



LUANGWA COMMUNITY FORESTS PROJECT VERIFICATION REPORT

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Summary:

AENOR has carried out the verification of the Luangwa Community Forests Project. The project is a large-scale REDD+ project implemented in Eastern and Lusaka Provinces, Zambia with an initial project activity instance area of 943,676 ha, and a second project activity instance of 92,990 ha, totalling 1,036,636 ha. It is being implemented on communal land in 12 chiefdoms falling within Game Management Areas (GMA) and private ranches. Implementation is in partnership with the traditional authorities and the government of the Republic of Zambia. The project generates emissions reductions through avoided deforestation with mitigation activities that include a combination of direct conservation support, engagement and capacity building with key Government and community stakeholders.

The project's community objective is instituting poverty alleviation activities benefiting at least 20,000 households, specifically targeting poor and vulnerable households. The biodiversity objectives are maintaining a wildlife corridor between several national parks in the catchment of Zambia's 4th largest river system, conserving and maintaining vulnerable and endangered species through habitat protection and reduction in poaching. The climate objectives are to avoid deforestation in the project area and assist communities and biodiversity with climate change adaptation strategies through income diversification, improved farming techniques, crop diversification, and maintenance of habitat corridors.

The project start and implementation date is 1 May 2015 and will be operational until 30 April 2045. The estimated emissions reduction for the 30-year project span is 93,143,838tCO₂e at an average of 3,104,795 tCO₂e/yr. The emissions reduction for the current monitoring period (01-January-2021 to 31-December-2021) is 1,942,752 tCO₂e. This is a grouped project.

The purpose of the verification was to determine the conformance of the project with respect to the VCS Standard v4.3 and the validated PD and the assessment of the ex-post monitored anthropogenic GHG emissions reductions and/or removals that have occurred as a result of the project's activities.

The scope of the verification was to assess the conformance of validated project, once implemented, with the VCS requirements and requirements in the validated PD. The process was performed through a combination of desk review, interviews, and communications with relevant personnel.

This is the fourth verification event, corresponding to the monitoring period from 1 January 2021 to 31 December 2021.

During the verification 2 CLs and 2 CARs were raised. All these issues were appropriately closed by means of corrections, more clear explanations, and other supporting documents.

Once all issues detected were appropriately resolved, AENOR carried out this final verification report and deems with reasonable level of assurance that the project complies with all of the verification criteria. The assessment team has no restrictions or uncertainties with respect to the compliance of the project with the verification criteria, hence, the audit team concludes that the cumulative net GHG emissions reductions or removals of 1,929,003 tCO₂e over the monitoring period has been quantified in accordance with VCS rules. A buffer discount rate of 10% was applied, resulting 1,736,102 VCU eligible for issuance.

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1 INTRODUCTION

1.1 Objective

The objective of the verification audit was to conduct an independent assessment of the project to determine:

- The extent to which methods and procedures, including monitoring procedures, have been implemented in accordance with the validated project description (PD), including the monitoring plan.
- The extent to which GHG emission reductions and removals reported in the monitoring report (MR) are materially accurate.

1.2 Scope and Criteria

The scope of the verification audit was to verify the emissions reductions and/or removals of the project, Luangwa Community Forests Project against the Verified Carbon Standard, the identified methodology and the validated PD throughout the monitoring period from 01 January 2021 to 31 December 2021.

The scope was defined as follows:

- The project area
- The eligibility, baseline scenario and additionality
- The physical infrastructure of the project
- The GHG sources, sinks and/or reservoirs that are applicable to the project according to the used methodology and the validated PD
- The types of GHGs that are applicable to the project according to the used methodology and the validated PD.
- The project monitoring period.
- The GHG emission reductions/removals assertions and claims.
- The local stakeholder consultation processes.
- The AFOLU safeguards.

The objectives of this audit included a verification of the Project's calculated reductions and/or removals and the non-permanence risk assessment report /3/ with the Verified Carbon Standard requirements and any additional requirements of VCS AFOLU projects. In addition, the audit assessed the project with respect to the validated baseline scenarios presented in the PD.

