer Forestry Project (VCS ID 4475). The joint validation and verification assessment has been completed and concluded after thorough assessment of PDMR, ER calculation sheet, evidence in line with the requirements of VCS Standard, v4.5 and applied methodology AR-ACM0003, v2.0.

During the validation, 17 Clarification requests (CLs) and 13 Corrective Action Requests (CARs) were raised and successfully closed. The review of the revised PD versions, the supporting documents and subsequent follow-up discussions provided adequate evidence to conclude the closure of specified CARs and CLs. 01 Forward Action Requests (FARs) have been raised to be addressed at the time of verification.

No limitations or doubts were identified related to the validation of the project. The conservative approach and methodological choices used in the project design make it very likely that the project will meet the projected emissions reduction target.

Earthood Services Private Limited has reviewed the project description documents and subsequently carried out site visit interviews to confirm the fulfilment of stated criteria. The project activity has correctly applied the baseline and monitoring AR-ACM0003 A/R Large-scale Consolidated Methodology Afforestation and reforestation of lands except wetlands, v2.0 which is an approved methodology under the VCS programme and is acceptable under VCS Standard, version 4.5. The baseline has been determined in accordance with the stated approved baseline methodology.

As summary the assessment team able to conclude that:

The project is in line with all relevant host countries' criteria and all relevant VCS version 4 program guidelines requirements.

The project additionality is sufficiently justified in the VCS PDMR.

The monitoring plan is transparent and adequate and in line with applied baseline and monitoring methodology of AR-ACM0003, version 2.0 and all the related tools.

The calculation formulae and use of parameters for the project emission reductions estimation are transparent and in line with the requirement of the applied methodology. The ex-ante projection of emission reductions given is found to be appropriate, conservative and in line with the requirement. The estimated Emission Reduction- during the crediting period by the Project is expected to be 19,829,984 tCO2e over the 40-year project lifetime.

The conclusions of this report show that the project, as it was described in the project documentation, is in line with all criteria applicable for the validation as outlined under VCS Standard v4.5.

VVB declared that the validation and/or verification of the GHG statement was conducted in accordance with ISO 14064-3: 2019. Earthood here concluded that the PD and its estimated emissions reduction calculations are in with all criteria applicable for the validation against the VCS standard v4.5. The Project activity is found to be eligible under Sectoral Scope 14. A reasonable level of assurance has been attained in this validation assessment. PP has provided sufficient evidence and applied valid versions of VCS documents. The AFOLU non permanence risk report applicable to calculating buffer credits. The NPR report and calculation tool has been prepared in line with the guidance of VCS NPR tool. It is concluded that the project is likely to achieve estimated GHG emission reduction or removals. Therefore, Earthood certify that the project meets all relevant requirements of the above-defined criteria and recommend registration of the project activity.

Clearly state that the GHG statement is the responsibility of the project proponent, whether the project conforms with the validation and verification criteria for projects and their GHG emission reductions or removals set out in VCS Version 4 and include any qualifications or modifications. Adverse, disclaimed, modified, or qualified opinions shall include a description of the reason(s) for the opinion, placed before the validation/verification body's conclusion.

For the validation, VVB confirmed the reasonable level of assurance for assumptions made in the PDMR and the project is likely to achieve estimated GHG emission reduction or removals. For the verification, the level of assurance is reasonable on the quantity of GHG emission reductions or removals in tCO_2 equivalents achieved by the project during the verification period.

Validation period calendar year vintages: From 22-August-2022 to 21-August-2062

Verification period calendar year vintages: From 22-August-2022 to 21-August-2023

Validated or verified GHG emission reductions and removals in the above period:

For validation:

Year	Estimated project emission reductions or removals (tCO_2e)
22-Aug-2022 to 31-Dec-2022	362
01-Jan-2023 to 31-Dec-2023	17,677
01-Jan-2024 to 31-Dec-2024	108,709
01-Jan-2025 to 31-Dec-2025	343,267

01-Jan-2026 to 31-Dec-2026	805,164
01-Jan-2027 to 31-Dec-2027	1,615,412
01-Jan-2028 to 31-Dec-2028	2,916,296
01-Jan-2029 to 31-Dec-2029	4,898,759
01-Jan-2030 to 31-Dec-2030	7,605,642
01-Jan-2031 to 31-Dec-2031	10,883,373
01-Jan-2032 to 31-Dec-2032	14,781,549
01-Jan-2033 to 31-Dec-2033	19,177,463
01-Jan-2034 to 31-Dec-2034	23,464,451
01-Jan-2035 to 31-Dec-2035	26,465,926
01-Jan-2036 to 31-Dec-2036	28,403,666
01-Jan-2037 to 31-Dec-2037	29,156,180
01-Jan-2038 to 31-Dec-2038	28,893,844
01-Jan-2039 to 31-Dec-2039	27,025,159
01-Jan-2040 to 31-Dec-2040	24,186,905
01-Jan-2041 to 31-Dec-2041	21,014,361
01-Jan-2042 to 31-Dec-2042	21,993,101
01-Jan-2043 to 31-Dec-2043	22,732,801
01-Jan-2044 to 31-Dec-2044	23,941,342
01-Jan-2045 to 31-Dec-2045	24,822,721
01-Jan-2046 to 31-Dec-2046	26,388,466
01-Jan-2047 to 31-Dec-2047	27,421,094
01-Jan-2048 to 31-Dec-2048	27,419,335
01-Jan-2049 to 31-Dec-2049	26,104,484
01-Jan-2050 to 31-Dec-2050	24,442,431
01-Jan-2051 to 31-Dec-2051	22,833,752
01-Jan-2052 to 31-Dec-2052	21,009,651
01-Jan-2053 to 31-Dec-2053	24,040,938
01-Jan-2054 to 31-Dec-2054	26,699,361
01-Jan-2055 to 31-Dec-2055	29,498,531

01-Jan-2056 to 31-Dec-2056	31,848,056
01-Jan-2057 to 31-Dec-2057	32,018,052
01-Jan-2058 to 31-Dec-2058	31,129,708
01-Jan-2059 to 31-Dec-2059	28,987,690
01-Jan-2060 to 31-Dec-2060	25,090,727
01-Jan-2061 to 31-Dec-2061	23,012,972
Total (sum) – Long-term average	**19,829,984**
Total number of crediting years	**40**
Average annual ERRs	**495750**

For verification

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)	Buffer pool allocation	VCUs eligible for Issuance
Year 2022 (22/08/2022 – 31/12/2022)	0	301	0	301	42	259
Year 2023 (01/01/2023 – 28/08/2023)	0	549	0	549	77	472
Total	**0**	**850**	**0**	**850**	**119**	**731**

Approved by

Kaviraj Singh

CEO

Earthood Services Limited

Date: 06 August 2025

Place: Gurugram, Haryana

APPENDIX I: ABBREVIATIONS

Abbreviations	Full texts
GENERAL	
AFOLU	Agriculture, Forestry and Other Land Use
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO2	Carbon di oxide
CO	Conservation Outcomes
CP	Crediting Period
DR	Desk Review
EI	External Individual
ER	Emission Reductions
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GPS	Global Positioning System
Ha	Hectares
NGO	Non-Governmental Organization
PAI	Project Activity Instances
PD	Project Description
PP	Project Proponent
RS	Remote Sensing
SDG	Sustainable Development Goals
SOP	Standard Operating Protocol
tCO_2e	tonnes (t) of carbon dioxide (CO2) equivalent (e)
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VCS	Verified Carbon Standard
VCUs	Verified Carbon Units
VER	Verified Emission Reduction
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

APPENDIX II: COMPETENCE OF TEAM MEMBERS AND TECHNICAL REVIEWER

Competence Statement			
Name	Nepolion Borah		
Education	M.Sc. in Ecology & Environmental Science, Ph.D. in Forest Ecology		
Experience	15 Years +		
Field	Forest Ecology and Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (TA 14.1)		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	07/02/2025
Approved by	Deepika Mahala (Technical Manager)	**Date**	07/02/2025

Competence Statement	
Name	Riya Sharma
Education	M.Sc. Biodiversity & Conservation
Experience	1+ years
Field	Climate Change & Environment, Forestry
Approved Roles	

Team Leader	Yes (VM)		
Validator	Yes (VM)		
Verifier	Yes (VM)		
Local expert	Yes (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Reviewed by	Shifali Guleria, Quality Manager	**Date**	29/11/2022
Approved by	Deepika Mahala, Technical Manager	**Date**	29/11/2022

Competence Statement			
Name	Julius Sam Khaukha		
Country	Uganda		
Education	Bachelors in Social Administration		
Experience	7 Years +		
Field	Education and Social Work		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	YES (Uganda)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert	NO		
Reviewed by	Abhishek Mahawar	**Date**	01/03/2018
Approved by	Ashok Kumar Gautam	**Date**	01/03/2018

Competence Statement	
Name	Waris Hooda
Education	Master of Science (Geo-Information Science and Earth Observation) Bachelor of Engineering (Computer Engineering)
Experience	1+ years
Field	Geo-Information Science and Earth Observation (Specialization: Geo-informatics)
Approved Roles	
Team Leader	NO
Validator	NO

Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	Yes		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	08/12/2022
Approved by	Deepika Mahala (Technical Manager)	**Date**	15/12/2022

Competence Statement			
Name	Atulya Dhar		
Education	M.Tech (Remote Sensing and GIS); BE (Electronics and Communication Engineering)		
Experience	5 Months		
Field	Information Technology and Engineering		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	YES		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	16/09/2024
Approved by	Deepika Mahala (Technical Manager)	**Date**	16/09/2024

Competence Statement	
Name	Ashok Gautam
Country	India
Education	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)
Experience	16 Years +
Field	Energy, Climate Change & Environment

Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	AMS-I.D., AMS-I.A., AMS-I.C., AMS-I.E, AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Q, AMS-III.Z., AMS-III.AV., AMS III.AR, AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0017, ACM0009, AM0034, AMS.I.B, ACM0016, AMS-III.BL, AMS-II.L, AMS-I.I., AMS-III.A.O., ACM0010, ACM0025		
Local expert	YES (India)		
Financial Expert	YES		
Technical Reviewer	YES		
TA Expert	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1)		
Reviewed by	Shifali Guleria	**Date**	06/03/2023
Approved by	Deepika Mahala	**Date**	06/03/2023

Competence Statement			
Name	Sadaf Nazneen		
Education	PhD (Environmental Sciences)		
Experience	4 Years		
Field	Climate Change & Environment		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	YES (14.1)		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	06/09/2023
Approved by	Deepika Mahala (Technical Manager)	**Date**	06/09/2023

APPENDIX III: LIST OF DOCUMENTS REFERRED

Ref no.	Author	Title	Reference to the document	Provider
1	PP	VCS Project Description & Monitoring Report (PDMR)	Version 2.0 dated 30/10/2024	PP
2	VCS	VCS Joint Project Description & Monitoring Report template	Version 4.2	Others
3	VCS	VCS Standard	Version 4.5	Others
4	VCS	VCS Program Guide	Version 4.4	Others
5	VCS	VCS Program Definitions	Version 4.4	Others
6	VCS	VCS Validation and Verification Manual	Version 3.2	Others
7	VCS	VCS AFOLU Non-Permanence Risk Tool	Version 4.2	Others
8	VCS	AFOLU Non-Performance Risk Report Excel Calculation Tool template	Version 4.2	Others
9	VCS	VCS AFOLU Guidance: Example for Calculating the Long-Term Average Carbon Stock for ARR Projects with Harvesting	-	Others
10	UNFCCC	AR-ACM0003 A/R Large-scale Consolidated Methodology Afforestation and reforestation of lands except wetlands	Version 2.0	Others
11	UNFCCC	AR-Tool 02: Combined tool to identify the baseline scenario and demonstrate the additionality in A/R CDM project activities	Version 1.0	Others
12	UNFCCC	AR Tool 08: Estimation of non-CO2 GHG emissions from burning of biomass attributable to a CDM A/R project activity	Version 4.0.0	Others
13	UNFCCC	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	Others
14	UNFCCC	AR-Tool 16: Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities	Version 1.1.0	Others
15	UNFCCC	AR-tool 03: Calculation of the number of sample plots for measurements within A/R CDM project activities	Version 2.1.0	Others
16	UNFCCC	AR Tool 14: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activity	Version 4.2	Others
17	UNFCCC	AR-Tool 12: Estimation of carbon stocks and change in carbon stocks in deadwood and litter in A/R CDM project activity	Version 3.1	Others
18	UNFCCC	AR-Tool 17: Demonstrating appropriateness of allometric equations for estimation of	Version 1	Others

		aboveground tree biomass in A/R CDM project activities		
19	UNFCCC	CDM Standard: Sampling and surveys for CDM project activities and programmes of activities	Version 9.0	Others
20	UNFCCC	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities	Version 4.0	Others
21	VERRA	VCS Project webpage https://registry.verra.org/app/projectDetail/VCS/4475	Last accessed on 19/02/2024	Others
22	PP	VCS Non-Permanence Risk report (VCS NPR REP 4475)	Version 1.0 dated 15/02/2024	PP
23	PP	AFOLU NPRT Noted 4475	Corresponding to NPR Report	PP
24	The Republic of Uganda Ministry of Water and Environment	Updated Nationally Determined Contribution (NDC)	September 2022	PP
25	Kijani Forestry	Adaptive Management Plan	Version 1.2 dated 16/12/2023	PP
26	PP	Farmer Income Projections excel sheet	-	PP
27	IPCC	WGI reference regions shape file	-	Others
28	PP	KF Nursery Hub Charcoal Model	-	PP
29	Gulu District Local Government	DFO Gmelina arborea	05/11/2020	PP
30	Kijani Forestry	Nursery Hub Gardens Forest Management Plan	Version 1.2 dated 04/12/2023	PP
31	PP	MEL Handbook (both full and Baseline Monitoring Excerpt)	-	PP
32	PP	MoU Agago	-	PP
33	PP	MoU Kijani and Ministry	-	PP
34	PP	Sample farmer contracts	-	PP
35	Kijani Forestry	Seed and Nursery Expenses	January 2022	PP
36	Kijani Forestry	Nursery Visit samples	-	PP
37	Kijani Forestry	Staff list	06/11/2023	PP
38	Kijani Forestry	Training Manual	-	PP
39	Kijani Forestry	Uganda Legal and Regulatory Framework	-	PP
40	Kijani Forestry	KML file 2022 Kijani polygons	-	PP
41	Kijani Forestry	KML file 2022 Kijani gardens	-	PP
42	Kijani Forestry	Kijani database 2022 - 2023	-	PP
43	Kijani Forestry	Land cover eligibility protocol document	-	PP
44	Kijani Forestry	Partner Collaboration Framework Agreement, Uganda	-	PP
45	Kijani Forestry	Ex-ante ERR Kijani	-	PP
46	Kijani Forestry	Ex-post ERR Kijani	-	PP

47	Kijani Forestry	ForInv results	Aug 2023	PP
48	Kijani Forestry	NPR Risk report calculations tool excel sheet	-	PP
49	Kijani Forestry	Forestry inventory database	-	PP
50	Kijani Forestry	Tree data collection form	-	PP
51	Kijani Forestry	Garden inventory guide	-	PP
52	Kijani Forestry	2022 DCs and SCs Payroll	-	PP
53	Kijani Forestry	2022 Intern salary Payroll	-	PP
54	Kijani Forestry	2022 Office Staff Payroll	-	PP
55	Kijani Forestry	Stakeholder consultation meeting records	-	PP
56	Kijani Forestry	Photographic evidence of plantation	-	PP
57	Earthood	Site visit records (filled checklist, photographs)	-	Others
58	Various	The National Environmental Act of 1996 The National Forestry and Tree Planting Act 2003 The Employment Act, 2006 The National Social Security Fund Act Companies Act National Forestry and Tree Planting Regulations, 2016 SPGS Tree Planting Guidelines for Uganda	-	Others
59	PP	Undertaking	-	PP
60	PP	Module 2: Nursery Establishment and Management Module 3: Agronomy and Agroforestry Module 4: Plantation Establishment and Management Module 5: Monitoring, Evaluation, Accountability, and Learning Module 6: Leadership and Management skills	-	PP
61	PP	Fleet Management Policy (The transport management policy, procedures and guidelines) Anti-fraud and theft policy Performance management policy Sexual misconduct (harassment, exploitation, violence) Human Resource Manual Policies and Procedures (20/06/2023) Leave Management Policy Occupational Health and Safety Policy Disciplinary Action Guideline Policy	-	PP
62	PP	Farmers' training records: Training Manual_ToT_Kijani Forestry	-	PP

63	PP	Plantation activity records	-	PP
64	PP	Copy of Quality assurance and quality control (QA/QC) procedures	-	PP
65	PP	Copy of Kijani's Work Manual	-	PP
66	PP	Kijani Forestry Grievance Redress Mechanism	-	PP
67	PP	Nursery Hub Adaptive Management Plan	-	PP
68	PP	MoU between Omoro District Local Government and Kijani Forestry Company Limited	-	PP
69	PP	2022 KML - Feb 22nd.geojson	-	PP
70	PP	Protected-areas_UGA.zip L2_UGA_LCC_22.tif L2_UGA_LCC_12.tif Africa_2001_primary.tif satelliteimg_2009.pdf satelliteimg_2009_ii Uganda_HWSD2_IPCC_Soils_2022.remapped.tif	-	PP
71	PP	National Tree Seed Center Price List 2022	-	PP
72	PP	Determination of the Sample Size	-	PP
73	PP	Clarification document - Land Ownership in Uganda	-	PP
74	PP	2022 Garden Database Export.xlsx	-	PP
75	PP	Forest management plan.	-	PP
76	PP	Farmer Income Projections.xlsx	-	PP
77	PP	Nursery Hub Carbon Model.xlsx	-	PP
78	PP	Nursery Hub Charcoal Model	-	PP
79	PP	Stakeholders Identification and Consultation Process Protocol	-	PP
80	PP	Ongoing LSC Grievances	-	PP
81	OCW	https://www.onecarbonworld.com/stakeholder-forms/uganda-stakeholder-form	-	Others
82	Kijani	https://www.kijaniforestry.com/nursery-hubs	-	Others
83	PP	Kijani Investment Summary copy	-	PP
84	Zainabu Kakungulu & Leonidas Hitimana	Financial support for plantations Financial incentives promoting afforestation in Uganda's drylands	-	PP
85	Biodiversity links	https://www.biodiversitylinks.org/library/resources/rmp/library/content/frame/land-degradation-case-studies-05-uganda/@@download/file/LAND5.pdf	-	Others
86	Nkonya et al	Nkonya, E., Pender, J., Kaizzi, K. C., Kato, E., Mugarura, S., Ssali, H., & Muwonge, J. (2008). *Linkages between land management, land degradation, and poverty in Sub-Saharan Africa: The case of Uganda* (Vol. 159). Intl Food Policy Res Inst.	2008	Others
87	Call and Gray	Call, M., & Gray, C. (2020). Climate anomalies, land degradation, and rural out-	2020	Others

		migration in Uganda. *Population and Environment*, *41*, 507-528.		
88	Farm radio	https://scripts.farmradio.fm/radio-script/restoring-degraded-land-in-northern-uganda-by-planting-indigenous-trees/#:~:text=We%20work%20with%20farmers%20to%20create%20tree%20nurseries.,So%20this%20is%20forest%20restoration.	-	Others
89	PP	*Disaster-Risk-Profile-Uganda.pdf*	-	PP
90	PP	*Application_of_geospatial_tools_for_landslide_haza.pdf*	-	PP
91	PP	*Update-report_Uganda_Rural-LakeVictoriaBasin_2023_JUNE.pdf*	-	PP
92	PP	*Farmer Income Projections 2025 – Verra.xlsx*	--	PP
93	PP	*burnedarea_2000-2025.jpg*	--	PP
94	PP	*NUganda_burnedArea_2025.burned.TIF*	-	PP
95	Chave, J., et al. (2014)	*Improved allometric models to estimate the aboveground biomass of tropical trees*https://doi.org/10.1111/gcb.12629	--	Others
96	PP	*Agreement between Kikani forestry and participating farmars*	--	PP
97	PP	*SELECTION OF ALLOMETRIC EQUATIONS FOR EX-POST ERR ESTIMATIONS*	-	PP
98	PP	*AirImpact and MYRLIN Procedure*	-	PP

APPENDIX IV: CLARIFICATION REQUESTS, CORRECTIVE ACTION REQUESTS AND FORWARD ACTION REQUESTS

CAR: Corrective Action Request
CL: Clarification Request
FAR: Forward Action Request

Table 1. Remaining FAR from validation and/or previous verification

FAR ID		**Section no.**	NA	**Date :** DD/MM/YYYY
Description of FAR				
Not applicable as this the joint validation and first verification.				
Project participant response				**Date :** DD/MM/YYYY
Documentation provided by project participant				
VVB assessment				**Date:** DD/MM/YYYY

Table 2. CL from this validation

CL ID	01	**Section no.**	3.1	**Date :** 09/11/2023
Description of CL				
Section 1.1 of the PDMR It is stated in the PDMR that "as of 2022, Kijani has planted over 2 million trees with over 5,000 farmers throughout northern Uganda". Is this planted under this project or as a different initiative? In case the plantation of 2 million trees is done under this project, records are to be provided to substantiate the same. The same section includes mention of training. What are the types of training and support provided to communities and farmers? What is the training mode and how frequently is it conducted? Considering the extent of area of this project, is the training provided or plan to be provided to all farmers? Kindly provide information in the PDMR and support the substantiation with relevant evidence.				
Project participant response				**Date :** 13/02/2024
The plantation of 2 million trees corresponds to Kijani´s activity over the past recent years. This number of trees are not entirely part of the project since Kijani has other commercial agreements for them. This Verra project considers 2022 plantations and onwards. The section will be modified to clarify the activity considered under Verra´s project. There is “A Comprehensive Training Manual for Trainer of Trainers (ToTs)” which includes ‘Community mobilization; Nursery establishment and management; Agronomy and Agroforestry; Plantation establishment and management; Monitoring, evaluation, accountability and learning; Leadership and management skills.’ The document has been shared as part of the list of documents.				
Documentation provided by project participant				
VCS-joint-PDMR-v4.2- Final *Training Manual_ToT_Kijani Forestry.pdf*				
VVB assessment				**Date:** 19/02/2024
PP has provided revised PDMR with appropriate and relevant context of the project design and plantation activity. Further, submitted training manual has been checked. CL#01 stands closed.				