In accordance with Section 4.1.8 of the VCS Standard, the criterion for validation and verification was the VCS Version 4, including the following documents:

- VCS Standard v4.3
- VCS Program Guide v4.2
- VCS AFOLU Non-Permanence Risk Tool v 4.0

Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS guidance document.

1.3 Level of Assurance

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

All the versions of the verification report were subjected to an independent internal technical review before being submitted to the client to confirm that all verification activities had been completed according to the pertinent AENOR instructions required. The technical review was performed by a technical reviewer(s) qualified in accordance with AENOR's qualification scheme for VCS validation and verification.

Name	Role in the team
Juan Carlos Gómez	Lead Auditor
Marina Arroyo	Auditor
Elena Llorente	Technical reviewer

The threshold for materiality with respect to the aggregate of errors, omissions, and misrepresentations relative to the total reported GHG emission reductions/removals was one percent (1%), as established for large projects by the VCS Standard.

1.4 Summary Description of the Project

The Luangwa Community Forests Project is a large-scale REDD+ project implemented in Eastern and Lusaka Provinces, Zambia with a project area of 1,036,636 ha. It is being implemented on communal land in 12 chiefdoms falling within Game Management Areas (GMA) and private ranches. Implementation is in partnership with the traditional authorities and the government of the Republic of Zambia. The

project generates emissions reductions through avoided deforestation, using the following mitigation activities: a combination of direct conservation support, engagement and capacity building with key Government and community stakeholders. The baseline scenario is unplanned deforestation driven primarily by subsistence agriculture.

The project's community objective is instituting poverty alleviation activities benefiting at least 20,000 households, specifically targeting poor and vulnerable households. The biodiversity objectives are maintaining a massive wildlife corridor between several national parks in the catchment of Zambia's 4th largest river system, conserving and maintaining vulnerable and endangered species through habitat protection and reduction in poaching. The climate objectives are to avoid deforestation in the project area and assist communities and biodiversity with climate change adaptation benefits through income diversification, improved farming techniques, crop diversification and maintenance of habitat corridors.

The project start and implementation date is 1 May 2015 and will be operational until 30 April 2045 /1/. The second activity instance started on the date of 11 August 2021 and will also be operational until 30 April 2045. The estimated gross emissions reduction for the 30-year project span is 93,143,838 tCO₂e at an average of 3,104,795 tCO₂e/yr. The emissions reduction for the current monitoring period (01-January-2021 to 31-December-2021) is 1,736,102 tCO₂e /4-5/. This is a grouped project.

2 VERIFICATION PROCESS

2.1 Method and Criteria

The verification was performed through a combination of document review and interviews with relevant personnel, as discussed in Sections 2.2 through 2.4 of this report. At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.5, findings were issued to ensure that the project was in full conformance to all requirements.

A project specific Verification and Sampling Plan was developed to guide the verification auditing process to ensure efficiency and effectiveness. The purpose of the Verification and Sampling Plan was to present a risk assessment for determining the nature and extent of verification procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The Verification & Sampling Plan methodology was derived from all items in our verification process stated above. Specifically, the sampling plan utilized the VCS guidance documents and ISO 14064-3 and the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities Version 03.0. Random samplings were carried out considering a confidence interval of 95% and error of 10%. Any modifications applied to the Verification and Sampling plan were made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

The verification activities in which risks were assessed were the evaluations of the monitoring system (data flow, data control procedures, etc.) but mainly the quality of raw data as well as sources and the spreadsheet calculations. AENOR reproduced and verified 100% of spreadsheets /4-6/ for the monitoring period 01 January 2021 – 31 December 2021 for the project area. The project boundary and deforested areas in the project area for the monitoring period were 100% checked using the GIS database /8-20/.

The carbon stock changes, and the land used classes in the project area were also 100% verified and crosschecked with validated values in the PD /1/.

AENOR carried out a deep and meticulous review of the spreadsheets /4-6/ in order to verify the correct application of the methodology (formulae, equations.) and checked that data required calculating the GHG removals were appropriately provided. Based on the assessment carried out, AENOR confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions, or misstatements.

AENOR confirms that sufficient evidence was presented for the reported net anthropogenic GHG emission reductions and that there is a clear audit trail that contains the evidence and records that validate the stated figure in this verification report since:

- Sufficient evidence available: The project participant has provided the 100% of data used in the calculations to achieve the final amount of GHG emission reductions and removals reported.
- Nature of evidence: The raw data were collected from reliable sources. They are detailed in the project documents and have been provided to the verification team and were checked during the interviews.
- Cross-checked evidence: AENOR cross-checked the collected information through interviews with stakeholders and reproducing calculations.

Hence, AENOR confirms that the stated figures in the monitoring report are correct and confirms that is able to certify the ex-post net anthropogenic GHG reductions and removals based on verifiable and reliable evidence.

2.2 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from, VCS program requirements, the methodology (VCS VM0009 V3.0), and the validated PD. Initial review focused on the MR and included an examination of the project details, implementation status, data and parameters, and quantification of GHG emission reductions and removals. Documents reviewed included data from monitoring, carbon rights contracts, forest management agreements, maps and aerial images, monitoring and grievance SOPs, biomass and carbon calculation spread sheets, and responses to Corrective Action Requests (CARs) and Clarifications (CLs).

The verification included a review of the validated PD and MR, related to the field conditions and interviews with project management staff and stakeholders. Modifications to the Verification and

Sampling plan were made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

The VCS AFOLU Non-Permanence Risk Tool was used by the Project Proponent to assess overall project risk. AENOR reviewed the Non-Permanence Risk Report /3/ provided with the verification supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool. Each risk factor was thoroughly assessed for conformance. The final score was calculated to be 10%.

For a listing of all documents received from the client for this verification, please see Appendix 1. Numerical references to evidence are provided throughout this report, following the numeration provided in Appendix 1.

2.3 Interviews

Interviews were performed as part of the overall verification process which was additional to that provided in the project description, monitoring report and any supporting documents. AENOR's verification team talked with individuals with various roles in the project. This included a series of interviews with project management and in-country staff that support the mission of the project. Local community members were interviewed in relation to participation in the project, support received, project implementation status, consultation processes, and project benefits expected and achieved.

Due to COVID-19 health restrictions, all interviews were carried out through a combination of live videoconferences and 6 video recordings of questionnaire answering. The interviews took place on 16/02/2022.

The AENOR verification team conducted interviews (remotely) to confirm selected information and to resolve issues identified in the document review. The list of the interviewed people is detailed below:

Stakeholder group	Name/role	Topic	Date/verification mean
Beneficiary	Chaima Zimba	Beekeeping	16/02/2022
Beneficiary	Amon Soko	Beekeeping	16/02/2022
Beneficiary	Jonathan J Mwale	Conservation Farming	16/02/2022
Beneficiary	Veronica Banda	Conservation Farming	16/02/2022
Beneficiary	Esther Phiri	Scouts Patrols	16/02/2022
Beneficiary	Abeaud Namalombe	Scouts Patrols	16/02/2022

2.4 Site Inspections

Due to the exceptional situation caused by the COVID-19 crisis and the travel restrictions established by governments for safety reasons, it was not possible to carry out a site visit as part of the verification process of the project.

In accordance with VERRA's COVID-19 Travel Guidance for Projects (dated 18 March 2020) and since that the VCS Programs does not explicitly mandate site visits, an exemption of the site was requested on the ground of the crisis situation and considering that a reasonable level of assurance was achievable by other means. AENOR as VVB proposed to carry out a remote verification audit that ensured the achievement of the assurance level required by the VCS program.