CL ID	02	**Section no.**		**Date :** 09/11/2023
Description of CL				

Section 1.1 of the PDMR In the PDMR, it is given that "*Melia volkensii, Gmelina arborea, Maesopsis eminii, Terminalia glaucensis, Senegalia polyacantha*, and a variety of indigenous acacia species." are planted in this project. However, there is lack of literature given in the PDMR to support and justify that the species planted in this project are native and not invasive. Refer VCS Standard version 4.5 section 3.19.27
Project participant response **Date :** 07/12/2023
In the following source, it can be seen how these species are native: https://apps.worldagroforestry.org/suitable-tree/ Melia volkensii - NATIVE Gmelina arborea - no native, but have a confirmation letter from NFA regarding it's non-invasiveness and nativized status within Uganda Maesopsis eminii - NATIVE Terminalia glaucensis - (Terminalia ivorensis) - native Senegalia polyacantha - pag 309 https://books.google.com.uy/books?hl=es&lr=&id=Yp7eDwAAQBAJ&oi=fnd&pg=PA83&dq=Senegalia+polyacantha+native+uganda+afforestation&ots=_nfcFyP7np&sig=i_5DNP5Z7wrLzEpSfYrHqHcHkwg&redir_esc=y#v=onepage&q&f=false
Documentation provided by project participant
DFO Gmelina arborea.pdf
VVB assessment **Date:** 25/01/2024
CL#02 has been closed based on the clarification and evidence provided.

CL ID	03	**Section no.**	3.1	**Date :** 09/11/2023
Description of CL				
Section 1.1 of the PDMR The description of project area, first instance and trees plantation number does not provide clarity on following things. 1. What would be the area of the project identified under the first PAI and validation in this project? 2. What does "garden" refer to? Is this the area owned by individual farmers who signed up in this project or a piece of land dedicated for this project? 3. How the area is accounted for at each farmer level? 4. Which vintage/s of plantations are considered for first verification? 5. The areas provided for Anyeko Monica, Opira Bosco, and Kinyera Paul are different. How does the area of each garden and in different district factor in and represented? Please share sufficient literature to validate the same.				
Project participant response				**Date :** 07/12/2023
1. The first instance will involve 865 gardens planted in 2022 (which comprise a total area of 151.24 ha and 182,987 trees planted) and 7,545 gardens planted in 2023 which compound 2,287 ha with 1,686,676 planted trees as of August 31st, 2023 2. Garden is a piece of land in which the trees are planted. The garden can also be named as farm and belongs to a farmer. Garden is a suitable word because of the size of these lands. Is the area owned by individual farmers who signed up in this project or a piece of land dedicated for this project 3. We track all of the gardens using a GPS tool through smartphones. The field coordinators trace the perimeter of the trees planted. For adjacent gardens with separate family members, separate plots will be measured. The area planted is calculated through the software platform and the data and kml files are kept in the Kijani database. 4. For this verification 2022 plantations have been measured. 2023 plantations were too small and are not part of the inventory. 2022 plantations will generate 2022 and 2023 vintages. 5. The areas of Anyeko Monica, Opira Bosco, and Kinyera Paul are just examplarization of how the gardens look like.				
Documentation provided by project participant				

Plots refer to the samples of trees that are measured for the forest inventory. *Gadens refer to the land where the farmers plant the trees.* *"Field" refers to the general setting outside of the office where the extension workers work.* *PDD has been reviewed to ensure all terms are consistent.: VCS-joint-PDMR-v4.2- Final* *Several pictures from the forest inventory*
VVB assessment **Date:** 19/02/2024
VVB has reviewed the responses as follows. *1. Total area of the 2022 year was found to be 145.55 hectares (359.67 acres) and 2287.72 hectares (5653.07 acres) for 2023 year. The area calculated in the KML file is inaccurate. Further, there are inconsistencies in the total number of fields and total project area for each vintage were identified. Comment stands open.* *2. Response on explanation of "Garden" term used in the project is okay, however, it is required to define the minimum size of the land/ area considered in project to establish "Garden". Since, the polygons observed in the KML file is not accurate and could not be checked with project database, it is required to provide more clarity on establishment and demarcation of garden. Comment stands open.* *3. QA/QC procedure of field demarcation is not provided clearly in the PDMR. Comment stands open.* *4. The response states that "2023 plantations were too small and are not part of the inventory", however, the monitoring period considered under first verification includes both 2022 and 2023 years (01/03/2020 to 01/03/2023). Comment stands open.* **5.** *Comment stands closed as the Anyeko Monica, Opira Bosco, and Kinyera Paul are presented as examples only in PDMR.*
Project participant response **Date:** 19/02/2024
1. Revision has been completed and is reflected in the "2022 KML - Feb22nd.geojson" file in CAR05 *2. There is no minimum size for a garden.* *3. The explanation of the QA/QC procedure for field demarcation is established in updated chapter 6.3* 4. 2022 plantations are considered for first verification, they were measured and reported to establish the amount of VCUs to be generated. The confusion might be with the use of the word "vintage". These 2022 plantation have grown in 2022 and 2023 and according to the definition of vintage, we have 2022 and 2023 vintage for the plantation year 2022.
Documentation provided by project participant
2022 KML - Feb22nd.geojson *PDMR section 6.3*
VVB assessment **Date:** 28/02/2024
Submitted KML has been checked and it was found that PP has sufficiently provided the farm details for 2022 year. Other details are also updated in the PDMR. CL#03 stands closed.

CL ID	04	**Section no.**		**Date :** 09/11/2023
Description of CL				
Section 1.1 and 1.7 of the PDMR In the document titled "Partner_CFA_National_Project_Collabration_Framework_Agreement_OCW_Sustainable_Carbon_Credits_UGANDA "registered planting sites" are mentioned. What do "registered planting sites" mean in context of this project? Who identifies these sites and what are the criteria set to be able to include them in this project? In the same document, it is mentioned that the agreement is signed between Kijani Forestry and OCW dated 26/01/2023 however, following things are not clear. - Who has the ownership of carbon credits generated from this project?				

- the contract is signed in 2023 while the start date of the project is identified as 01/01/2022.

Please refer VCS Standard version 4.5 section 3.7 which states "Project and jurisdictional proponents must demonstrate that they have the legal right to control and operate project or program activities. “Explain how the project is demonstrating compliance with para 3.7.1 of the standard. How PP started the project work without the legal ownership.

Project participant response	**Date :** 07/12/2023

At the moment, the ownership of the carbon credits belongs to Kijani. These can be seen in every contract signed with the farmer. The purpose of doing this is because Kijani has shared with the farmer the outcomes of the forest plantation (charcoal and timber) but has momentaneously considered having the carbon credits to reinvest in the project, making more plantations possible.
Project proponent demonstrate they have the legal right to control and operate project or program activities because Kijani participates in the timber and charcoal business with the farmer. They both decide when is best to harvest and where to sell the timber.
The signature of the contract with OCW is just for advisory services and the date of signature has nothing to do with the project activity.

Documentation provided by project participant

VVB assessment	**Date:** 25/01/2024

Finding stands open as more clarification is requested. Partner Collaboration Framework Agreement between Kijani Forestry and One Carbon World dated 26/01/2023 does not provide confirm the owner of the carbon credits. The only statement that holds relevance wrt project ownership is given in page no. 1.
"Under a grouped project in the globally recognized Verra standard, OCW has developed a trustworthy structure, platform and mode of operation to verify and independently ascertain the CO2 and GHG reductions, and the nature-based carbon credits generated. OCW has the sole and overall right to include new project instances under the project in VERRA." This statement only talks about the project activity instances but not the carbon credits. Furthermore, the document only mentions the utilization of carbon credits after issuance.
Additionally, there is no contract submitted that demonstrate the engagement of CLIMIT with PP.
Please clarify the following:
1. How the above mentioned contract suffice the requirement of demonstrating the ownership of carbon credits.
2. The contract between CLIMIT (other entity) and PP (OCW and Kijani Forestry) is missing.
3. How the rights of project ownership and carbon credits attained from this project is distributed among project entities.
CL#04 stands open.

Project participant response	**Date :** 13/02/2024

1. The contract between Kijani Forestry and OCW has been amended to reflect properly the ownership of carbon credits.
2. CLIMIT has been erased from different sections in the PD, to avoid confusion about project participants and their relation.
3. This is also clear in the new version of the contract between OCW and Kijani Forestry

Documentation provided by project participant

Partner_CFA_National_Project_Collaboration_Framework_Agreement_OCW_Sustainable_Carbon_Credits_-_UGANDA_signed.pdf
PARTNE~2.PDF
4 Sample farmer contracts

VVB assessment	**Date:** DD/MM/YYYY

The submitted evidence “Partner Collaboration Framework Agreement Uganda” dated 09/02/2024 confirmed that Partner (Kijani Forestry PBC) are the owners of carbon credits generated from the project that commenced on the project start date (as uploaded in VERRA registry from the Project Design Document). Since the involvement of CLIMIT is clarified and not substantially included in the project carbon credits allotment, no further explanation is required.
CL#04 stands closed.

CL ID	05	Section no.		Date : 09/11/2023
Description of CL				
Section 1.7 of the PDMR How does a project demonstrate land ownership? Is there any contract between PP or other entity and farmers? Is this land owned by farmers only? or it is leased or purchased by another landowner. Also, what activities are allowed by the landowners? and how these activities are performed in this project. Please refer VCS Standard version 4.5 section 3.7 which states "Project and jurisdictional proponents must demonstrate that they have the legal right to control and operate project or program activities. “Explain how the project is demonstrating compliance with para 3.7.1 of the standard.				
Project participant response				**Date :** 07/12/2023
Land ownership detailed provided in the “Land Ownership in Uganda” document. Also, to respond to the allowed activities: “Laws around activities allowed by the farmers and Kijani are provided in the Forest Management Plan”				
Documentation provided by project participant				
Land Ownership Doc				
VVB assessment				**Date:** 25/01/2024
The document submitted has been reviewed. PP shall provide the description of land ownership in 1) Uganda 2) Northern Uganda 3) Districts covered in this project In the relevant section of PDMR. Furthermore, the discussion held with PP during site visit indicated the role of Rwot Kheri, District head, village saving & leaning associate (VSLA), village group head and secretary, community leaders and cultural head. PP is required to explain the arrangement of positions, and their roles in this project in detail in relevant section of PDMR. This would help to bring clarification on land ownership aspect, land transfer and land management in the project area. CL#05 stands open.				
Project participant response				**Date :** 13/02/2024
Section 1.7 and 1.11 of the PDMR has been amended based on the discussion taken during the site visit				
Documentation provided by project participant				
Land Ownership in Northern Uganda v2 *VCS-joint-PDMR-v4.2- Final*				
VVB assessment				**Date:** 19/02/2024
PP has sufficiently explained the land ownership in the Uganda and project location. In PDMR section 1.7. CL#05 stands closed.				

CL ID	06	Section no.		Date : 09/11/2023
Description of CL				
In the section 1.3 of the PDMR, It is given that this project includes timber harvesting and selective harvesting and regeneration for fuelwood in its management plan. Please share the management plan. Also, explain what the harvesting schedule or cropping calendar applicable in this project based on host country's requirements? How is it managed and implemented in this project? In the same context, it is required to know whether the project is taking long term average calculation into account.				
Project participant response				**Date :** 13/02/2024

The Forest Management plan is provided The project is taking long term average calculation into account. The “exante_kijani_commented.xlsx” file in the sheet “PLANTED-TREES”, line 17 (as an example) it can be seen that the number of trees Gmelina increases up to year 9 (2030) and drops to the initial value as in year 1 (2031) because of the harvesting of trees. This same excel is provided with comments attached.
Documentation provided by project participant
Forest Management Plan v1.2.pdf exante_kijani_commented.xlsx
VVB assessment **Date:** 19/02/2024
None of the project supportive documents including forest management plan provide the plantation model types adopted in the project.
Project participant response **Date:** 22/02/2024
The Forest Management plan is provided as a pdf under the name “Forest Management plans V1.2.pdf”. The file is in the folder CL06. In page 10 to 12 it can be seen the “plantation management schedules” for the different forest purposes: fuelwood, charcoal and timber. It can be seen in figure 1 to 5 the management plan including harvesting. In page 5 it says that “after harvesting, Kijani shall work with the farmers to replant timber trees in the gaps between rows, while leaving the existing root structures in the ground to decompose and add the nutrients back into the soil.”
VVB assessment **Date:** 28/02/2024
CL#06 stands closed based on the revised document reviewed by VVB.

CL ID	07	**Section no.**		**Date:** 09/11/2023
Description of CL				
PDMR Section 1.11 The project includes operation through Kijani's Nursery Hub model. PP shall explain what this model entails. Who developed this model and how this is applied in this project? What is the concept of "farmers group" in the context of Uganda and in this project? It is given in PDMR (page no. 12) that "Kijani establishes thousands of nurseries in these rural communities in partnership with farmer groups to address the inability for rural farmers to afford and access seedlings." The section also provides information about Community Mobilization team. Please elaborate what does this team do? What is the role and contribution of this team in this project and how its engagement will be observed in this project.				
Project participant response				**Date :** 07/12/2023
Kijani’s Nursery Hub model is the decentralized model for seedling raising in our communities. The nurseries serve as a ‘hub’ for all Kijani activities, and where the seedlings are raised for planting. These nurseries are managed by farmer groups. Many farmers in northern Uganda are self-organized into groups, either for savings (through Village Savings and Loans Associations) or other social reasons. Kijani taps into this existing social infrastructure to mobilize these groups for Kijani activities as well. When Kijani is asked to enter a new community, usually by local government officials, Kijani’s Community Mobilization team meets with these groups to share about Kijani’s program, go over benefits of tree planting, and determine if a group is interested in participation. Once a group has confirmed their interest, the Community Mobilization team hands it over to the local Parish Coordinator, who then works with the group to establish the nursery and start the process of raising seedlings. Periodically, the Community Mobilization team may visit the group again, as support for the Parish Coordinator, to address any questions or concerns the group may be having.				
Documentation provided by project participant				
VCS-joint-PDMR-v4.2- Final				
VVB assessment				**Date:** 19/02/2024
The clarification provided by PP on Kijani’s Nursery Hub model was found consistent in PD, Kijani Nursery Hub model document and site visit records and interviews. CL#07 stands closed.				

CL ID	08	Section no.		Date : 09/11/2023
Description of CL				
PDMR Section 1.13 It was mentioned that the pre project condition in the areas were degraded land primarily used for agriculture. Please elaborate this condition wrt to Uganda's land use type and ownership. Has there been any land use change from the past 10 years in the project area? How is the land use change identified? Please refer VCS Standard v4.5 para 3.19.28 and clarify.				
Project participant response				**Date :** 07/12/2023
Land parcels considered in this project has a long history of agriculture use. It can be interpreted, based on consultation to elder farmers that the land could have been under some kind of forest ecosystem but converted to cropland many decades ago. The historical satellite imagery of the area is analyzed from FAO layers where it shows “cropland” land use in the last 10 years. Section 1.13 of the PD/MR, figure 5, are illustrative pictures of the historical land use. To assess the land cover in the 10 past years different sources of satellite information are used. Firstly, FAO land cover layers are overlapped to evaluate the land cover of the project’s area 10 years ago. Simultaneously, protected areas and primary forest layer from the Global Forest Watch are used to discard any of the project areas which fall into any of these two categories. IPCC soils categories are also assessed to determine if any of the gardens are under wetlands). Earth Observation is used to assess the historical satellite images for the farms which fell on the following categories: - Forest cover (FAO) - Primary Forests , Protected Areas (GFW) .				
Documentation provided by project participant				
VVB assessment				**Date:** 19/02/2024
PP is requested to provide the following raster files for assessment: 1. FAO land cover layers (pre and during project, 10-year window for project eligibility). 2. Primary and protected forest layer from Global Forest Watch. 3. IPCC soil categories. CL#09 stands open.				
Project participant response				**Date :** 22/02/2024
Raster layers are provided now				
Documentation provided by project participant				
Protected-areas_UGA.zip *L2_UGA_LCC_22.tif* *L2_UGA_LCC_12.tif* *Africa_2001_primary.tif* *Uganda_HWSD2_IPCC_Soils_2022.remapped.tif*				
VVB assessment				**Date:** 28/02/2024
Submitted raster file was found sufficient to check the pre project condition. CL#08 stands closed.				

CL ID	09	Section no.		Date : 09/11/2023
Description of CL				
PDMR section 1.18 It is given that Kijani has a 400-acre research and development facility in Gulu District, Uganda. It is know how does this facility is contributing in this project? What type of data or information is expected to be used in this project? The same section also mentions Kijani’s internship program. What does this program include and how it is joined in this project? Please share sufficient evidence to confirm the same.				
Project participant response				**Date :** 07/12/2023
Section 1.18 has been modified:				

Kijani's 400-acre research and development facility in Gulu, Uganda contributes to the project primarily as the training venue for Kijani's internship program. Kijani's internship program recruits youth from partner communities to participate in a paid, two-month long internship program. By hosting this program on-site at an agroforestry facility, participants gain hands-on experience with all stages of nursery and plantation management. This facility is also used to test germination and growth rates of different species, both in the nursery and in demonstration plots around the farm. Interns are able to see different species at various stages of growth and carry that knowledge to the farmers that they train in the communities. This has been added to the PD
Documentation provided by project participant
PP has uploaded the below documents. The ToT document is our training manual for our training of trainers (Parish Coordinators being the trainers) *Uploaded list of interns trained. - "CL 11 - Lists of interns - All 11 Lots.xlsx"* *Training materials are what have been provided in the "10 Training Manual_ToT_Kijani Forestry.pdf"*
VVB assessment **Date:** 19/02/2024
PP has provided detailed information on the Gulu district farm and Kijani internship program. These details when reviewed with submitted evidence were found to be complete and consistent with the interview records of site visit. CL#09 stands closed.