The remote audit was based on the following auditing techniques:

- Document review and cross checks between the information provided in the in the MR, the PD and supporting information and evidence provided by the PP Emissions calculations, GIS database, and supporting information and evidence provided.
- Review, based on the selected methodologies, tools and the other applied methodological regulatory documents, of the appropriateness of formulae and accuracy of calculations.
- Telephone, teleconference and/or e-mail interviews for the implementation of project activities and the elaboration of project's documents.
- Cross checks between information provided by interviewees to ensure that not relevant information has been omitted.
- The remote audit procedure was agreed with the PP based on available means and safety procedures. Key stakeholders were interviewed as described below.

For the verification of project activities and monitoring, in addition to the interviews described in Section 2.4, the following means were used /51-68/:

Project activity	Mean of verification
Construction of 1x2 classroom block at Mukopola Primary School	• Photograph of the school construction
Construction of 1x2 classroom block at Chansanje VAG	• Photograph of the school construction
4 boreholes drilled in Kamweshya	• Photograph of the boreholes
2 Hammer mills procured for Chimusanya VAG - one electric, 1 diesel	• Photograph of the mills
CFMG paid, from carbon funds, K400 per household for farming inputs	• Records
Livelihood-Climate Smart Agriculture	• Training records, 4 beneficiary testimonies

Project activity	Mean of verification
Horticulture - Treadle pumps x 80 to Lunsemfva VAG	• Photograph of the treadle pumps
Police post	• Photograph of the construction of police post
CFMG office	• Photograph of the construction of CFMG office
Goat rearing	• Photograph of goats
Livelihood-Climate Smart Agriculture	• Training records, 2 beneficiary testimonies

2.5 Resolution of Findings

All documentation provided by the PP was assessed against the applicable version of the relevant VCS guidance document. Several clarification requests (CL) and corrective action requests (CAR) were raised and submitted to the PP, which addressed them either by providing to the audit team the requested information or by making the appropriate corrections. Updated versions of the documentation were submitted by the PP and the audit team reassessed them against the guidance documentation. This process was repeated iteratively until all CL and CAR were fully closed. Specifically, 2 CLs and 2 CAR were raised.

All findings issued by the AENOR audit team during the verification process have been closed. In accordance with Section 4.1.13 of the VCS Standard, all findings issued during the verification process, and the inputs for their closure, are described in Appendix 2 of this report.

There were no outstanding forward action request (FAR) from the previous verification /7/.

2.5.1 Forward Action Requests

No FARs were raised to the PP during the verification process.

2.6 Eligibility for Validation Activities

AENOR holds accreditation for validation for the relevant sectorial scope 14 under which this project activity is classified.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

The verification team is not aware of project involvement in other forms of environmental credits from its activities. The project has not been registered, and is not seeking registration, under any other GHG programs.

3.2 Methodology Deviations

The following methodology deviations were applied to the project from previous monitoring periods:

1. Demonstration of Forest Age

The methodology requires (in PDR.22) that a digital GIS-based) map of the project accounting areas, including aerial or satellite imagery showing that they are comprised of forests or native grasslands as of the project start date and 10 years prior to the project start date. The project did not meet this requirement because it chose to map forests in the project area with PALSAR radar data and the earliest available data for that sensor is from 2007. However, this is justified on several grounds. The project areas are virgin forests that were previously remote and are inaccessible. Thus, there is no history of large disturbances in the area that would have been followed by regeneration between 2005 and 2007. An accurate 2007 forest map of these areas should be virtually indistinguishable from a 2005 map. Additionally, using the 2007 PALSAR imagery results in a much more accurate map of the forests that existed 10 years prior to the start date than would be possible with optical imagery. The optical imagery best suited to mapping the project area is generally from April-June. It is at this time of year, that relatively cloud free imagery can be obtained when the forests still have leaves and are not dotted with burn scars. Even so, the passing of just a couple of weeks during this period, which is immediately after the rains, results in significant changes in the appearance of the forest in optical imagery. The project initially tried mapping forests with optical imagery, but found significant changes between years that were the result of seasonality rather than real changes in forest areas. These effects are much reduced when using PALSAR radar data. This is because, in addition to being cloud penetrating, L band radar has a relatively long bandwidth and thus does not generally interact with the leaves of trees, but does interact with large branches and stems. Finally, VM0009 does not require a remote sensing analysis of an area, but rather to visual show that it is unconverted as of the project start date and 10 years prior.

2. Leakage Plot Protocol

There was a minor deviation of the visual approach for leakage monitoring (Appendix R, VM0009). Instead of Forest Inventory Team members estimating degradation, they were required to geo-reference every felled tree in the permanent plots and the total number of felled trees were compared against the average density of trees/ha in the project accounting area, again avoiding biased estimations/erroneous counting of trees in 1 ha plots. This value was then placed in a degradation category as per VM0009.

3. Biomass estimation

The project uses two different allometric equations to estimate above ground biomass. One was developed from data provided by Prof. Chudimayo from Zambian Miombo and was tested on trees up to 55 cm DBH. It is used to estimate the biomass of trees up to 63 cm dbh, with the biomass of trees between 55 cm and 63 cm dbh assumed to be equal to a 55 cm dbh tree. Then, a second equation developed by Mugasha et al. in Tanzanian Miombo is used to estimate the biomass of trees between 63 cm dbh and 110 cm dbh with trees with a greater than 110 cm dbh assumed to have a biomass equal to a 110 cm dbh tree.

4. Soil Emission Calculations

The VM0009 baseline soil emissions model assumes that SOC in deforested areas will deplete to the same value as the proxy area after 5 years. Project SOC emissions are supposed to be tracked directly through field measurements in encroached areas. However, in the project area, the main drivers of deforestation (smallholder farmers) deliberately choose high fertility areas for conversion with higher than average SOC values. Following the methodology, it would appear that encroachment causes an increase in SOC, which is not consistent with what is actually occurring to soil stocks. To avoid this bias, the PP assumed that once encroached, the average SOC stocking per ha in the encroached area becomes the proxy area SOC stocking.

AENOR verified that these methodology deviations were validated in previous verification events by checking the validated PD, validation report and all previously issued MRs and verification reports, published in Verra's Registry.

There are not new methodology deviations applied in this monitoring period.

3.3 Project Description Deviations

The following project description deviation was applied to the project from previous monitoring periods:

Parameters $t^{[i-1]}$, $t^{[m]}$, $t^{[m-1]}$, $U_B^{[m]}$, $U_{EM}^{[m]}$ have been included as data and parameters monitored. These parameters were mistakenly excluded from Section 3.3.2 Data and Parameters Monitored in the PD but have been monitored anyway from the beginning of the project. The deviation has been appropriately described and justified and do not affect the applicability of the methodology, the additionality of the project nor the appropriateness of the baseline scenario. Thus, the audit team considers the deviation to be valid and that the project remains in compliance with the VCS rules.

AENOR verified that this project description deviation was validated in previous verification events by checking the validated PD, validation report and all previously issued MRs and verification reports, published in Verra's Registry.

There are not new project description deviations applied in this monitoring period.

3.4 Grouped Project

A new project instance was added to the project during this monitoring period, project activity instance 2 which comprises a total project area of 92,990 ha of which 55,351 ha consist of forest. This new project instance is located in three private game ranches from the Chiefdoms Luembe and Mwape, and the Mpanshya corridor of the GMA Rufunsa, chiefdom of Mpanshya. This has been checked with GIS evidence /8-20/.