CL ID	10	**Section no.**		**Date :** 09/11/2023
Description of CL				
PDMR section 2.1 In this section of PDMR where the no net harm information is required in support of this project, it is required to know what the outcomes of due diligence studies were conducted on species planted in this project. Sufficient justification on plantation species and evidence are required.				
Project participant response				**Date:** 07/12/2023
In the context of "no net harm" in afforestation projects, it is crucial to carefully assess the ecological, social, and economic impacts of the species considered. This includes monitoring their growth, potential invasiveness, and interactions with local flora and fauna. Kijani's sustainable management practices, community engagement, and adherence to conservation principles are essential for ensuring that afforestation efforts do not result in a net harm to the environment. Additionally, by the incorporation of native species into Kijani's project will enhance biodiversity conservation and ecosystem resilience. Here is a brief overview of each species and discuss the concept of "no net harm" in afforestation projects in Uganda. *Melia volkensii* (Melia africana): Also known as the African Neem or Melia, this species is native to East Africa. It is valued for its fast growth, high-quality timber, and various traditional uses. *Melia volkensii* has been introduced in afforestation projects for its economic benefits. Gmelina arborea: Gmelina arborea, commonly known as Gmelina, is a fast-growing tree species native to Southeast Asia. It is widely planted for timber production and agroforestry. Gmelina can positively contribute to afforestation projects by providing wood resources and supporting local livelihoods. *Maesopsis eminii:* *Maesopsis eminii*, also known as Musizi or East African satinwood, is native to East Africa. It is valued for its high-quality timber and adaptability to various ecological conditions. When used in afforestation, *Maesopsis eminii* can contribute to timber production and ecosystem services.. *Terminalia glaucescens:* *Terminalia glaucescens* is a native tree species in Africa. It plays a role in traditional medicine and is used for timber. When incorporated into afforestation projects, *Terminalia glaucescens* can support biodiversity and provide ecosystem services. *Senegalia polyacantha:* *Senegalia polyacantha* is a thorny, deciduous tree native to Africa. It is valued for its timber and has multiple traditional uses.				
Documentation provided by project participant				
PP has edited the PDD for the species selection process and consulting the government in that process.				

DFO Gmelina arborea.pdf
VVB assessment **Date:** 19/02/2024
A due diligence report or species selection document is required. Finding stands open.
Project participant response **Date:** 22/2/2024
The selection criteria are now included in the PDD and pasted below. Beyond this, all of the above species are promoted by Uganda's National Forest Authority and are available to purchase through the National Tree Seed Center as is shown by the document "National Tree Seed Center Price List 2022.pdf". The non-native Gmelina has been brought up to the Gulu District Forest Officer regarding any invasiveness of the species. The district responded with a formal letter confirming there were no invasive qualities in the Uganda ecosystem and promoted its use throughout the farmers in the district. *"Kijani places careful consideration on species selection, only planting species that have no known negative impacts on the local environment and have multiple benefits for the smallholder farmers. Kijani consults with the local and national government before considering any species and does not introduce any new and exotic species into the Ugandan ecosystem. Kijani only plants species that are promoted by the National Forest Authority and receives local buy-in from each districts District Forest Officer to ensure there is no net harm. Each of the local District Forest Officers (DFOs) are involved in the inception meetings when Kijani introduces the program and outlines the tree species we will plant with the farmers. They are involved and advise in the process and have not required any additional reports or otherwise since the species are known in their areas and are promoted by the national government."*
Documentation provided by project participant
National Tree Seed Center Price List 2022.pdf

VVB assessment	**Date:** 28/02/2024
Submitted evidence was checked to confirm the no net harm information provided by PP. CL#10 stands closed based on the sufficient information provided by PP.	

CL ID	11	**Section no.**		**Date :** 09/11/2023
Description of CL				
PDMR section 2.3 This section of PDMR mentioned that limited regulations are imposed on private land for Kijani's activities and listed few regulations. Clarification is required as to how the project is in line with country's requirements. Further, explain the environmental impact				
Project participant response				**Date :** 07/12/2023
Kijani has a national-level agreement with the Ministry of Water and Environment allowing our operations to proceed in any district throughout the country. All activities are in line with the laws and regulations and are detailed out in the Forest Management Plan. Kijani has also a MoU with Agago District Local Government to reforest				
Documentation provided by project participant				
MOUs between Kijani Forestry and Agago, Gulu, and Kitgum, Omoro. MOU between Min and Kijani trees20230130_07530446				
VVB assessment				**Date:** 19/02/2024
Please refer to the added comment.				
Project participant response				**Date :** 22/02/2023
Section 1.14 "Compliance with laws.." in the PDMR have been amended with the following text: Kijani ensures that the project adheres to all local laws and regulations in Uganda and that we follow all nationally accepted best practices for sustainable plantation management. In accordance with Uganda's 2003 Forest Act, Section 27 and the National Forestry and Tree Planting Regulations of 2016, the trees planted with farmers are considered the farmers' property and the laws and regulations concerning this private property will continue to be followed throughout the 100+ year engagement with each farmer. The plans in the forest management plan are prepared with advice and				

assistance from Uganda's Ministry of the Water and Environment personnel and in accordance with the following national policies and guidelines:

- National Forestry and Tree Planting Act, 2003
- National Forestry and Tree Planting Regulations, 2016
- SPGS Tree Planting Guidelines for Uganda

Moreover, Kijani Forestry has entered into Memorandums of Understanding (MoUs) with all the districts in which it operates. These MoUs delineate specific "purposes and objectives," "obligations," and "principles of collaboration," among other pertinent topics, for both parties involved – namely, Kijani and the respective Districts (representing local government entities). A visual representation of the signature of these MoUs is provided below.

It is evident from these agreements that the local government authorities endorse and support Kijani's activities, which are meticulously aligned with both local and national legislative frameworks. For instance, the MoUs explicitly stipulate that the governing law governing these agreements is derived from the laws of the Republic of Uganda. This verifiable evidence can be corroborated through on-site visits to the fields during the validation process.

Documentation provided by project participant	
VVB assessment	**Date:** 28/02/2024
CL#11 stands closed based on the evidence reviewed by VVB and revisions done in the PDMR.	

CL ID	12	**Section no.**		**Date :** 09/11/2023
Description of CL				

PDMR section 3.2

VVB has reviewed this section which includes the project compliance with the requirements of applicability of methodology. It is mentioned for one of the criteria that "the land preparation in this project is insignificant". However, the current project details given in the PDMR and provided through evidence do not confirm whether the justification provided in the PDMR is correct or not.

Meth AR-ACM0003 version 2.0 para 3 applicability condition (b) says "soil disturbance attributable to the project activity does not cover more than 10 per cent of area2 in each of the following types of land, when these lands are included within the project boundary: (i) Land containing organic soils; (ii)Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to this methodology.

Further, appendix 1 of the methodology is related to soil disturbance in cropland.

1. It is not clear how PP is justifying the project compliance with this methodology requirement.
2. PDMR also include mention of tillage and other land management activities

Furthermore, PP is also required to explain the applicability of tool 16 Tool for estimation of change in soil organic carbon stocks due to the implementation of A/R CDM project activities" in the PDMR.
Project participant response **Date :** 07/12/2023
1. The compliance of this requirement is demonstrated by the fact that there is a minimum spot disturbance of 0,5x0,5m to plant the tree, considering a 2m spacing the soil disturbance is 4.9% of the planted area (project area) 2. Tillage is only mentioned in the PD as part of the baseline activities,
Documentation provided by project participant
Forest Management plan in CL 06
VVB assessment **Date:** 19/02/2024
VVB checked the revised context of section 3.2 of PDMR and considered the response provided above, however, the response was found insufficient. For the methodology AR-ACM0003, applicability condition (b), it is stated in the PDMR that "The farmers prepare the site with a hoe (or similar) by taking out the topsoil of an area of 30cm by 30cm (max) at a two or four meter spacing, depending on the tree type." However, it is to be explained whether the "Land containing organic soil" is present within project boundary or not. Then, the methodology para 3(b) requirement is "Land which, in the baseline, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 to this methodology". Region, land use, management practices are not provided in PP as per appendix 1 of the methodology CL#14 stands open.
Project participant response **Date:** 22/02/2024
The project activity instances have never fall under organic soils as it can be proved by overlying "Uganda_HWSD2_IPCC_Soils_2022.remapped.tif" to the project activity shapefile. See folder CL09.
Documentation provided by project participant
"Uganda_HWSD2_IPCC_Soils_2022.remapped.tif"
VVB assessment **Date:** 28/02/2024
CL#12 stands closed based on the review of the submitted supporting document.

CL ID	13	**Section no.**		**Date :** 09/11/2023
Description of CL				
PDMR section 3.3 In this section, PP mentioned that "forest planted area is delineated using GPS technology and aerial photographs". 1. Elaborate whether the forest planted area referred to in PDMR is within the project. 2. The project is said to be implemented in privately owned land by community farmers and the category of land identified for this project is cropland. In contrast, the project boundary section of the PDMR talks about forest planted area. Please explain the type of land used in context of this section. 3. Also, share aerial photographs of these areas and what outcomes were drawn in this case.				
Project participant response				**Date :** 07/12/2023
1. The forest planted area referred to in PDMR is the project. The only forest in this project is what has been planted with Kijani. In section 6.3 the "tracing the planted areas" has been added as part of the improvement of that section 2. The plantation done by Kijani is on privately owned land in croplands. 3. Pictures will be delivered.				
Documentation provided by project participant				
satelliteimg_2009.pdf *satelliteimg_2009_ii*				
VVB assessment				**Date:** 19/02/2024
CL#13 stands closed based on the review of the submitted evidence.				

CL ID	14	**Section no.**		**Date:** 09/11/2023
Description of CL				

PDMR section 3.3 (a) In the table "project boundaries" selected carbon pools are AGB, BGB, DW, Litter, SOC and Burning of woody biomass and gas is CO2. As per applied methodology AR-ACM0003, para 9, carbon pools required for accounting are AGB, BGB. DW, Litter and SOC are optional, however, can be included. The issue is related to the source "burning of woody biomass" The gas to be accounted for is CH4 and N2O. 1. It is to be justified how the carbon pools and their gases accounted in this project are identified in line with methodology. 2. The same table mentions forest fires in the project area. Elaborate on the identification, evidence and occurrence of forest fires.) (b) The methodology also applies AR-TOOL 14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities, v4.2. How this project is accounting carbon stock change in relation to requirements of para 11, 12 and 13 and section 5 and 6.
Project participant response **Date :** 13/02/2024
1. There has been a mistake in the gases selected. CH4 and N2O are considered as part of the project activity. All other mention to forest fires is a requirement from the methodologies and tools. 2. Paragraph 11, 12 and 13 (section 5) of the AR-TOOL 14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R is not applicable since there are no carbon stock in trees and/or shrubs in baseline scenario. Section 6 is used with section 6.2 “Direct estimation of change by re-measurement of sample plots” (one occasion is the actual forest inventory and the first occasion is when the land had no trees and no carbon stock = 0)
Documentation provided by project participant
VVB assessment **Date:** 19/02/2024
1. Finding stands open as the source “Burning of woody biomass” is not corrected reported in PDMR. PDMR section 3.3 table 2 reports inclusion of CO2 only, while methodology AR-ACM0003 para 10, table 2 recommends selection of CH4 gas for “burning of woody biomass”. 2. Paragraph 11, 12 and 13 (section 5) of the AR-TOOL 14 needs to be stated in PDMR section 3.2. CL#15 stands open.
Project participant response **Date :** 22/02/2024
1. This has been corrected now, refer to table 2 section 3.3. CH4 and N2O are considered as part of the project activity, however, burning of woody biomass for site preparation is not part of the forest management. 2. Not applicable since there is no carbon stock of trees and shrubs in the baseline scenario.
Documentation provided by project participant
VVB assessment **Date:** 28/02/2024
CL#14 stands closed based on the review of revisions made in the PDMR.

CL ID	15	**Section no.**		**Date :** 09/11/2023
Description of CL				
VVB requires understanding how the sampling procedures is done for baseline study and monitoring surveys. PP to explain the sampling procedures and whether they have referred applicable CDM toll AR-TOOL03 Calculation of the number of sample plots for measurements within A/R CDM project activities, v2.1.0 AR-AM Tool 08 Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity, v4.0.0 contains the requirements of estimation of non-CO2 GHG emissions resulting from burning of biomass and forest fires. How this has been considered and accounted in this project.				
Project participant response				**Date :** 13/02/2024

The baseline study and monitoring surveys are internal tools for project management, to measure improvements in socio-economic indicators over the lifetime of the project. More details for these surveys can be found in the PDD as well as Kijani's MEL handbook.

Kijani uses the Poverty Probability Index and the Food Insecurity Experience Scale to establish baseline levels of household economic status and food security. A midline and endline assessment will take place over the first 10 years of the project to determine changes in household status

AR-AM Tool 08 Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity, will only be used in the case of forest fires during the project lifetime. There are no fire practices applied to land preparation.

Sampling procedures:
The number of plots we are going to need for 2022 farms is 188. These will need to be distributed the following way:

- Musizi: 16 plots
- Melia: 85 plots
- Lebek: 1 plot
- Faidherhibia: 9 plots
- Gmelina: 34 plots
- Ongono: 29 plots
- Senna: 13 plots
- Opok: 1 plot

Each plot needs to have 5 trees (no less than that) and ideally, no more than 1 plot per species per garden. This means that, regardless of the total number of trees per species in one particular garden (for instance if you have 100 Gmelina planted in the same garden), we need to have only one plot which represents that species in that garden (1 plot of 5 gmelina trees, not 20 plots of 5 trees).

Other considerations:

- **Number of trees per plot: 5**.
- Register the **location of the plots and identify the measured trees** using a spray or something which allows measuring the same trees for the following monitoring event.
- **Measure DBH , NOT basal diameter**. Choose average trees to do the measurements avoiding supressed or dominant trees.
- Keep clean record of data.

Documentation provided by project participant

MEL Handbooks (both full and Baseline Monitoring Excerpt)
Determination of the Sample Size.pdf

VVB assessment	**Date:** 19/02/2024

PP responses has been reviewed along with submitted evidence. It is unclear-
1. How PP has used AR-TOOL03 Calculation of the number of sample plots for measurements within A/R CDM project activities, v2.1.0 for the calculation of no. of plots. Since, the submitted document "determination of the sample size" is not clearly representing the application of tool. Finding stands open.

2. AR-AM Tool 08 Estimation of non-CO2 GHG emissions resulting from burning of biomass attributable to an A/R CDM project activity, v4.0.0 contains the requirements of estimation of non-CO2 GHG emissions resulting from burning of biomass and forest fires. How this has been considered and accounted in this project. In PDMR section 3.2, it is stated that "The project will consider any occurrence of fire within the project boundary", while as per the response it is not clear how the applicability conditions of the Tool 08 is met. Finding stands open.
CL#17 stands open.

Project participant response	**Date :** 19/02/2024

1. This has been added to the submitted document.
2. Further clarification has been added in section 3.2 of the PDD.

Documentation provided by project participant

Determination of the Sample Size_1902024.docx	
VVB assessment	**Date:** 28/02/2024
CL#15 stands closed based on the review of the revisions made in the PDMR.	

CL ID	16	**Section no.**		**Date :** 09/11/2023
Description of CL				

ERR sheet “Kijani-database_2022-2023”

(a) Worksheet “2022”

1. Column H provides date of planting. Please provide proof to check the dates of planting.
2. Column K provides data of Total trees planted and columns L to S provides species planted. How is the selection of species done for plantation for each farm? What is the source of this data?
3. What does information of Column T "R_ID CC Garden" represents? If these are links to some document, then it is not working.

(b) Worksheet “2023”

1. Why the data representation for vintages 2022 and 2023 different? Columns and its information are different in both vintages.
2. What is the difference between information of column C (total trees planted) and D (total tress check)? What column is selected for GHG ERR calculations and what was the basis of selection?
3. Columns Q to U are blank. Please check and confirm.
4. This sheet appears incomplete and does not contain all the information as given in 2022 worksheet.

(c) Which sheet is to be considered for?
(a) baseline data
(b) project database
(c) source file in which all field data is collected

(d) Explain how these data are utilized and transferred to calculated estimated and achieved ERRs.

Project participant response	**Date :** 07/12/2023

Column H is collected by interviewing the farmer and inquiring about the date that they first planted trees in this garden. This verbal exchange is not recorded, and additional proof is not available.

Species selection is done by the farmers, who raise the seedlings with technical guidance from Kijani’s field staff. Farmers are told the various benefits and uses of the available tree species, and pick species based on their own interests. Species data is collected by the monitoring and evaluation team (also called the tracking team), who walk throughout the garden and count the number of seedlings planted of each species. This team is trained in identifying the different species and are able to differentiate them in the field.

Column T is the unique ID generated automatically by Kijani’s Airtable database system. It is not critical for analysis and will be deleted from the shared data with the VVB.

“2022” represents trees planted in the year 2022. “2023” represents new gardens that were planted in 2023. The structure of the databases is continually being updated, leading to some small changes in column headings. However, standard data of the gardens remain the same, including trees planted, farmer details, and GPS location of the gardens.

Column D was included as an error and is an internal data quality check to ensure that all species are being included in the “total number of trees planted” calculation.

Documentation provided by project participant

expost-ERR_kijani_20240213.xlsx *exante-ERR_kijani_20240213.xlsx*
VVB assessment **Date:** 28/02/2024
CL#16 stands closed based on the review of the calculation sheet checked by VVB.

CL ID	17	**Section no.**		**Date :** 25/01/2024
Description of CL				
Public comment period 1. Did the project considered the non-native tree species impact on the local ecology, further as per the latest VCS standard 4.5, the ARR projects are restricted to plant the non-native tree species, will the PP satisfy this clause in the next PDD update? Also, the PP mentioned that the project will support the goal of "National Development Plan which aims to increase Uganda's forestland to 15% by 2025 (from 1986 to 2020, the forest areas in Uganda went from 20% to 9.5% of the total area)", will this reforestation activities also be double counted under NDCs? 2. Kindly accredit the Kijani project for the benefit of out planet and jobs to the youths of Uganda				
Project participant response				**Date:** 13/02/2024
Most of the species used by Kijani are native or naturalized species. A few of them are non native but prove to be highly adapted to the project's area. In any case, the project does not include monoculture plantations. On the contrary, different species are combined within and between gardens. Anyway, According to VCS standard 4.5: Section 3.19.27(3) does not apply to projects with a start date prior to 1 March 2024, which means that this requirement is not mandatory for Kijani's project as the start date is prior to March 1st, 2024.				
Documentation provided by project participant				
VVB assessment				**Date:** 19/02/2024
CL#17 stands closed as PP has addressed the public comment section 2.4 of the PDMR.				

Table 3. CAR from this validation

CAR ID	01	**Section no.**		**Date:** 09/11/2023
Description of CAR				
PDMR section 1.4 The project details in section 1.4 lacks the justification as how the project is complying with each and every requirement of VCS Standard v4.5 section 2.1, 3.1 and 3.2.				
Project participant response				**Date:** 13/02/2024
The project has followed every VCS requirement. Many of the applicability conditions and requirements in sections 2.1, 3.1 and 3.2 are not applicable to the project activity and the rest of them have been followed and demonstrated through the entire PD.				
Documentation provided by project participant				
VVB assessment				**Date:** 19/02/2024
CAR#01 stands closed as PP has provided the required information in the updated PDMR.				

CAR ID	02	**Section no.**		**Date :** 09/11/2023
Description of CAR				

PDMR section 1.8 The start date of the project is identified as 01/01/2022. However, the section lacks the explanation as the project identifies the start date and how is it valid as per the VCS standard v4.5 section 3.8 which states "the project start date of an AFOLU project is the date on which activities that lead to the generation of 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)." The PDMR template guidelines requires PP to justify "Indicate, and provide justification for, the project start date, specifying the day, month and year." The project start date, monitoring period and start date of crediting period is not clear. The start date of project is 06/01/2024 in the revised PD. Monitoring period and crediting period starting date is different 01/03/2020 and 06/01/2022 respectively.
Project participant response **Date :** 13/02/2024
Project start date in PDD to be updated to August 22nd 2022 which is the earliest evidence date for plantation. Photos of the trees in the ground. The earliest photo Kijani have in the gardens are August 22nd, 2022. These are photos with the time and GPS tagged.
Documentation provided by project participant
CAR 02 Screenshot 2024-02-13 at 3.50.27 PM.png *CAR 02 Screenshot 2024-02-13 at 3.50.54 PM.png*
VVB assessment **Date:** 19/02/2024
Please refer comment added in the PDMR section 1.8.
Project participant response **Date :** 21/02/2024
Evidence was added to section 1.8 of the PDMR
Documentation provided by project participant
VVB assessment **Date:** 28/02/2024
CAR#02 stands closed based on the review of the section 1.8 of PDMR corrections.

CAR ID	03	**Section no.**		**Date :** 09/11/2023
Description of CAR				
PDMR Section 1.17 The project targets SDG 1, 2, 4, 5, 6, 8, 13, 15 and 17. However no supportive evidence were provided for each of the SDG claimed. The table of the SDG only presents the information for SDG 8 and 15 while PP has described more SDG in this section. Explain the inconsistencies in this information. Further, the achieved contributions in this first monitoring period need to be clearly demonstrated and justified. For instance, it is stated for SDG 8 that Kijani has trained and hired over 440 full time employees while giving income-generating opportunities to over 20,000 households. However, no evidence was presented to confirm the same.				
Project participant response				**Date :** 07/12/2023
Section 1.17 improved with evidence				
Documentation provided by project participant				
Farmer Income Projections.xlsx Staff List - Nov 6 2023.xlsx				
VVB assessment				**Date:** 19/02/2024
CAR#03 stands closed as the corrections have been made in the PDMR in sections 1.17.1 and 1.17.2.				

CAR ID	04	Section no.		Date : 09/11/2023
Description of CAR				
Non-Permanence Risk report PP is required to complete the NPR report and include all risk factors and then justify each risk factor. The current version of NPRR lacks the risk rating and justification of all risks required to consider as per VCS NPR tool and NPR template. Template requirement says “Document and substantiate the risk and/or mitigation for each risk factor applicable to the project. Include any relevant documentary evidence. Where a risk or mitigation is not relevant to the project, please write “Not applicable”. The latest and applicable version of non-permanence risk tool is version 4.2 and PP is required to upload the non-permanence risk rating on VERRA project Hub. Please confirm whether the NPR of this project is prepared as per the latest version of NPR tool. Also, share the VCS Risk report calculation tool excel sheet prepared on latest version of template which is version 4.2 for assessment.				
Project participant response				**Date :** 13/02/2024
The NPR has been updated in Verra´s project Hub. There have been some modifications to risks but the supporting information is provided..				
Documentation provided by project participant				
CAR 04 Forest management plan. NH carbon project *CAR 04 Farmer Income Projections.xlsx* *CAR 04 KF Nursery Hub Carbon Model.xlsx* *CAR 04 KF Nursery Hub Charcoal Model*				
VVB assessment				**Date:** 19/02/2024
CAR#04 stands closed based on the review of the revisions made in the NPR documents.				

CAR ID	05	Section No.		Date : 25/01/2024
Description of CAR				
Site visit observations 1. The updated project database excel sheet is requested with the following details. It was observed during the site visit that there are gardens of farmers in which plots have been established based on the species planted and year wise data. Details of (a) establishment of plots in the garden (b) year wise documentation of plots (c) unique ID of farmers (d) no. of species planted in each plot (e) no. of plots for each farmer (f) plantation model (g) long term average calculations of timber and charcoal plantation. 2. Monitoring plan The monitoring plan provided in the PDMR requires clarification of which approved manual is used for plot measurements and spacing between species added in the project. Also, the trainings schedule and topics need to be provided. There have been different roles and responsibilities identified from data collection to analysis procedures and involvement of village people. Parish coordinator (PC), district coordinator (DC), AC, LC, cultural head, village head and secretary, VSLA. Please provide roles and responsibilities of each personnel. 3. Local nurseries – There have been many local nurseries established by farmers or local people and run the nurseries and continue for plantation in their gardens. However, more information is required to understand how these nurseries are established, how sufficiency has been established to ensure plantation numbers and how the seeds are selected to ensure the maximum germination rate. More information is required in the PDMR. The transportation of seed or seedlings, their survival rate. 4. ERR calculation sheet The baseline, project and leakage emissions of the project is not clear. The calculations require clarification of including the area of each plot, parameters, practices, or models adopted in each garden, species planted, harvesting schedule, soil type (for SOC), and inclusion of calculations of deadwood, litter carbon pools. Further, the calculations of long-term harvesting (timber and charcoal) and buffer credit calculations.				

Furthermore, the period of monitoring period and crediting period is not clearly provided in the ERR sheet. The calculation of estimated ERRs for the validation and achieved ERRs for the verification period are also not clear and traceable.

5. It is not clear how the species in each farmer's garden is selected. Clarification is requested on how the species are selected. Is there any feasibility study conducted to ensure the species planted identified is complete or justified?
6. KML file
The demarcation of each plot inside the garden is not clear for each farmer. PP is requested to share the revised KML file.

Project participant response	**Date :** 13/02/2024

1. The complete database is provided
2. The Monitoring Plan has been corrected in the PD
3. Nursery Hub Model
4. Many comments have been made to the exante and expost calculations
5. Species are selected by the farmers based on the available species provided by Kijani which have been previously selected based on ecology and growth rates
6. Revised KML are shared

Documentation provided by project participant

VVB assessment	**Date:** 19/02/2024

1. Project database is reviewed. Comment stands closed.
2. Monitoring plan is updated in the revised PDMR. Comment stands closed.
3. PP has provided sufficient details in Forest management plan and nursery hub carbon model document. Comment stands closed.
4. baseline, project and leakage emissions calculations are clearly provided now. Comment stands closed.
5. Section where the species selection is mentioned needs to be reported here.
6. Revised KML has been checked and following issues have been found and are requested for correction. There is presence of non-eligible areas within the project activity area, inaccurate delineation of fields, and internal overlaps of fields. VVB has provided a few of the screenshots of the inconsistencies found in the KML file. It is important to note that the screenshots do not encompass the exhaustive list of the aforementioned issues.

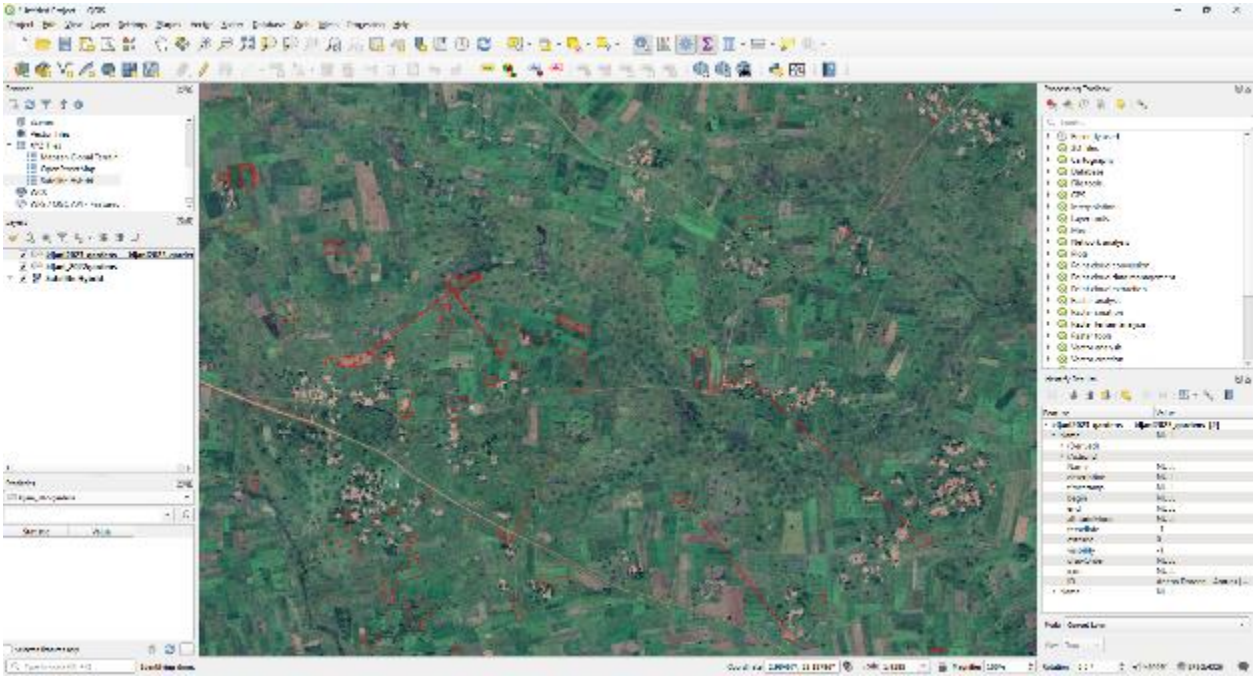


Figure 1 Inaccurate delineation & internal overlaps of garden.

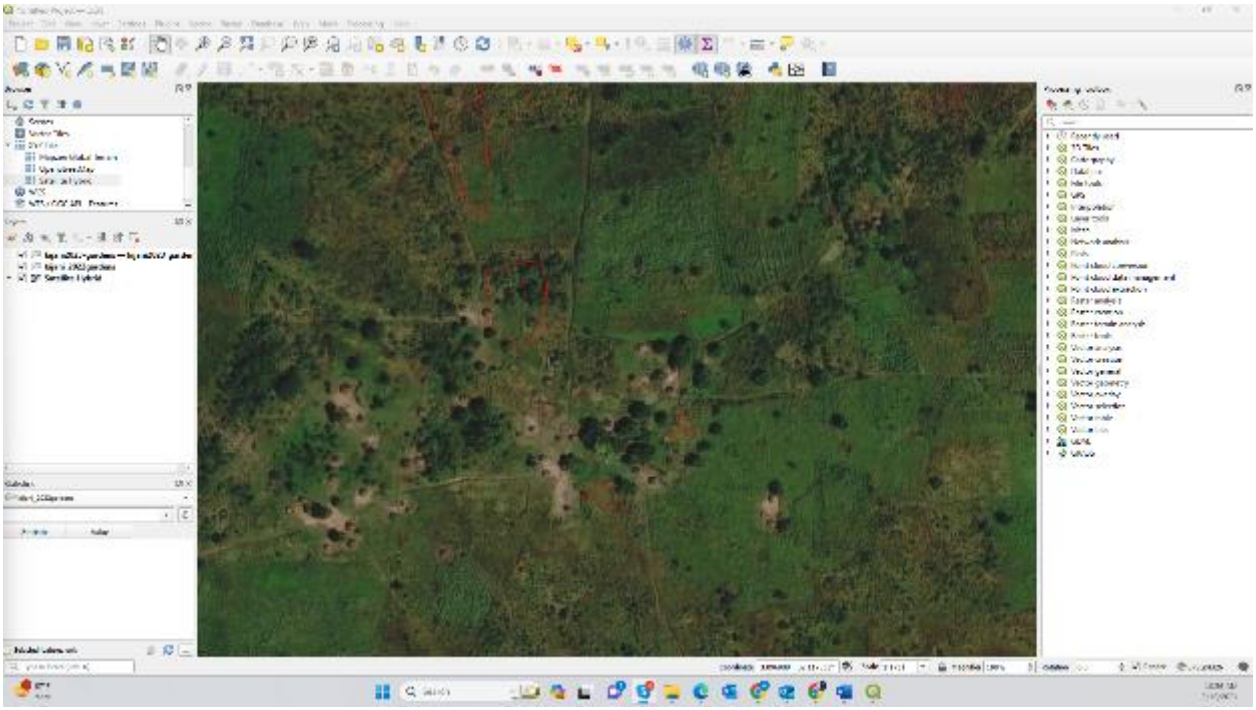


Figure 2 Inaccurate delineation of garden

Please refer to the following requirements of the VCS standard version 4.5 and specifically AFLOU Requirement 3.11.2 and share the corrected KML file.

Project participant response	**Date :** 2/22/2024

New KML for 2022 Gardens has been provided in the "2022 KML - Feb 22nd.geojson" file. KMLs have been modified and cleaned up for all 2022 gardens to address the issues in the AFOLU 3.11.2. Project database uploaded with the 2022 Gardens and then the 2022 Forest Inventory plots. "

Species selection excerpt:

"Kijani's planting efforts are focused on planting primarily indigenous and a small proportion of nativized, non-indigenous tree species on degraded land, which helps to restore soil fertility, prevent soil erosion, and promote biodiversity. By planting trees, Kijani aims to sequester carbon and mitigate the impacts of climate change by partnering with the people who are most affected by it.

Kijani places careful consideration on species selection, only planting species that have no known negative impacts on the local environment and have multiple benefits for the smallholder farmers. Kijani consults with the local and national government before considering any species and does not introduce any new and exotic species into the Ugandan ecosystem. Kijani only plants species that are promoted by the National Forest Authority and receives local buy-in from each districts District Forest Officer to ensure there is no net harm. Each of the local District Forest Officers (DFOs) are involved in the inception meetings when Kijani introduces the program and outlines the tree species we will plant with the farmers. They are involved and advise in the process and have not required any additional reports or otherwise since the species are known in their areas and are promoted by the national government. Kijani's criteria for selection of species depends on the use for each tree. Trees that are planted for fuelwood usage are required to grow quickly, coppice after harvesting, and produce quality charcoal, timber species must have a marketable product for the farmer once mature and are either native or nativized. Kijani does not promote the planting of Pine or Eucalyptus trees.

Before Kijani makes a species available for farmers, the species is first tested at their farm and with a select group of farmers in different regions. If a species does not survive well, has slow growth rates, or is not desired by enough farmers, the species will not be added to the

species list. In the case where there is success of the species in the pilot, then the species may be made available to a wider subset of farmers, still taking into account each individual ecological zone the farmers will be planting in. Species are added to Kijani's selection all the time as the geographical area continues to expand and new species are tested, but currently the most common species include *Melia volkensii*, *Senegalia polyacantha*, *Maesopsis eminii, Gmelina arborea, Terminalia glaucensis,* and a variety of indigenous acacia species. Smallholder farmers possess a huge amount of land in Uganda, and collectively represent enormous potential to combat deforestation and drawdown carbon. The only requirement for a smallholder farmer to participate in Kijani's program is a willingness to learn and owning land for them to legally plant trees on. No cash investment is needed, and all technical training and inputs are provided by Kijani.
Documentation provided by project participant
2022 KML - Feb 22nd.geojson 2022 Garden Database Export.xlsx
VVB assessment **Date:** 28/02/2024
Submitted KML now has correct demarcation of files. All issues are resolved and CAR#05 stands closed.

CAR ID	06	**Section No.**		**Date :** 28/02/2024
Description of CAR				
TR comments Excel sheet "exante-ERR_Kijani_20240222" > worksheet "Growth-rates" In the row 4, PP has provided the input "research" under data type. Please provide complete source either link of the research paper or complete reference of the research paper in the ER sheet and PDMR. Also, confirm how did the calculation of the growth rate after 6th Year have been carried out? Excel sheet "exante-ERR_Kijani_20240222" > worksheet "Biomass" In the row 9, please add unit of total biomass values Excel sheet "expost-ERR_Kijani_2024022" > worksheet "Gral-Eq" There are many cells highlighted in yellow color, please check and provide the value and establish the cell linking to check the calculations. Ex-ante and ex-post ERR calculations sheet The average and total values of estimated ERR for the entire crediting period, achieved ERRs for the first verification period, buffer credits needs to be clearly presented in the submitted ER calculation sheets. Please check and present the complete information in the calculation sheet. PDMR section 5. Section 5.1 Baseline emissions, 5.2 project emissions, 5.3 leakage, and 5.4 estimated net GHG ERRs needs to be updated with the details of calculation approach followed for the calculation of estimated ERRs and achieved ERRs for the first monitoring period. PDMR section 1.8 In this section, please provide explanation for the identification of the start date following the requirements of VCS Standard start date and justify in the PD. PDMR section 2.2 Some of the photographs are not showing in this section. Please check.				
Project participant response				**Date :** 28/02/2024
Comments with the answers have been linked to each observation above.				
Documentation provided by project participant				
exante-ERR_kijani_20240222 (1).xlsx *expost-ERR_kijani_20240222 (1).xlsx*				

exante-ERR_kijani_20240228v2.xlsx *expost-ERR_kijani_20240228v2.xlsx* *VCS PDMR 4475_22022024_v2_clean.doc*
VVB assessment **Date:** 28/02/2024
VVB has checked the revied ERR calculation sheet and updated PDMR. It is confirmed that all the issues have been resolved. CAR#06 stands closed.

CAR ID	07	**Section no.**		**Date :** 07/10/2024
Description of CAR				
PP is to refer the following issues in PDMR, NPR KML file and address accordingly. 1. PP is to share updated KML file. The project area in the PD/MR doesn't align with the project area polygons in the KML file. The KML file does not include sufficient information, e.g., the name of the project area or compartment number. 2. Under Section 1.3 of the PD/MR, no evidence has been provided to demonstrate that the project area was not cleared of existing natural, non-degraded ecosystems due to the project activity. Similarly, no evidence has been provided to demonstrate that the area has not been drained due to project activity. Criteria (2) and (3) from section 3.6.16 of the VCS Standard v4.5 are still not included in the grouped project eligibility criteria. 3. The project boundary does not align with the applied methodology. The baseline emissions and sources have been excluded from the project boundary, i.e., the table format does not match the template and the CO2 pool in burning from woody biomass is incorrect. 4. PP is to clarify the baseline scenario and application of CDM Tool 02. The PP has not provided sufficient documented evidence to support the identified barriers. Accordingly, step 2b in Section 3.4 of the PD/MR remains incomplete. 5. The project has not calculated the ex-ante buffer contributions determined by the project. It has been identified that the ex -ante buffer contributions have not been accounted for on an annual basis, as required by the template. It is unclear why the SOC is zero from 2051 to 2061. 6. The PP is to share updated NPR documents to provide justifications for the risk rating/score applied.				
Project participant response				**Date :** 11/10/2024
1. Kml is provided, the identification of each project area is detailed in attribute “Farmer-C” of the kml 2. To ensure no native ecosystems were degraded because of the project activities, the project area was analysed using different land cover layers and satellite earth observation. As a result of this analysis, 31 farms were excluded from the project. Figure 5 of the PDD (chapter 1.13) shows the different outcomes of the analysis for 2022 gardens. Those ones under wetland or forest cover were excluded from the project. Additional information on project eligibility and evidence of non-destruction of native ecosystems has been added to section 1.3. The analysis has been deepened since the submission of the project to Verra and is has led to the exclusion of 4.32 ha from the project. Before onboarding new farmers, Kijani ensures that the project does not cause the destruction of any existing natural, non-degraded ecosystems. However, even though there has been no deforestation due to the project activity, some of the areas were found to have native forest 10 years ago. *1)* Criteria 2 and 3 were now included as part of the eligibility criteria in the PD				

3. This has already been addressed and updated as part of our answers in the previous round of findings from Verra.
4. More evidence on the identified barriers has been added to the PDMR. Further evidence and analysis has been included in substep 2b
5. Ex-ante calculations were corrected, SOC is now considered up to 2061. SOC has been recalculated for each type of soil/climate region until 2061. Ex-ante estimations have been corrected. Ex-ante buffer contributions were included in chapter 5.4.
6. Issues a-d are addressed below:
   a. Adaptive management plan has been already included in PD/MR
   b. None of the mitigation categories apply to the project and none have been selected in the project hub, that is why it remains in zero.
   c. The land in which the project is being developed is owned by the farmers. Most of the land is customary right: "Customary land is the case with the tens of thousands of plots Kijani's Nursery Hubs operate. Amone and Lakwo state "In northern Uganda, land has been owned communally right from the time the Acholi settled in." The Acholi clans would then subdivide the land to the male family heads, who would then continue to subdivide the land to their children, most commonly the men of the family. The patriarch of the family would be the member responsible for the further subdivision of the land to children. The children would have access to work on the patriarch's land throughout their lifetimes. And at the point where the men would get married, they would be provided a land that is theirs to develop, build their homes, cultivate, and have ownership into the future. Trees would be planted to demarcate the boundaries. When they would have children, they could apportion part of the land to their children, and the pattern would continue thereafter.

   2) The children reserve the right to perform activities on the land as they wish, as they own the land after it is apportioned to them. In order to ensure the farmers have the legal rights to their land, Kijani engage with the traditional and governmental leaders in the area. There are two roles who are able to speak to the question of land ownership in these rural communities – the Local Councilperson 1 (LC1) and the Rwot Kweri or Adwong Wang Tic. Any issue involving land ownership would involve these two leaders in the communities. Further detail is provided in section 1.7 of the PD

   d. The company provides the chance for each farmer to voice their opinions and concerns through weekly meetings that are attended by each PC and do their best to create a simple and accommodating model that rewards farmers throughout many regions for their hard work. Kijani also explains the benefits and risks associated with tree planting and the carbon credit profit share model. In the information gathering sessions, Kijani has held meetings with dozens of community members and discussed their desires for the carbon credit revenue share, including frequency of distributions, methods of rewarding, simplicity in deal structure, and whether cash or other non-monetary methods of support are most effective.