The new project instance has been checked for its conformance against the eligibility criteria set out in the PD as follows:

Criteria	Means of verification
Must be within the chiefdoms already identified as potential future activity instances in the PD	Information on the PD/1/ and GIS evidence /8-20/
The project type for future project instances must be avoided unplanned deforestation. Accordingly, the end land use in the baseline scenario must be non-forest.	Information on the PD/1/
The baseline drivers and agents of deforestation in future project instances must be of the same type as the current project instances - clearing of forested land for expansion of small-holder farming and, or charcoal production.	Drivers and agents study by UNIQUE /74/
Future project accounting areas must have met the Zambian definition of forest for at least 10 years prior to the project start date.	Information on the PD/1/
Some point within 2km of the perimeter of future accounting areas must have been converted from forest to farming.	Calculations/5-6/
Future project accounting areas must be located in a tropical ecosystem and must not contain peat soil.	GIS evidence /8-20/
For each new accounting area, a reference region meeting the requirements in terms of size and similarity to the accounting area as per section 6.8.1 of VM0009 v3.0 must be delineated.	GIS evidence /8-20/

Criteria	Means of verification
For any new reference regions that may be required, there is sufficient historical imagery meeting the requirements of section 6.8.4 of VM0009 v3.0.	GIS evidence /8-20/
Project activities for new project instances are the same as those described in this PD.	N/A
The project proponents can access any new leakage or proxy areas that may be required for monitoring related to new project instances as per sections 8.3.2.1 and 6.4 of VM0009 v3.0.	GIS evidence /8-20/
Same Governance and Land Tenure and Social Economic Systems	Title Deed from private game ranch owners and community forest management Agreements signed between government and Community resources boards (CFMGs) /24, 71/

The audit teams, after checking the evidence detailed above, considers that the documentation related to the new project activity instance 2 is complete and of quality.

Thus, the verification team deems correct and valid the inclusion of Project Activity Instance 2.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The Luangwa Community Forests Project is a REDD+ project which activities fit in three categories:

- Activity Area 1: Infrastructure Development, Social Service Delivery
- Activity Area 2: Apiculture, Agricultural Improvement, Diversification and Economic Opportunities
- Activity Area 3: Forest Encroachment and Wildlife Monitoring and Poaching Reduction

The MR provides in its Section 3.1 a detailed description of the activities implemented by the project since its start. During this verification process, AENOR has not detected project changes in regards of the project title, its purposes and objectives. As such, the project activity accurately reflects the proposed project which consists of avoiding deforestation through direct conservation support, engagement and capacity building with key Government and community stakeholders, performance-based payments to community stakeholders delivered through local institutions, and promotion of alternative livelihood activities.

During the verification process, the audit team checked the actual implementation of project activities through the analysis of evidence provided by the PP /51-68, 72/ and through interviews to local stakeholders and project staff /73/. No discrepancies have been found between the gathered evidence and the implemented activities reported in the MR, as well between the MR and the planned activities in the PD.

The project is designed as a grouped project, and then the inclusion of new instances is acceptable. For the present monitoring period, activity instance 2 was included as explained on the previous section.

After the review of the MR /2/, spreadsheet /4-6/ and the other document to support calculations such as GIS information /8-20/, surveys and others /73/, AENOR deems that the project status is in compliance with applicable methodologies and implementation is in support of the VCS principles of Conservativeness and Accuracy.

Related to the compliance with the Monitoring Plan, section 4.3 of the MR provides information about the monitoring plan and actions carried out for the current monitoring period. AENOR reviewed the procedures put in place to perform the biomass inventories and deems that they are in accordance with the procedures described in the validated monitoring plan. AENOR checked the monitoring plan contained in the validated PD and compared it with the MR to verify whether there was any difference that would cause an increase in estimates of the GHG emission reductions in the current monitoring period. AENOR has confirmed that there are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodologies. Also, the project proponent effectively monitors the required parameters to determine the project's removals by sinks and emissions by sources as required by the monitoring plan and the applicable methodologies.