   3)

Documentation provided by project participant	
VVB assessment	**Date:** 23/10/2024

1. The KML is pending to be received for PRR round 2. PP is to confirm and share the KML file for VVB assessment as well as submission to VERRA. While sending the updated KML file, PP is to ensure that the KML file include sufficient information, e.g., the name of the project area or compartment number. Comment stands open.
2. PP is to share the sufficient and appropriate evidence as per the response provided – "to ensure no native ecosystems were degraded because of the project activities, the project area was analysed using different land cover layers and satellite earth observation. As a result of this analysis, 31 farms were excluded from the project." Comment stands open.
3. Comment is closed as section 3.3 found to be completed as per PD template.
4. Updates made in step 2b in Section 3.4 of the PD/MR has been reviewed and found complete. Comment stands closed.
5. The audit team reviewed the revised Emission Reduction (ERR) calculation sheet and confirmed that the project proponents (PP) have accounted for soil organic carbon (SOC) projections through 2061. SOC has been recalculated for each soil and climate region up to that year, and the ex-ante estimations have been corrected accordingly. Additionally, the ex-ante buffer contributions have been incorporated into Chapter 5.4 of the report. The Finding is closed now
6. Updated NPR documents have not been shared with this audit findings document. VVB had received Audit finding document, PDMR dated 08102024, and exante-ERR Kijani dated 09102024. However, NPR document had not been received. Comment stands open.

CAR#01 stands open.

Project participant response	**Date :** 25/10/2024

1. Kml is shared now
2. We are providing the VVB a sample of satellite images for some of the gardens which were excluded in order to show how the non-eligible gardens looked like more than 10 years ago.
5. For the calculation of Soil Organic Carbon, some of the parameters have been updated to ensure a more conservative approach. In this regard, for SOC ref values, the default values given by the methodological tool have been replaced by the values obtained from the Global Soil Organic Map developed by FAO. Additionally, the factors for land use (fLU) and management (fMG) were adjusted to better reflect the actual conditions in the project area. This explanation is included in the PD and further detail on these modifications as well as procedures followed to update the calculations are provided in the document "Updated Soil Carbon and Assumptions.pdf". Exante and expost ERR have been updated accordingly.
6. NPRR was updated and submitted. A copy of the report, attachments and notes is also provided to VVB

Documentation provided by project participant

VCS PDMR 4475_23102024.docx

exante-ERR_kijani_20241025.xlsx

expost-ERR_kijani_20241022.xlsx

Updated Soil Carbon and Assumptions.pdf

2022_gardens-info.kml

Captura de pantalla 2024-10-23 101115.png

Captura de pantalla 2024-10-23 101231.png

Captura de pantalla 2024-10-23 101342.png

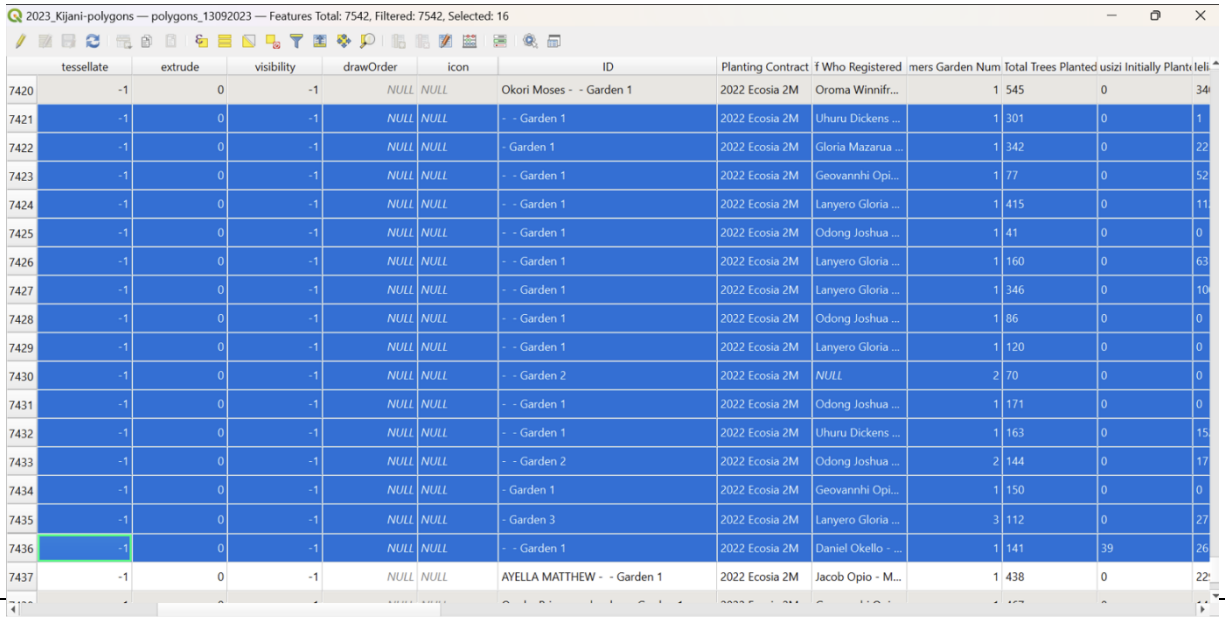
VVB assessment	**Date:** 28/10/2024

1.(a)As per the provided the *2022_gardens-info.kml* file by the PP, on assessment it was found that the area of 138.715 hectares and 790 gardens for the year 2022 is correct and consistent with what has been claimed in the newly updated PDMR by the PP. However, the PP is requested to provide the Project Boundary KML File for further analysis as there is no KML File provided where the Project Boundary has been exclusively demarcated as Evidence.

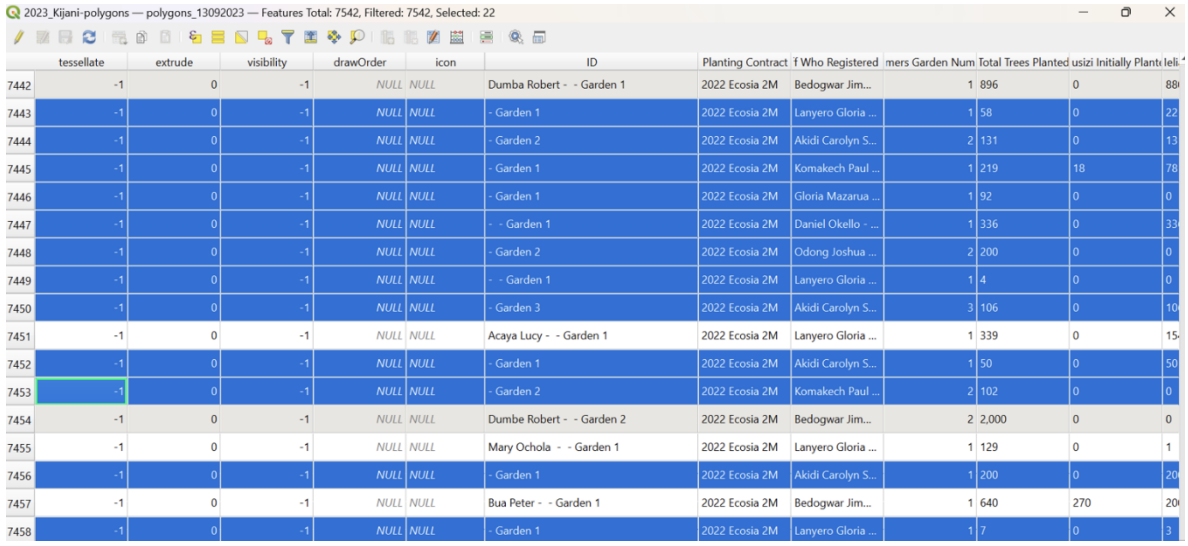
(b)The *Kijani Database* 2022-23 Excel file contains missing information of either District or Sub-County for some farmers, which are, however, filled in the attribute table of the 2022_gardens-info.kml file that has been provided by the PP. The PP is requested to fill in these missing entries to maintain a sense of consistency for conduction of database matching and analysis by the VVB.

(c) The *Kijani Database* 2022-23 Excel file also contains missing information regarding the GPS Polygon, PS Garden Center Coordinates, GPS Garden Center Latitude and GPS Garden Center Longitude values respectively starting Ocen Moris-Agago ID. The PP is requested to fill the same as it is a crucial step for cross-checking the claims made by the PP.

(d)The 2023_Kijani-Polygons KML File and the *Kijani-database 2022-23* contains ID's without a name, just mentioning Garden 1,2 and 3 without mentioning the name, unlike other ID's which also include the name along with the Garden Number in the column name ID. Below are the screenshots of the same. The PP is requested to correct the same in both the KML File as well as the provided Excel File.

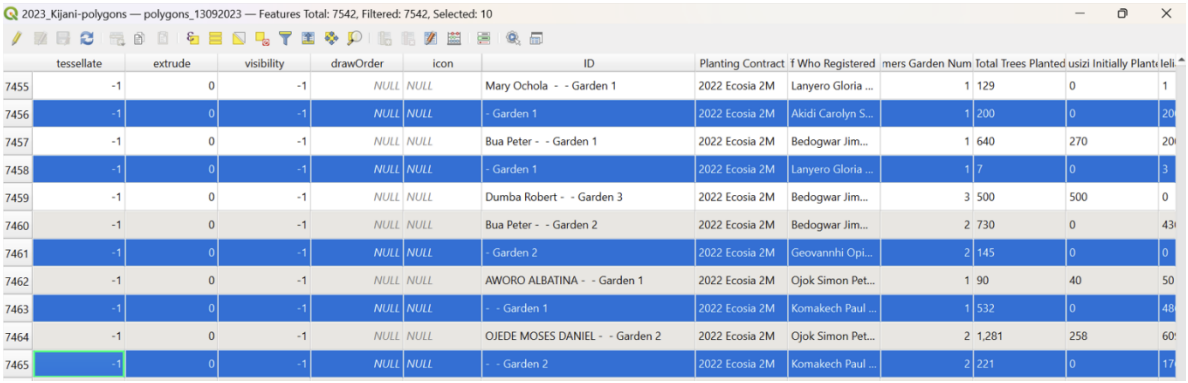


	tessellate	extrude	visibility	drawOrder	icon	ID	Planting Contract	f Who Registered	mers Garden Num	Total Trees Planted	usizi Initially Plant	leli
7420	-1	0	-1	NULL	NULL	Okori Moses - - Garden 1	2022 Ecosia 2M	Oroma Winnifr...	1	545	0	34
7421	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Uhuru Dickens ...	1	301	0	1
7422	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Gloria Mazarua ...	1	342	0	22
7423	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Geovannhi Opi...	1	77	0	52
7424	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	415	0	11
7425	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Odong Joshua ...	1	41	0	0
7426	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	160	0	63
7427	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	346	0	10
7428	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Odong Joshua ...	1	86	0	0
7429	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	120	0	0
7430	-1	0	-1	NULL	NULL	- - Garden 2	2022 Ecosia 2M	NULL	2	70	0	0
7431	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Odong Joshua ...	1	171	0	0
7432	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Uhuru Dickens ...	1	163	0	15
7433	-1	0	-1	NULL	NULL	- - Garden 2	2022 Ecosia 2M	Odong Joshua ...	2	144	0	17
7434	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Geovannhi Opi...	1	150	0	0
7435	-1	0	-1	NULL	NULL	- Garden 3	2022 Ecosia 2M	Lanyero Gloria ...	3	112	0	27
7436	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Daniel Okello - ...	1	141	39	26
7437	-1	0	-1	NULL	NULL	AYELLA MATTHEW - - Garden 1	2022 Ecosia 2M	Jacob Opio - M...	1	438	0	22



2023_Kijani-polygons — polygons_13092023 — Features Total: 7542, Filtered: 7542, Selected: 22

	tessellate	extrude	visibility	drawOrder	icon	ID	Planting Contract	f Who Registered	mers Garden Num	Total Trees Planted	usizi Initially Plant	leli.
7442	-1	0	-1	NULL	NULL	Dumba Robert - - Garden 1	2022 Ecosia 2M	Bedogwar Jim...	1	896	0	88
7443	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	58	0	22
7444	-1	0	-1	NULL	NULL	- Garden 2	2022 Ecosia 2M	Akidi Carolyn S...	2	131	0	13
7445	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Komakech Paul ...	1	219	18	78
7446	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Gloria Mazarua ...	1	92	0	0
7447	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Daniel Okello - ...	1	336	0	33
7448	-1	0	-1	NULL	NULL	- Garden 2	2022 Ecosia 2M	Odong Joshua ...	2	200	0	0
7449	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	4	0	0
7450	-1	0	-1	NULL	NULL	- Garden 3	2022 Ecosia 2M	Akidi Carolyn S...	3	106	0	10
7451	-1	0	-1	NULL	NULL	Acaya Lucy - - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	339	0	15
7452	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Akidi Carolyn S...	1	50	0	50
7453	-1	0	-1	NULL	NULL	- Garden 2	2022 Ecosia 2M	Komakech Paul ...	2	102	0	0
7454	-1	0	-1	NULL	NULL	Dumbe Robert - - Garden 2	2022 Ecosia 2M	Bedogwar Jim...	2	2,000	0	0
7455	-1	0	-1	NULL	NULL	Mary Ochola - - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	129	0	1
7456	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Akidi Carolyn S...	1	200	0	20
7457	-1	0	-1	NULL	NULL	Bua Peter - - Garden 1	2022 Ecosia 2M	Bedogwar Jim...	1	640	270	20
7458	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	7	0	3



2023_Kijani-polygons — polygons_13092023 — Features Total: 7542, Filtered: 7542, Selected: 10

	tessellate	extrude	visibility	drawOrder	icon	ID	Planting Contract	f Who Registered	mers Garden Num	Total Trees Planted	usizi Initially Plant	leli.
7455	-1	0	-1	NULL	NULL	Mary Ochola - - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	129	0	1
7456	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Akidi Carolyn S...	1	200	0	20
7457	-1	0	-1	NULL	NULL	Bua Peter - - Garden 1	2022 Ecosia 2M	Bedogwar Jim...	1	640	270	20
7458	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	7	0	3
7459	-1	0	-1	NULL	NULL	Dumba Robert - - Garden 3	2022 Ecosia 2M	Bedogwar Jim...	3	500	500	0
7460	-1	0	-1	NULL	NULL	Bua Peter - - Garden 2	2022 Ecosia 2M	Bedogwar Jim...	2	730	0	43
7461	-1	0	-1	NULL	NULL	- Garden 2	2022 Ecosia 2M	Geovannhi Opi...	2	145	0	0
7462	-1	0	-1	NULL	NULL	AWORO ALBATINA - - Garden 1	2022 Ecosia 2M	Ojok Simon Pet...	1	90	40	50
7463	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Komakech Paul ...	1	532	0	48
7464	-1	0	-1	NULL	NULL	OJEDE MOSES DANIEL - - Garden 2	2022 Ecosia 2M	Ojok Simon Pet...	2	1,281	258	60
7465	-1	0	-1	NULL	NULL	- - Garden 2	2022 Ecosia 2M	Komakech Paul ...	2	221	0	17

2.The PP is requested to send Raster Based Satellite Images for Degradation Analysis. LULC Maps 10 years prior to the Project Start Date are Required and LULC Maps at the Start of the Project Date are required.

5. PP is explain whether the revision have been made after the VVB assessment. The finding was closed initially based on the submitted ERR spreadsheet in the first round, however, as indicated in the PP's response, updated ERR spreadsheet are required to be submitted.

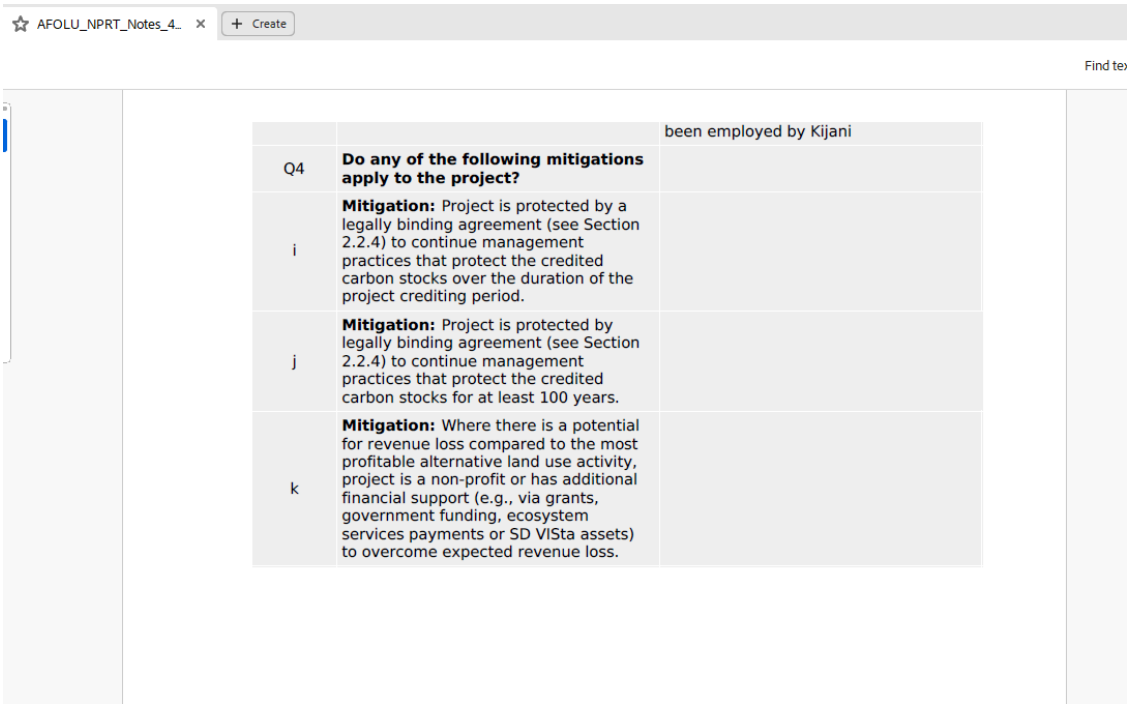
6. The NPR report and NPR notes shared for the assessment is not updated with the risk rating justification.

6 (a). Opportunity cost (i-k) and project longevity (Q7, a): A mitigation score of zero was assigned but it is unclear why zero has been assigned to each mitigation category; this contradicts with the project longevity. Given the project is not protected by a legally binding commitment to continue the management practices that protect the credited carbon stocks over at least 100 years (as indicated by the Q7, a).

Please refer to below screenshot which does not provide justification or reasoning for keeping mitigation score 0 in the NPR report.

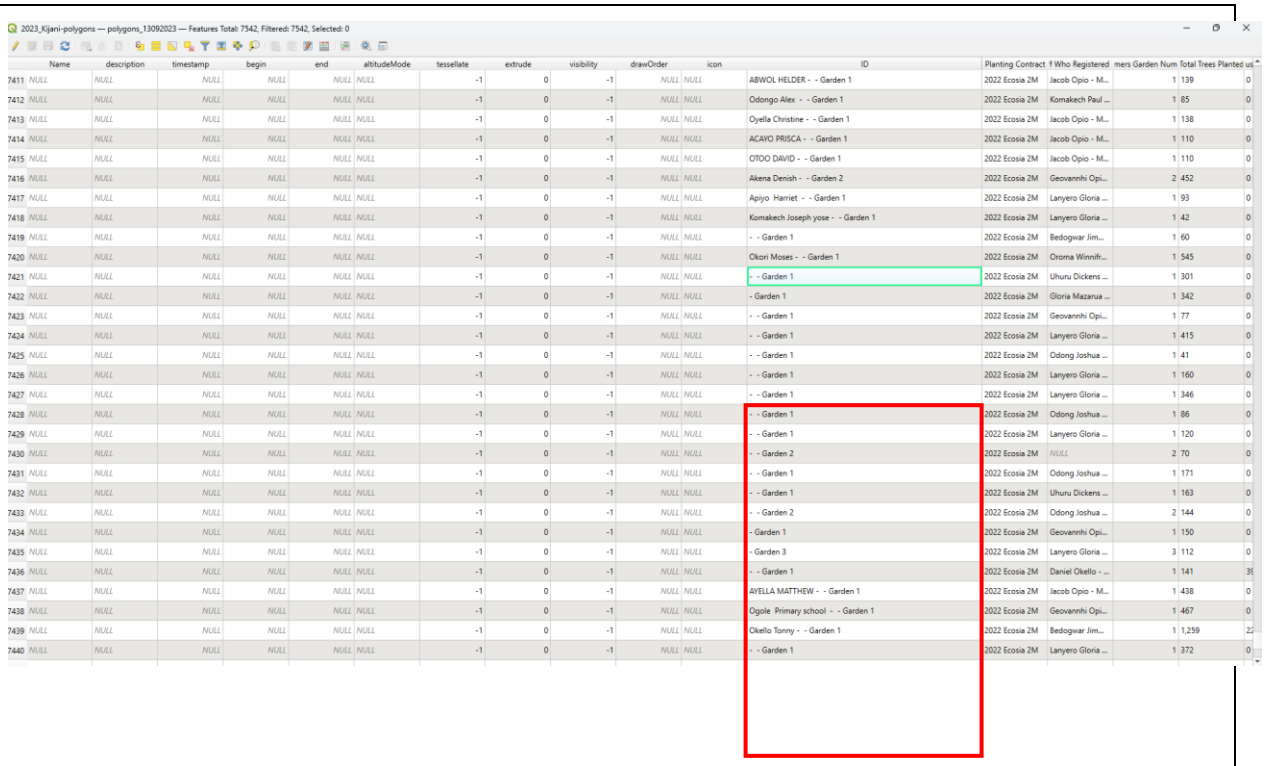
6(b) Land Tenure and Resource Access/Impacts: Ownership and resource access or use rights are held by the same entity(ies), but this does not align with the information provided in Section 1.7 of the PD/MR. Further, the NPRR indicates there are no disputes but there is no solid evidence in the reports to support this.

6(c) Also, stakeholder engagement: Q3, d is selected but no evidence provided in the PD/MR to further support this, especially since the stakeholders have not been identified across the 5 districts in the PD/MR.



		been employed by Kijani
Q4	**Do any of the following mitigations apply to the project?**	
i	**Mitigation:** Project is protected by a legally binding agreement (see Section 2.2.4) to continue management practices that protect the credited carbon stocks over the duration of the project crediting period.	
j	**Mitigation:** Project is protected by legally binding agreement (see Section 2.2.4) to continue management practices that protect the credited carbon stocks for at least 100 years.	
k	**Mitigation:** Where there is a potential for revenue loss compared to the most profitable alternative land use activity, project is a non-profit or has additional financial support (e.g., via grants, government funding, ecosystem services payments or SD VISta assets) to overcome expected revenue loss.	

CAR#07 stands open.
Project participant response **Date :** 01/11/2024
1. *Kml with the project boundary (Uganda) is now provided. Updated spreadsheet for 2023 gardens is provided including complete information for all gardens as well as GPs center coordinates of each polygon.* 2. *FAO land cover and global forest watch layers were used for a first approach to assess land cover 10 years ago. Kijani farms were classified according to the different LC categories. Next, to confirm FAO classification, random sampling of satellite images was conducted for non-forest covers (basically croplands, grasslands). For closed-forest categories, all the farms were assessed using google earth lookback period of satellite images and this resulted in the exclusion of 4.32 ha. Historical satellite images of these gardens are provided as evidence.* 5. *Spreadsheets have been updated on out last submission given some assumptions were updated to reflect better the reality and to ensure more conservative estimations. Refer to spreadsheets and explanatory documents provided in previous round of responses* 6. *Answers have been addressed, NPRR has been updated with the required answers. Chapter 2.2 of the PDD has been updated with some extra information regarding stakeholder consultations.*
Documentation provided by project participant
project-boundaries(uganda).kml *historical-sat-1.jpg* *historical-sat-2.jpg* *historical-sat-3.jpg* *database.xlsx* *AFOLU_NPRT_Notes_4475.docx* *VCS PDMR 4475_30102024.docx* *2023 Group Visits.xlsx* *Farm Radio Transcript.pdf*
VVB assessment **Date:** 04/11/2024
1.Kml of the Project Boundary (Uganda)has been provided by the PP. The PP needs to mention the Spatial Extension (rough estimate) of the Project Boundary of Uganda in the PDMR. The updated spreadsheet for 2023 has been provided by the VVB. The PP has not resolved VVB Finding 1(d) The 2023_Kijani-Polygons KML File and the Kijani-database 2022-23 contains ID's without a name, just mentioning Garden 1,2 and 3 without mentioning the name, unlike other ID's which also include the name along with the Garden Number in the column name ID. Below are the screenshots of the same. The PP is requested to correct the same in both the KML File as well as the provided Excel File. A few of those anomalies observed in the attribute table of the 2023_Kijani-Polygons KML file have been highlighted in Red. The PP must ensure that for all the ID's in the attribute table of this KML File, these kinds of anomalies are addressed.



Name	description	timestamp	begin	end	altitudeMode	tessellate	extrude	visibility	drawOrder	icon	ID	Planting Contract	f Who Registered	mers Garden Num	Total Trees Planted us
7411	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	ABWOL HELDER - - Garden 1	2022 Ecosia 2M	Jacob Opio - M...	1	139	0
7412	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Odongo Alex - - Garden 1	2022 Ecosia 2M	Komakech Paul ...	1	85	0
7413	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Oyella Christine - - Garden 1	2022 Ecosia 2M	Jacob Opio - M...	1	138	0
7414	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	ACAYO PRISCA - - Garden 1	2022 Ecosia 2M	Jacob Opio - M...	1	110	0
7415	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	OTOO DAVID - - Garden 1	2022 Ecosia 2M	Jacob Opio - M...	1	110	0
7416	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Akena Denish - - Garden 2	2022 Ecosia 2M	Geovannhi Opi...	2	452	0
7417	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Apiyo Harriet - - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	93	0
7418	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Komakech Joseph yose - - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	42	0
7419	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Bedogwar Jim...	1	60	0
7420	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Okori Moses - - Garden 1	2022 Ecosia 2M	Oroma Winnifr...	1	545	0
7421	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Uhuru Dickens ...	1	301	0
7422	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Gloria Mazarua ...	1	342	0
7423	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Geovannhi Opi...	1	77	0
7424	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	415	0
7425	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Odong Joshua ...	1	41	0
7426	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	160	0
7427	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	346	0
7428	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Odong Joshua ...	1	86	0
7429	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	120	0
7430	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 2	2022 Ecosia 2M	NULL	2	70	0
7431	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Odong Joshua ...	1	171	0
7432	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Uhuru Dickens ...	1	163	0
7433	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 2	2022 Ecosia 2M	Odong Joshua ...	2	144	0
7434	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- Garden 1	2022 Ecosia 2M	Geovannhi Opi...	1	150	0
7435	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- Garden 3	2022 Ecosia 2M	Lanyero Gloria ...	3	112	0
7436	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Daniel Okello - ...	1	141	3
7437	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	AYELLA MATTHEW - - Garden 1	2022 Ecosia 2M	Jacob Opio - M...	1	438	0
7438	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Ogole Primary school - - Garden 1	2022 Ecosia 2M	Geovannhi Opi...	1	467	0
7439	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	Okello Tonny - - Garden 1	2022 Ecosia 2M	Bedogwar Jim...	1	1,259	2
7440	NULL	NULL	NULL	NULL	NULL	NULL	-1	0	-1	NULL	NULL	- - Garden 1	2022 Ecosia 2M	Lanyero Gloria ...	1	372	0

2.The PP has provided only the JPG Images of the historical data. No LULC Analysis can be carried out with just JPG images. The PP is requested to provide Raster Data for the same. The PP Response 2 needs to be substantiated with physical evidence being provided to the VVB of the FAO land cover and global forest watch layers which were used for assessing land cover 10 years ago. LULC Maps 10 years prior to the Project Start Date are Required and LULC Maps at the Start of the Project Date must be provided by the PP.

5. The ERR spreadsheet is under assessment.

6. Comment on NPR is closed as the risk rating justification provided in the NPR document is acceptable.

Project participant response	**Date :** 05/11/2024

1.Uganda has 241,550 sq.km according to World Bank information (https://datos.bancomundial.org/indicador/AG.SRF.TOTL.K2?locations=UG) . This information has been included in PDMR.

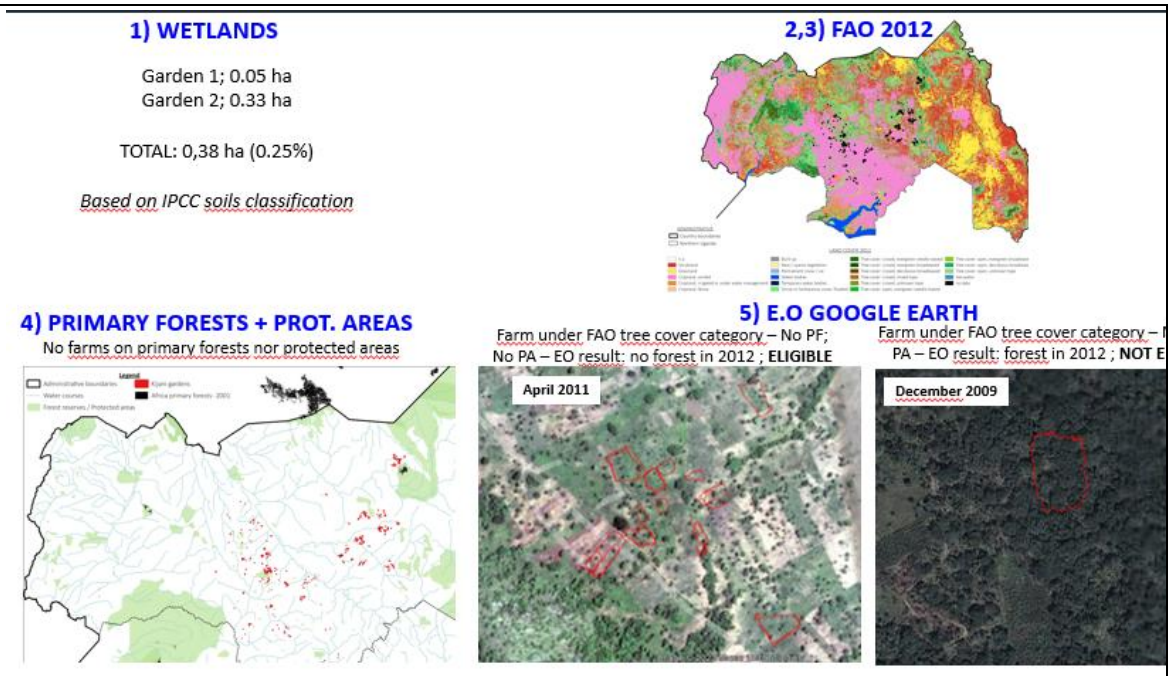
VVB is looking at an outdated database. Please refer to the kml and database provided in last rounds of finidngs.

2.To ensure that new project activities do not impact sensitive ecosystems like wetlands or non-degraded native landscapes, a systematic screening protocol is applied:

- ***IPCC Soil Layer Analysis:*** *The Intergovernmental Panel on Climate Change (IPCC) soil layers are overlain with the project area map. This step helps identify and exclude any project site that falls within wetland zones, preserving these critical ecosystems from any land use changes associated with the project.*
- ***FAO 2012 Land Cover Layer Assessment:*** *To assess previous LULC, the project area is first analyzed against the FAO's 2012 land cover data, allowing for a decade-long retrospective analysis of the land's natural state and historical land use. By referencing this layer, the project team can verify if the area was covered with forest ecosystems or if any significant changes occurred that might affect project eligibility. Since the FAO data has a 100-meter resolution, LULC classifications are further verified using high-resolution satellite imagery. Upon closer inspection, it was found that some areas labeled as forest-covered by the FAO data did not actually contain trees in the satellite images and others did. The ones which were confirmed to have forest cover in 2012 were removed from the project area.*
- ***Primary Forest Layer (Global Forest Watch):*** *Using data from Global Forest Watch, primary forest layers are overlaid with project area boundaries. Primary forests are irreplaceable due to their biodiversity, maturity, and the ecosystem services they provide, and their protection is a core criterion for project approval.*
- ***Earth Observation via Historic Satellite Imagery (2012 or Earlier)****: Satellite imagery from 2012 or before is used to visually confirm that the selected areas have not been recently cleared of native vegetation or disturbed in ways that would make them unsuitable for project activities. This step further validates that project instances do not take place on land that was recently converted from natural ecosystems. Satellite images has been already provided to VVB.*

FAO and GFW layers are provided again to VVB.

The protocol followed to determine that there is no destruction of non-degraded natural ecosystems and the possible outcomes, is provided below:



Documentation provided by project participant	
LULC.zip *VCS PDMR 4475_04112024.docx* *2022_eligibleVCS_04nov2024.kml* *database_04nov2024.xlsx*	
VVB assessment	**Date:** 06/11/2024

1.The PP has provided the Project Boundaries KML File. The area of 138.715 hectares and 790 gardens is correct and consistent with what has been mentioned in the PDMR. The PP has clarified that the updated KML File for the year 2022 is to be assessed and not the 2023 KML File which was sent earlier. The PP has provided accurate and complete information about the gardens as well as the GPs center coordinates of each polygon in the updated Excel Database File sent recently. The area of the Uganda Project Boundary has been added by the PP in the PDMR. As a result, this finding stands closed. *2.This finding stands closed as it was closed as an audit finding response to CL#10 sent by the VVB to the PP on 28/02/2024. The datasets provided for assessment have been deemed credible and the eligibility criteria for land use change in the project area during the specified timeframe have been analyzed to be satisfactorily met. Hence, even for a similar finding of CL#10 raised on 19/02/2024 which was closed on 28/02/2024, this finding raised on 28/10/2024 stands closed now.* 5. The ERR spreadsheet assessment is also completed. Comment stands closed as no further clarification is required. CAR#07 stands closed.

CAR ID	08	**Section no.**		**Date :** 07/10/2024
Description of CAR				
is to refer the following issues in ERR spreadsheet and address accordingly 1. The parameter, BTREE was determined using scientific literature by Swamy, Puri, Singh 2002 focused on the species, Gmelina arborea, but several other species are planted in the project. 2. There is no demonstration of how the allometric equation used for ex-post estimation of the above-ground tree is appropriate according to the requirements specified in AR-TOOL14, v4.2, Appendix 1, Paragraph 7.3.				
Project participant response				**Date :** 11/10/2024
1. Thorough research was conducted to find forest growth models or literature for the species planted by kijani to estimate the forest growth. There is very few scientific information available for the project area. After conducting exhaustive research of information, nothing was found for the project area and species. The document which was used was the best source of information which the PP was able to find to conduct the ex-ante estimations supported by the fact that Gmelina is one of the most planted species by Kijani. No information on forest growth was found available for the rest of the species. Also, Universities and other institutions were consulted about				

this issue, and none of them could give an answer or provide any specific materials. The scientific literature which was finally used (Swamy, Puri, Singh 2002) is peered reviewed and provides reliable information.

2. Following paragraph 7 of Appendix 1 of AR tool 14, the use of the selected allometric equation is appropriate because it complies with at least one of the three conditions established in paragraph 6 of the tool "Demonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activities". Specifically, it complies with (c): "The equation was derived from a data set of at least 30 sample trees, and the value of coefficient of determination (R^2) obtained was not less than 0.85." The selected allometric equation has a sample size of 40 trees and an R^2 of 0.95 and was based on similar conditions as the project area/forests. Also, when assessing National Forest inventory in Uganda, we've seen that it uses the equation derived by Chavez et al., but this equation was found to be not adapted to the project area at this time because it is applicable to trees **above 5cm** and, for this monitoring event, most of the trees of Kijani were still below 5cm. The Mugasha equation can be applied to forest > 1cm.

Documentation provided by project participant

VVB assessment	**Date:** 23/10/2024

1. According to Paragraph 6 of the tool *"Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities"*, an allometric equation is deemed appropriate when it is species-specific or derived for a group of species growing under edapho-climatic conditions similar to those in the project area. This implies that the equation used should be tailored to the specific species, or group of species, present in the project's environment. However, this project involves the planting of several different species. In this case, it is important to explain how the use of a species-specific allometric equation for *Gmelina arborea* alone can adequately estimate the biomass of all planted species. The project proponents (PP) should justify how the requirement for a species-specific or group-of-species-specific allometric equation—derived from trees growing in similar edapho-climatic conditions—is met in this context. Furthermore, if no published literature from the project area is available, the PP should explain why alternative approaches, as outlined in the relevant tools for Ex-post ERR estimation, were not used. A clear justification is required to support this decision. Therefore, the finding remains open.

   4)

2. The PP have demonstrated that the selected allometric equation is based on a sample size of 40 trees, with an R^2 value of 0.95, and was derived from conditions similar to those in the project area. This meets the requirements outlined in Paragraph 6 of the tool *"Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities."* However, upon reviewing the revised Project Design Monitoring Report (PDMR), the audit team found no explanation regarding how the project area (PA) is similar to the location where the allometric equation was developed. Additionally, the PP referenced the 'Mugasha equation,' applicable to forest trees with dbh greater than 1 cm, but this explanation was also missing from the revised PDMR. Therefore, the PP is requested to include these explanations in the appropriate sections of the PDMR. Until these are provided, the finding remains open.

   5)

CAR#08 stands open.

Project participant response	**Date :** 25/10/2024

1. Paragraph 6 refers to ex-post allometric equations. Paragraph 5 refers to ex-ante allometric equation and states that: “for ex-ante estimation of aboveground tree biomass in project scenario any allometric equation can be used”. Apart from that, as it has already been mentioned, no forest growth models were found available for the project area and native species. Unlike widely researched species like Eucalyptus and Pine, for which extensive studies and resources exist, no such data or forest growth models are available for the native species in the project area, including those used by Kijani. For the ex-ante biomass estimations, the team relied on a study specific to Gmelina, a major species used in Kijani’s project, as it was the best available source. In the absence of more precise data, the growth rates from this study were applied universally to all species within the project. Importantly, after conducting the ex-post calculations, it was found that the results showed minimal variance from the ex-ante estimates, indicating that the chosen approach remained relatively consistent and reliable across estimation stages.
2. The equation used for biomass estimation was developed in a location with environmental conditions closely matching those of the project area. Both locations fall within the tropical montane and tropical moist climatic zones, as classified by the IPCC, which helps ensure that growth dynamics and species behaviour are comparable. Additionally, both areas experience a similar annual precipitation level, confirmed through CHIRPS (Climate Hazards Group InfraRed Precipitation with Station data). CHIRPS provides highly detailed precipitation data, compiling 5-day temporal resolution grids to generate annual precipitation analyses spanning from 1981 to the present, lending robust historical accuracy to the precipitation data used in the study. This information has been included to the PD along with supporting maps which have been added to provide a visual representation of climatic comparability

Documentation provided by project participant

VCS PDMR 4475_23102024.docx

VVB assessment	**Date:** 27/10/2024

1. ìDemonstrating appropriateness of allometric equations for estimation of aboveground tree biomass in A/R CDM project activitiesî The project proponent (PP) has provided a well-supported rationale for the appropriateness of the selected allometric equation in ex-post biomass estimation. Firstly, the allometric equation is derived from a sample size of 40 trees and demonstrates a high degree of accuracy with an R^2 value of 0.95, which is strong evidence of its reliability. Additionally, the environmental conditions in the study location and the project area closely align, both falling within tropical montane and tropical moist climatic zones as classified by the IPCC. This similarity suggests that growth patterns and species behavior are comparable across the two areas, supporting the applicability of the equation.
   6) Further, the PP’s reliance on CHIRPS data strengthens the justification by providing detailed precipitation records with a 5-day temporal resolution, enabling precise analysis of historical precipitation patterns from 1981 onward. This data confirms that both areas experience similar annual precipitation levels, thereby ensuring that the environmental conditions used to develop the equation are consistent with those in the project area. This alignment of environmental conditions, sampling rigor, and data precision underscores the suitability of the chosen allometric equation for ex-post biomass estimation in the project.

The audit team agreed with these PP’s explanation, the finding is close now.

CAR ID	09	**Section no.**		**Date :** 08/01/2025

Description of CAR	
1. Evidence to support risk rating of opportunity cost 2. Evidence and justification of risk rating of fire, pests, and disease, extreme weather, geological risk and other natural risks.	
Project participant response	**Date :** 18/02/2025

1 . Opportunity cost:

As it has been stated in the NPR, the baseline activities are subsistence driven. We are now providing additional evidence to clarify the situation of the farmers before the project implementation and the improvement in their living conditions:

According to Kijani's survey before engaging with farmers, the median income reported by the farmers was 1,000,000 UGX/year, which means (in average) 83,333 UGX/month. According to Trading Economic public information, the minimum wage in Uganda are 130,000 UGX/capita/month, and based on the Living Wage Update Report No. 23-04-46 of 2023 (provided), the living wage[1] per month in Uganda for 2023 was UGX 848,837, which is more than 10 times what Kijani's famers receive in the baseline.

As provided in "Farmer Income Projections 2025 – Verra.xlsx" spreadsheet, the projected income for the farmers are expected to grow significantly based on the project activities and by year 40, their incomes are expected to be more than 20 times the baseline (considering baseline incomes + carbon profit share + charcoal income + timber income).

The income projections prove the impacts the project will have on the farmers incomes.

2 . we are working in getting new evidence, but mitigation measures from the Forest Management plan, are provided for eventual fire or pest/diseases outbreaks includes the following:

PESTS/DISESASE:

- **Termites:** Termites can pose a serious threat to young trees in Uganda. Kijani staff receive
  7) training on how to properly site and prepare gardens to minimize termite incursion.
  8) Measures may include:

[1] Definition of a Living Wage: The real objective of the living wage is to ensure that everyone has a decent life, the sort that ensures access to nutritious food, healthy housing, adequate health services, a decent level of education through secondary school for children, and other basic needs of human existence and thus, promote the development of just society. The living wage is a family concept and the idea is that it should not just support a worker, but should support workers and their families at a basic but decent standard of living and also enable them to be productive members and to participate actively in the social and cultural life of their respective societies. (https://www.globallivingwage.org/wp-content/uploads/2020/10/LW-Report_Rural-Uganda_2019-FINAL-corrected-may-2021.pdf)

9) 1. Eliminating plant debris (dead grass, sticks, fallen leaves) around the

10) immediate base (10cm) of each tree.

11) 2. Limited and targeted use of certain approved termiticides.

12) Farmers are taught how to recognize and report termite damage, so that it may be

13) stopped before causing more ham.

14) Staff are also required to report losses due to termites in their regular reports

15) (through the Kijani App) to help the organization keep track and improve its termite

16) control strategy.

- **General best practices**
  - Minimize pruning wounds that expose large areas of wood
  - Prune trees at an early age such that no major branch will be removed later
  - Remove broken branch stubs immediately when they are noticed
  - Have trees in a plantation checked regularly by a forester to ensure infected trees are
  - removed early when they still have sound timber that can be utilized
  - In case of canker selective thinning and pruning should be carried out.
  - In case of leaf spot a fungicide chemical should be used.
  - In case of pests use mechanical (including fencing and removal) and chemical techniques.
- **Species-specific pest management**
- ***Melia spp.***

17) *Melia spp.* trees have few significant pests and diseases in plantations. However, there are reported cases of cankers, mites, and fungal attacks on the main stems. Cases of root rot have also been observed in the field, and they seem to be stimulated by stress conditions (extended periods of drought, infertile soils). While there may be no known remedies to these cases, any cases of pests and diseases should immediately be reported to the nearest forest office. Old trees of 20 years and above are susceptible to the disease which affects heart wood and hence the quality of timber. Unfortunately, there is no economically feasible fungicide to use on a heart rot hosting tree.

- ***Gmelina arborea***

18) Where it is naturalized, Gmelina has few disease problems, although some sporadic cases have

19) been reported. However, the species is susceptible to some certain diseases such as: leaf spot

20) caused by *Colletotrichum gloeosporioide*s; vascular necrosis and chlorosis by Pestalosphaeria

21) elacidis and Khuskia oryzae; heart rot and root rot caused by *Ganoderma spp*.; and stem and branch canker (machete disease) caused by *Ceratocystis fimbriata*; bark disease (worm disease) that can girdle the base of the tree and cause dieback of branches in 2-year-old plantations is spread by *Griphosphaeria gmelinae*.

- ***Maesopsis eminii***
- *M. eminii* can be prone to canker (in Uganda caused by *Fusarium solani*), especially when growing on poor draining soils. Pests can include the cerambycid beetle *Monohammus scabiosus*, which excavates galleries into pole-sized stems, making the stem liable to snap off during high winds.

FIRE

As a requirement for participation in the NH program, farmers are trained and highly encouraged to establish a fire-break around their gardens and are responsible for ensuring that fires do not spread to their farms. Field staff will check farms for firebreaks during periodic visits and provide guidance to farmers when needed. A firebreak is a strip of bare land or vegetation established or created to prevent the spread of fires, usually encroaching from outside of a farm. Firebreaks may be temporary or permanent and consist of fire-resistant vegetation, nonflammable materials, or bare ground. Firebreaks should be located on the contour where practical to minimize the risk of soil erosion.

Regarding extreme weather events and natural risks, the "Disaster Risk Profile" for Uganda - by World Bank Group and Global Facility for Disaster Reduction and Recovery (GFDRR) – says the following:

- DROUGHT: The report states that although Uganda has not been seriously affected by recent droughts, it has had negative impacts on the countries economy and food security. However, according to the Drought Hazard Index map (pg 6), the region in which the project is located has very low index.
- FLOOD: the report states that flood hazards are mostly concentrated in four areas, northwest region along the white nile; South region along the Semiliki River (border with the Democratic Republic of Congo), Central Region and sround the southern laked. The area where the project is located is excluded from this most affected regions (refer to "Flood Prone Areas" map on pg 8)
- LANDSLIDE: according to map and information on pg 10 of the report, the region were the project is located has low hazard index for rainfall-triggered landslides.
- EARTHQUAKE: the major risks are in Western Uganda which is the seismically active region, particularly, since 1900 there have been five earthquakes in the southwest, the last being in 1994 (project area not affected). Siesmic risks decreases in the central and eastern parts of Uganda.

Also, in reference to Landslide risks, the research *APPLICATION OF GEOSPATIAL TOOLS FOR LANDSLIDE HAZARD ASSESSMENT FOR UGANDA (Musinguzi, M. and Asiimwe, I. South African Journal of Geomatics, Vol. 3, No. 3, November 2014)* concludes that "the most susceptible areas are located in Eastern Uganda, south-western Uganda, western Uganda, and to a less extent, the north eastern part of the Country. The less or no risk areas are located in the central, north and north-western parts of the country". Refer to figure 2 of the report.

Documentation provided by project participant	
Disaster-Risk-Profile-Uganda.pdf *Application_of_geospatial_tools_for_landslide_haza.pdf* *Update-report_Uganda_Rural-LakeVictoriaBasin_2023_JUNE.pdf* *Farmer Income Projections 2025 – Verra.xlsx*	
VVB assessment	**Date:** 26/02/2025
PP has provided: 1. Evidence supporting the risk rating of opportunity cost. 2. Justification and supporting evidence for the risk ratings of fire, pests, disease, extreme weather, geological risks, and other natural hazards. The audit team has reviewed the evidence and confirms that the finding is now closed.	

CAR ID	10	Section no.		Date : 08/01/2025
Description of CAR				
It is unclear how the selected allometric equation for species other than Gmelina arborea meets the AR-TOOL17, v1 requirements, i.e., 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 (see background). PP is to demonstrate how the selected allometric equation for species other than Gmelina arborea meets the AR-TOOL17, v1 requirements, i.e., 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. If this is not the case, the PP must apply an equation that meets the requirements of the tool. <u>Background</u> According to AR-TOOL17, v1, paragraph 6, condition C, which the project claims to meet, must be fulfilled by 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.				
Project participant response				**Date :** 18/02/2025

Estimations have been updated.

Ex-ante ERR for all species except Gmelina have been updated using MYRLIN model (find explicatory document attached)

Ex-post ERR estimations have been updated using Chave et al (2014) equation, in compliance with methodological tool AR-TOOL 17 paragraph 6(a) as this equation was used in Uganda's National Forest Inventory.

Through research was conducted to analyse different species-specific equation which suited our project area and management and satisfied the AR-TOOL 17 requierements, but no suitable equation has been found. This process, investigation, approach and conclusion has been documented in the report "Kijani - selection of allometric equation for expost ERR_v2.pdf" which is provided. For future verifications, the PP will create its own allometric equations to ensure compliance with the methodology and methodological tools.

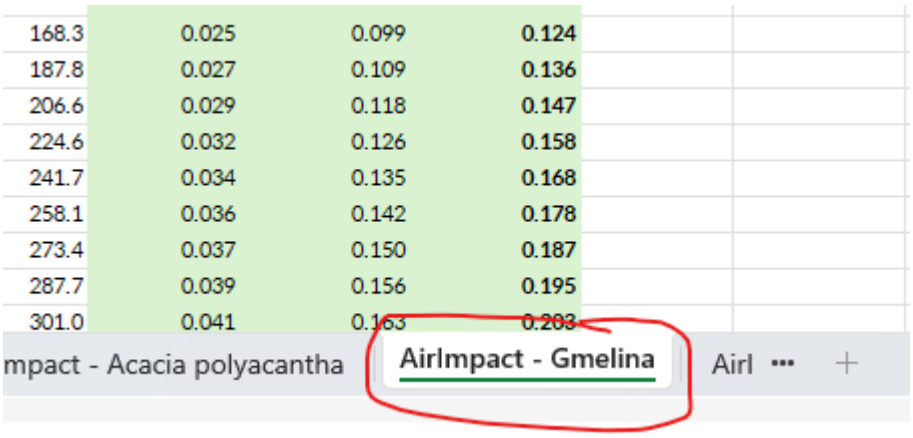
Documentation provided by project participant	
Kijani - selection of allometric equation for expost ERR_v2.pdf *MYRLIN Projections Explanation – Verra.pdf* *expost-ERR_kijani_20250217-chave2014.xlsx* *Ex-Ante ERR (hybrid)- v2.1.xlsx* *VCS PDMR 4475_08012025.docx*	
VVB assessment	**Date:** 26/02/2025
PP updated Ex-ante ERR for all species except Gmelina using the MYRLIN model, which integrates species-specific growth, climate, and geographic data for precise carbon estimations. Developed since 2001, it simulates forest growth, mortality, and carbon pools, aligning with IPCC and WWF frameworks. *The Ex-post ERR estimations were updated using Chave et al. (2014) in line with methodological tool Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities, as used in Uganda's National Forest Inventory. Despite research into species-specific equations, none met project and requirements of the tool. Findings are documented in the provided report, and PP plans to develop its own allometric equations for future compliance.* *However, finding can not be closed due to following issues-* *(a) In the updated Ex-Ante ERR estimation Excel file (Ex-Ante ERR (hybrid)- v2.1.xlsx), certain parameters, such as Below Ground Biomass (woody), Above Ground Biomass (woody), and Total, in*	

spreadsheets like Ex-ante-AirImpact-Charcoal, AirImpact-Acacia Polyacantha, AirImpact-Gmelina, AirImpact-Melia volkensii, etc., are not in a verifiable format. PP is requested to provide clarification on this.

(b) PP has stated that the MYRLIN model was used for all species except Gmelina arborea. However, in the updated ERR calculation sheet, it appears that the MYRLIN model has also been applied to Gmelina trees. PP is requested to clarify this inconsistency.

(c) In the updated ERR calculation sheet (Ex-Ante ERR (hybrid)- v2.1.xlsx), PP has provided ex-ante estimations from 2025 to 2065. However, the project's crediting period is from 22/08/2022 to 21/08/2062. PP is requested to clarify this discrepancy. For reference, please see the screenshots below.

Year	Below Ground Biomass (Woody)	Above Ground Biomass (tCO2e)	Total
2025	0.87	3.49	4.42
2026	5.22	20.89	26.54
2027	10.29	41.15	52.92
2028	15.56	62.22	81.53
2029	20.80	83.19	111.99
2030	25.58	102.34	141.41
2031	29.81	119.24	168.57



The finding remains open until PP provides the requested clarifications mentioned above.

Project participant response	**Date :** 26/02/2025

a) Further clarification and MYRLIN procedures to verify the numbers are provided in the document "MYRLIN - Step by Step.pdf". This document outlines the steps which were followed to get the estimations on the MYRLIN model (screenshots of the results are provided) which are then used in the Exante ERR. b) The MYRLIN model has been applied to Gmelina as well **only for reference purposes** as the **exante estimations for Gmelina are based on Swamy et al.** Gmelina MYRILN estimations have been removed now to avoid confusions. c) This is just part of the Model's output. 2025 would reflect the first year of the project, it doesn't change the results. Anyway, the years have been updated to avoid further confusions.
Documentation provided by project participant
Ex-Ante ERR (hybrid)- v2.2_26022025.xlsx *MYRLIN - Step by Step.pdf*

VVB assessment	**Date:** 28/02/2025
The audit team reviewed the provided documents and confirmed that PP estimated the ex-ante ERR using the MYRLIN model in the AirImpact platform. PP has detailed each step of the ERR calculation within the MYRLIN model. Additionally, PP clarified that the MYRLIN model was applied to Gmelina solely for reference purposes, as the ex-ante estimations for Gmelina were based on Swamy et al. These MYRLIN-based estimations for Gmelina have now been removed, and the ERR calculation has been updated to reflect the appropriate crediting period. As a result, this finding is closed. However, #FAR01 has been raised, as PP indicated plans to develop its own allometric equations for future compliance.	

CAR ID	11	**Section no.**		**Date :** 08/01/2025
Description of CAR				
Sections 6.1, 6.2, 7.1, and 7.2 of the PD/MR are to be updated to include the relevant parameters for accounting for ex-ante and ex-post leakage.				
Project participant response				**Date :** 18/02/2025
Sections 6.1, 6.2 , 7.1 and 7.2 have been updated.				
Documentation provided by project participant				
VCS PDMR 4475_08012025.docx				
VVB assessment				**Date:** 26/02/2025

The audit team reviewed the updated PD and confirmed that Sections 6.1, 6.2, 7.1, and 7.2 of the PD/MR have been revised to include the relevant parameters for accounting for both ex-ante and ex-post leakage. The finding is closed.

CAR ID	12	**Section no.**		**Date :** 09/04/2025
Description of CAR				
1. The PP is requested to update the following information in appropriate section of the PD/MR: • For each selected species, the allometric equation by Chave et al. (2014) meets the requirements of paragraph 6 of AR-TOOL17, v1.0, i.e., a species-specific or group-specific equation derived from trees in similar edapho-climatic conditions and satisfying at least one of conditions (a, b, or c). • Where the requirements in paragraph 6 are not met, the requirements in paragraph 7 of AR-TOOL17, v1 must be met. • If the requirements in paragraphs 6 and 7 cannot be met, the VVB must ensure the project applies a methodology deviation, which must be demonstrated to be conservative and assessed as such. 2. Update the ex-ante spreadsheet to include formulars showing the application of the MYRLIN model to the different tree species. 3. The ex-post spreadsheet shall be updated to include the net ERRs.				
Project participant response				**Date :** 24/06/2025

1. The following table shows the AR tool 17 requirements in paragraph 6 and the level of compliance of Chave's (2014) equation. As it is presented, the equation complies with the requirements of paragraph 6 except for the fact that the equation was not developed for planted forests but for natural forests, which might have different dynamics.

AR Tool 17 – Paragraph 6 Requirements:	Level of compliance (Chave 2014)
Paragraph 6) *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:*	**LEVEL OF COMPLIANCE: PARTIAL** Chave et al was developed for a group of species. The analysis included a globally distributed database of direct-harvest tree experiments in tropical forests, subtropical forests, and woodland savannas. The dataset includes 53 undisturbed vegetation and five secondary forest sites spanning a wide range of vegetation types, for a total of 4004 trees. The dataset was developed in tropical regions and edapho-climatic conditions similar to the ones in the project area (moist tropical forest). The dataset for the equation did not include planted forests.
A) The equation is used in the national forest inventory, or the national GHG inventory, of the host Party"	**LEVEL OF COMPLIANCE: FULL** Chave et al (2014) equation was used in the National Forest Inventory of Uganda.
B) The equation has been used in commercial forestry sector of the host Party for ten years or more	**LEVEL OF COMPLIANCE: N/A** No evidence was found to prove that the equation has been used in the commercial sector
C) The equation was derived from a data set of at least 30 sample trees, and the value of coefficient of determination (R2) obtained was not less than 0.85	**LEVEL OF COMPLIANCE: FULL** The equation was derived from a data set of 4004 trees and an R2 of 0.94.

22) Furthermore, the equation does not fully comply with paragraph 7 requirements.

23) Requirements of paragraph 7 and level of compliance

AR Tool 17 – Paragraph 7 Requirements:	Level of compliance (Chave 2014)
An allometric equation that does not meet the criteria listed under paragraph 6 above can be used for ex post estimation of aboveground tree biomass only if its appropriateness is demonstrated on the basis of ***field data*** *obtained from sample trees as described in paragraphs 8 to 19 below*	**LEVEL OF COMPLIANCE: FULL** The allometric equation was developed on the basis of field data.
For each species or group of species of trees for which the allometric equation was developed and will be used in the A/R CDM project, ***not less than ten sample trees growing in similar edapho-climatic and landscape conditions to those in the area where the A/R CDM project activity*** *is implemented (preferably within the project boundary) are selected.* ***Sample trees are selected in such a way that the full range of tree measurements (e.g. DBH and/or tree height) present within the project boundary and expected to be included in the applicability range of the equation is covered in a representative way****.1 If a tree species is growing in more than one stratum within the project boundary, selection of trees should span across all such strata for which appropriateness of the equation is to be demonstrated.*	**LEVEL OF COMPLIANCE: PARTIAL** The size of the sample of Chave et al was 4004 trees. Trees below 5 cm of DBH were not measured in Chave's analysis (some of the trees measured in this monitoring event of Kijani).
The tree measurements (e.g. DBH and/or tree height) used as input data in the allometric equation are obtained for the sample trees.	**OK**
The predicted biomass of each sample tree is calculated by inserting the tree measurements (e.g. DBH and/or height) into the allometric equation.	**OK**
Measurement of sample trees	**LEVEL OF COMPLIANCE: FULL**

11. The sample trees are felled and the total aboveground biomass of each sample tree is determined from field measurements.	Each tree was felled at ground level, and different sections were weighed fresh or their fresh volume measured. The fresh wood weight was then converted into oven-dry weight by directly measuring the moisture content in the different parts of the plant. In the largest trees, it was usually not practical to weigh the entire individual, so wood volume was often inferred from geometrical considerations (see e.g. Henry et al., 2010; Fayolle et al., 2013), and wood volume was converted into oven-dry weight by multiplying the volume by the wood specific gravity (Chave et al., 2009; Williamson & Wiemann, 2010).
A conservative estimation of aboveground tree biomass is obtained by multiplication of a stem volume, as measured under paragraph 12(a) or 12(b) above, by the appropriate basic wood density and by the default BEF value of 1.15.	**Not specified**
Agreement of the predicted tree biomass with the measured tree biomass is tested by applying a paired t-test to the two datasets of tree biomass which returns the probability (the p value) that the two datasets have the same mean. A step-by-step procedure for calculating the p value returned by a paired t-test is contained in Annex I to this tool. Alternatively, a paired t-test is applied using statistical software	**Not specified**
Project participants shall provide a justification to be assessed by a DOE contracted by them if they wish to apply any other conservative value of BEF under paragraph 13 above.	**No compliance**
The allometric equation is appropriate for estimation of tree biomass, in the baseline and in the project, if the p value returned by the t-test is equal to or greater than 0.90 (see Annex I)	**Not specified**

Although the equation does not entirely comply with AR Tool 17, as it was presented above, it does fulfil several of the conditions. As no equation was found to be available to comply with all the methodological tool's requirement, a methodological deviation will be applied.

Taking into consideration the requirements, Chave et al (2014) was found to be the most suitable as well as the most conservative option. Further information is provided in document *Kijani - selection of allometric equation for expost ERR_v2.pdf*

A methodological deviation was included in the PDMR.

2. The ex-ante spreadsheet was updated to include the application of formulas (Chave et al, 2014), using the MYRLIN model parameters for the different tree species. Apart from that, we are providing a document with further explanations on the updated ex-ante calculations and results *(Analysis of Ex Ante Carbon Calculations.xlsx)*
3. Total ERR updated, a new sheet was added which includes the Net ERR.

Documentation provided by project participant

Kijani - selection of allometric equation for expost ERR_v2.pdf

Analysis of Ex Ante Carbon Calculations.docx

VCS PDMR 4475_18062025_wtc.pdf

VCS PDMR 4475_18062025.pdf

expost-ERR_kijani_18062025.xlsx

Ex-Ante ERR - PRR4 – 24062025.xlsx

VVB assessment	**Date:** 25/06/2025

1. The audit team reviewed the project participant's (PP) response to the non-conformity related to the application of the allometric equation under AR-TOOL17 v1.0, and the necessary updates to the ex-ante and ex-post calculation spreadsheets. The assessment was conducted against the requirements outlined in paragraphs 6 and 7 of AR-TOOL17 v1.0, with consideration given to the acceptability of a methodological deviation where full compliance was not achievable.

   Regarding the first requirement, the PP provided a detailed analysis of the Chave et al. (2014) allometric equation in relation to paragraph 6 of AR-TOOL17. The equation is based on a global dataset of over 4,000 trees, primarily from tropical forests, including edapho-climatic conditions similar to those in the project area. The equation satisfies multiple conditions under paragraph 6, including condition (a) — it has been used in the national forest inventory of Uganda — and condition (c), having been derived from a large dataset with a high coefficient of determination ($R^2 = 0.94$). However, the equation was developed from natural forests rather than planted forests, which introduces limitations in its direct applicability to the project context. As such, the equation only partially complies with paragraph 6 requirements.

   In terms of paragraph 7 compliance, the PP attempted to align the equation with the additional requirements applicable when paragraph 6 is not fully met. While several technical requirements such as field data derivation, tree felling for biomass estimation, and application of measured wood densities are fulfilled, key elements remain unaddressed. These include the absence of a paired t-test to statistically verify the agreement between predicted and measured biomass, and lack of detail regarding the application of the biomass expansion factor (BEF). As such, the project does not fully meet the criteria of paragraph 7.

   Recognizing this partial compliance, the PP has appropriately applied a methodological deviation, documented and justified in the submitted file "Kijani - selection of allometric equation for expost ERR_v2.pdf." The deviation is explicitly recorded in the updated Project Description and Monitoring Report (PDMR) and is presented as a conservative choice, aligning with Verra's requirements for such deviations. Based on this justification and documentation, the audit team considers this non-conformity closed with the application of the deviation.

2. The updated ex-ante spreadsheet ("Ex-Ante ERR - PRR4 – 24062025.xlsx") was reviewed by the audit team. In the revised version, the PP has applied the Chave et al. (2014) allometric equation to estimate ex-ante aboveground biomass, integrating species-specific parameters derived from the MYRLIN model. This approach ensures alignment with the selected equation and accounts for species-level variability in biomass accumulation. The accompanying document, "Analysis of Ex Ante Carbon Calculations.docx," provides detailed explanations of the modeling approach, parameterization, and calculation procedures. Based on the review, the audit team confirms that the revised ex-ante spreadsheet is replicable and demonstrates sufficient transparency, consistency, and methodological rigor in line with applicable requirements.
3. The updated ex-post spreadsheet ("expost-ERR_kijani_18062025.xlsx") now includes a new worksheet with the calculation of net Emission Reductions and Removals (ERRs). The total net ERRs are clearly shown and traceable, with correct separation from gross ERRs. The inclusion of this information satisfies the monitoring and reporting requirements for ex-post ERR accounting.

All three non-conformity items have been satisfactorily addressed. The Project Proponent has demonstrated a reasonable and conservative application of the allometric equation, supported by a clearly documented methodological deviation. The ex-ante calculations have been updated to incorporate the Chave et al. (2014) allometric equations, using species-specific parameters derived from the MYRLIN model, thereby ensuring that the carbon stock estimates are both replicable and traceable. Furthermore, the ex-post spreadsheet has been revised to transparently present the net Emission Reductions and Removals (ERRs). Based on the review of the submitted documentation and supporting analysis, the audit team confirms that the non-conformity is considered closed.

CAR ID	13	Section no.		Date : 09/04/2025
Description of CAR				

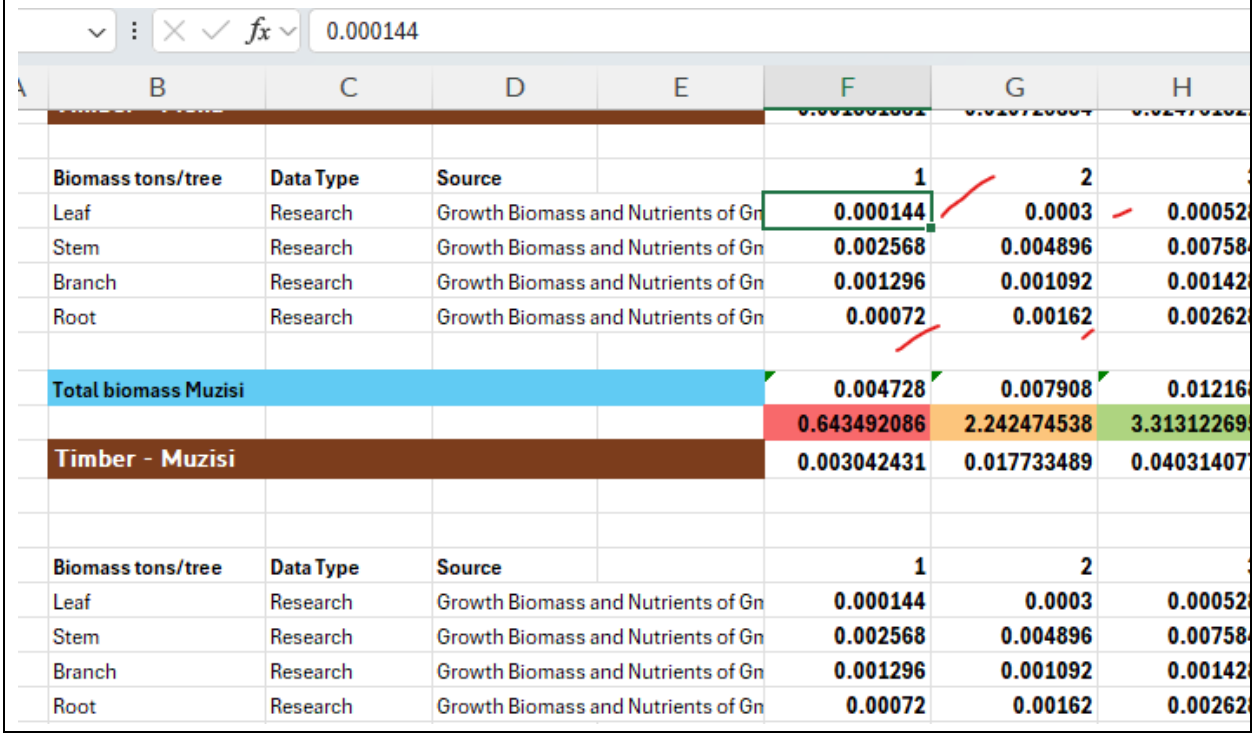
Upon the reassessment of the Curve Comparison sheet in the ERR calculation sheet (Ex-Ante ERR - PRR4 – 24062025.xlsx) and observed the following issues:

(a) Site Quality Classification:
It is unclear how the Project Proponent (PP) has classified site quality into categories such as *Poor, Poor+, Normal-, Normal, Normal+, Optimal-, and Optimal*. Additionally, the basis for assigning percentage values to each site quality category and their corresponding growth curves is not provided. PP shall explain the criteria used for site quality classification and justify the assigned percentage values for each category.

(b) Ex-Ante Quadric DBH Values:
The values of Quadric Diameter at Breast Height (DBH) must be presented in a verifiable/traceable format. If these values are derived from the MyRLIN model, PP shall provide clear and traceable evidence of the derivation process, including data sources and calculation steps.

(c) Inconsistent Estimation Periods:
PP has estimated Quadric DBH for only 11 years for *Gmelina, Melia, Boundary, and Charcoal* species, whereas it is estimated for 15 years for *Musizi*. PP shall justify this inconsistency among the species and clarify why the estimation is not conducted for the full crediting period for all species.

(d) Biomass Values Traceability:
The biomass values (leaf, stem, branch, and root) for the selected species are not presented in a verifiable or traceable format. PP shall provide the underlying data and calculation method in a clear and traceable manner. For reference, please refer to the attached screenshot of the relevant Excel sheet.



Project participant response	**:** 24/07/2025
a. The site quality used in the modeling corresponds to the default classification in the MYRLIN model, which is "Normal". This default value is applied unless site-specific evidence justifies the use of a different category (which is not the case), ensuring a conservative estimation approach. To illustrate how varying site qualities could affect results, a dropdown menu is included in the ex-ante ERR spreadsheet (cell C26 of the "Summary" worksheet). The information on site index classification and its impact on model outputs was provided directly by the model developer (a copy of the email and the information which we received is provided now) b. The ex-ante DBH values were provided directly by the developer of the MYRLIN model via email on May 13th , 2025, which is now being shared with the VVB (each of the links contains the growth parameters for each species). As the initial DBH figures were based on an "Optimal" site quality, they were adjusted by the PP to reflect "Normal" site quality in the ex-ante spreadsheet ("*Ex-Ante ERR - PRR4 – 11072025*") using conversion factors provided by MYRLIN following the indications in question (a). c. The difference in the estimation period across species is due to their distinct uses and associated forest management practices. Each species is allocated to a specific end-use (e.g., timber, charcoal, boundary planting), which determines its rotation length. These rotation cycles vary by species and are aligned with the silvicultural objectives. The respective rotation periods for each species are detailed in the PDMR. *d.* The biomass values (leaf, stem, branch, root) presented in the referenced rows are based on Swamy et al. and are **used exclusively for Gmelina**. As such, they were previously hidden in the spreadsheet for the rest of the species since they were not used in any carbon removals estimations. They were now deleted to avoid confusion. For all other species, biomass estimations are derived from growth curves generated by the MYRLIN model.	
Fwd Nursery Hub Species.pdf *Additional MYRLIN info (email).pdf* *MYRLIN Model Response to Carbon Certification Questions.pdf* *Ex-Ante ERR - PRR4 – 22072025.xlsx*	
VVB assessment	**Date:** 31/07/2025

a) The PP has stated that the site quality used in the modeling corresponds to the default classification of “Normal” in the MYRLIN model, and that this value is applied unless site-specific evidence justifies a different classification. While this approach may represent a conservative estimation, the PDMR does not clearly explain how site quality categories (e.g., Poor, Normal, Optimal, etc.) are defined, nor does it provide justification for the chosen classification or describe how these classifications influence growth curves and, consequently, the ex-ante Emission Reduction Results (ERR). Although the PP mentions that a dropdown menu is available in the ex-ante ERR spreadsheet to demonstrate sensitivity to site quality changes, this does not substitute for a clear and transparent explanation in the PDMR. Moreover, the information received from the model developer regarding site quality classification and its impact on the model outputs is not adequately reflected or summarized in the PDMR. Therefore, clarification is required to ensure that the rationale and implications of the site quality classification on ERR estimates are well understood and properly documented. **Finding remains open.**

b) The PP has indicated that the ex-ante Quadric Diameter at Breast Height (DBH) values were obtained directly from the MYRLIN model developer via email on May 13th, 2025, and that these values—originally based on "Optimal" site quality—were subsequently adjusted by the PP to reflect "Normal" site quality using conversion factors also provided by the model developer. While this explanation outlines the general derivation process, the assessment found that the DBH values have not been presented in a verifiable or traceable format. The PDMR and supporting documentation do not clearly demonstrate the specific data sources, calculation steps, or conversion methodology used to derive the final DBH values included in the ex-ante spreadsheet. Therefore, the PP is required to provide the DBH values in a format that is fully traceable and verifiable, including explicit reference to the original source data, adjustment factors applied, and intermediate steps taken to arrive at the final values used in ERR estimation. **Finding remains open.**

c) The PP has clearly explained that the variation in the estimation period of Quadric DBH across different species is due to their distinct end-uses and associated forest management practices, with each species assigned a specific rotation length based on its silvicultural objectives (e.g., timber, charcoal production, or boundary planting). These rotation cycles, which vary by species, are appropriately aligned with their respective management regimes and are detailed in the PDMR. The explanation adequately justifies the rationale for estimating DBH over 11 years for some species and 15 years for others. Based on the clarity and consistency of the justification provided, this finding is considered closed.

d) The PP has clarified that the biomass values (leaf, stem, branch, and root) presented in the referenced spreadsheet rows are based on Swamy et al. and apply exclusively to Gmelina, while for all other species, biomass estimations are derived from growth curves generated by the MYRLIN model. The PP also mentioned that the previously unused biomass values for other species were hidden and have now been deleted to prevent confusion. However, upon review of the “Curve comparison” sheet, the assessment team observed that the biomass values for Gmelina remain in a format that is not traceable or verifiable. Furthermore, the estimation of these values using Swamy et al. is not reflected in the ERR sheet. Therefore, the PP is requested to present the biomass values for Gmelina in a fully verifiable and traceable format, including proper source citation, calculation methodology, and all underlying data. As the necessary documentation and transparency have not yet been provided, **this finding remains open.**

Project participant response	04/08/2025

a. A comprehensive and transparent explanation regarding the MYRLIN model and the site quality classification has now been included in the PDMR. This update provides:

24) - A description of how site quality categories (e.g., Poor, Normal, Optimal) are defined within the model and their role in influencing growth curves and ex-ante Emission Reduction Results (ERR).

25) - A detailed explanation of the process we followed to ensure the use of the most transparent and conservative estimates, including:

26)

27) - Engagement with the MYRLIN model developer to clarify the definitions and implications of site quality classifications.

28) - A summary of the information received from the developer, including the formats in which it was provided and how it was applied to the ex-ante estimations.

29)

30) - References to supporting documentation provided by the model developer.

31) - Clear documentation of the procedures followed, enabling full transparency and allowing any third party to replicate the calculations using the growth parameters supplied by the MYRLIN developer.

32)

33) Additionally, the rationale for selecting the "Normal" site quality classification has been clearly explained. In accordance with the MYRLIN model's default settings and best practice for conservative estimations, "Normal" is applied unless there is sufficient, site-specific evidence to justify the use of "Optimal" or "Poor" conditions. In this case, even though the forest inventory for the ex-post measurements showed a higher-than-"Normal" value, the default "Normal" category was used to ensure a conservative and transparent approach that will be appropriate for all of Kijani's future sites.

34)

b. Further information has been included in PD, specifically in section 5.2 (refer to answer in a). Moreover, the traceability of the information had been already validated by the VVB on 25/06/2025, as part of the answers for CAR *01:"The accompanying document, "Analysis of Ex Ante Carbon Calculations.docx," provides detailed explanations of the modeling approach, parameterization, and calculation procedures. Based on the review, the audit team confirms that the revised ex-ante spreadsheet is replicable and demonstrates sufficient transparency, consistency, and methodological rigor in line with applicable requirements.".* As it has been informed, as the output of the model only provides tCO2 in biomass, the PP engaged directly with the model developer to understand the underlying equations and information and was then provided with the growth curves, including quadratic DBH and height, which allowed the PP to apply the Chave et al equation to estimate the ex-antes removals. The links to the spreadsheets which were shared by the MYRLIN developer are provided again. :

Gmelina arborea – 4m spacing
https://docs.google.com/spreadsheets/d/1JYkfVZfBU0Gr0nVd2HhhvPAjceYzTiNSTScajVICuN0/edit?usp=sharing

Melia volkensii - 4m spacing
https://docs.google.com/spreadsheets/d/1xkSSmXjLQK9_dv2nqx2oO1iLfpil7nAVC284-dH7gn0/edit?usp=sharing

Maesopsis eminii - 4m spacing

- https://docs.google.com/spreadsheets/d/1Pi7LgHiP8Iwh-OoZ5VIzb4EvR_xS9TaVGwZu5EeffrQ/edit?usp=sharing

Senegalia polyacantha - 2m spacing
https://docs.google.com/spreadsheets/d/1ZN5c99nx8jodhSQnHVwMAUaCn1xZFsX_VH-kT8iWacE/edit?usp=sharing

Albizia lebbek - 2m spacing
https://docs.google.com/spreadsheets/d/1DpzOpiFYKfa1yZwVNRygq8jKPHZF1bVFd-Sd_LlyXD4/edit?usp=sharing

Senna siamea - 2m spacing
https://docs.google.com/spreadsheets/d/1Ic3f4hCcYOZhKnIcKAWpmV3cAcrQk4hJwor3uHjmDTY/edit?usp=sharing

d) Section 5.2 cites the research paper which the *Gmelina arborea* values are derived from with the full scientific methodology explained in the paper. Values were taken from Table 3 titled *"Component wise biomass of G. arborea chronosequence plantations..."* and brought to a per-tree basis using the stand density in Table 1 titled *"Stand and growth characteristics of G. arborea chronosequence plantations..."*. The values for G. arborea are directly from research where individual trees were measured and this data has been the basis of the *Gmelina arborea* calculations. This research was provided in the February 22nd, 2024, transmission of data and the values have not changed for Gmelina throughout the project, so we believe this should have been fully reviewed and accepted by this time.

35)

Documentation provided by project participant	
NA	
VVB assessment	**Date: 05/07.2025**

a) The Project Proponent (PP) has now included a comprehensive explanation in the PDMR detailing how site quality categories (e.g., Poor, Normal, Optimal) are defined within the MYRLIN model, how they influence the growth curves, and their implications on the ex-ante Emission Reduction Results (ERR). The updated documentation also:

- Summarizes the engagement with the MYRLIN model developer.
- Clearly states the rationale for selecting the "Normal" site quality classification, consistent with the model's default assumption and aligned with conservative estimation principles.
- Describes the process followed to ensure transparency and replicability, including a summary of the developer's feedback and associated documentation.

This enhanced narrative sufficiently addresses the need for clarity, justification, and transparency regarding the use of site quality classifications and their influence on ERR estimations. The inclusion of dropdown functionality in the ex-ante ERR spreadsheet is acknowledged as a helpful feature, though not a substitute for a written explanation—which has now been satisfactorily provided.
b) The PP has incorporated further information in Section 5.2 of the PDMR and referenced the supporting document "Analysis of Ex Ante Carbon Calculations.docx," which was already reviewed and validated by the VVB on 25 June 2025. This document outlines the modeling process, parameterization steps, and conversion methodology used to adjust the original DBH values from "Optimal" to "Normal" site quality based on factors provided by the model developer.
Additionally, the PP has resupplied direct links to the original growth curve spreadsheets shared by the MYRLIN developer for each species. These spreadsheets include the necessary biometric parameters (including quadratic DBH and height), which were used to apply the Chave et al. allometric equations for biomass estimation.
For *Gmelina arborea*, the PP has cited the specific peer-reviewed publication and detailed how component biomass values were derived on a per-tree basis using data from the publication's tables. This scientific basis for the Gmelina values was submitted earlier in the project cycle and has remained consistent.
The documentation now provides adequate traceability of source data, conversion methodology, and final parameter integration in the ex-ante ERR spreadsheet.

Finding is closed now

Table 4. FAR from this validation

FAR ID		**Section No.**		**Date :** 28/02/2025
Description of FAR				
In response to #CAR 10, PP stated, "For future verifications, the PP will create its own allometric equations to ensure compliance with the methodology and methodological tools." This statement is also reflected in the supporting document Kijani - Selection of Allometric Equation for Ex-Post ERR_v2.pdf. Accordingly, the audit team has raised this FAR, requiring the VVB for the next verification to validate the allometric equation developed by Kijani. The newly developed allometric equation must meet the requirements outlined in points 8–19 of the methodological tool Demonstrating Appropriateness of Allometric Equations for Estimation of Aboveground Tree Biomass in A/R CDM Project Activities. Additionally, the equation must be conservative in nature.				

Project participant response	**Date :** DD/MM/YYYY
Documentation provided by project participant	
VVB assessment	**Date:** DD/MM/YYYY