The parameters reported, including source, frequency and review criteria as indicated in the monitoring plan were verified to be correct and in line with the monitoring plan of the validated PD. As described in Section 3.3 of this verification report, the parameters $t^{[i-1]}$, $t^{[m]}$, $t^{[m-1]}$, $U_B^{[m]}$, $U_{EM}^{[M]}$ were monitored, in spite of not being included in the original monitoring plan of the validated PD. These parameters were mistakenly excluded from Section 3.3.2 Data and Parameters Monitored in the PD but have been monitored anyway from the beginning of the project. Necessary management system procedures including responsibility and authority of monitoring activities have been verified to be consistent with the PD. Knowledge of personnel associated with the project activity was also found to be satisfactory.

Regarding leakage emission, they account 0. In this regard, AENOR has checked evidence provided /4-6, 8-20, 69-70/ which confirms the information included in the MR. In addition, no biomass loss events were reported during this verification period.

There is no evidence of double counting or that the project has participated nor been rejected under any other GHG programs. GHG emission reductions or removals generated by the project are not included in an emission trading program or any other mechanism that includes GHG allowance trading. The project has not received nor sought any other form of environmental credit.

Regarding the sustainable development, the project contributes to 16 of the 17 sustainable development goals. AENOR interviewed different stakeholders and verified the claimed contributions of the project /25-49/.

The audit team reviewed the monitoring plan, its implementation, and its suitability. AENOR has carried out a series of reviews of material provided as evidence to demonstrate the implementation of the plan, as well as through interviews carried out with the different stakeholders. This information can be found in section 2.3 and 2.4 of the Verification Report.

There are no new methodology deviations for this monitoring period. The methodology deviations listed in section 3.2 of this report were validated during previous monitoring periods and are all the methodology deviations applied to the project in the current monitoring period.

Regarding the adequacy of implementation of the plan, all carbon calculations /4-6/, geodatabase /8-20/, monitoring report /2/ and its comparison with the previous verification period and the PD have been reviewed. The analysis carried out by AENOR reproduced all the calculations and parameters reported in both the Excel document and the monitoring report.

After a complete review of the different documents provided and the information gathered through the remote audit process, AENOR is able to confirm that the project implementation is in accordance with the validated PD. There are not material discrepancies between project implementation and the project description.

4.2 Safeguards

4.2.1 No Net Harm

The project was validated under the Climate, Community and Biodiversity Standards (CCB), in addition to the VCS, and the PD describes in its Section 2.1.11 the potential negative impacts of the project. It is important to note that the negative impacts listed are potential impacts commonly associated with similar projects and therefore, should not necessarily be considered as significant.

To mitigate these impacts, the PP works with the Community Resources Boards (CRB) and Village Action Groups (VAG) to distribute the benefits on the project in a transparent, participatory, and fair way.

Interviews with the local stakeholders demonstrated that the PP has properly identified the potential negative impacts and that reasonable steps have been taken to mitigate such impacts.

The project generates net positive impacts on the social and economic well-being of the local communities who derive livelihoods from the project area.

4.2.2 Local Stakeholder Consultation

The PP has been carrying out a consultation process since the inception of the project, starting with meetings with key government and community authorities. The process evolved from consultations at national level to consultation at village level. During this process, stakeholders were identified and free, prior, and informed consent (FPIC) was achieved.

The participatory structure for the management of the project, in which CRB and VAG have the competencies to determine the way to use the project funds for the financing of project activities in the relevant interest of each village, ensures that the opinion of stakeholders is duly taken into account.

Interviews with project beneficiaries confirmed to the audit team that these participatory bodies are democratically elected and that they act as an effective channel of communication between the PP and the local community stakeholders. Additionally, the PP provides capacitation to each member of the CRB in order to improve their performance in the development of their responsibilities.

According to the MR, monitoring results that point to serious concerns, such as encroachment within accounting and leakage areas are immediately reported once discovered to the relevant local stakeholders via the engagement teams. These critical results are then thoroughly investigated and discussed by local stakeholders and BCP. The results of the completed annual monitoring process are communicated to local stakeholders at the end of the monitoring period, soon after verification is completed. Since the results are tied to community benefits, a thorough explanation of monitoring results is communicated via the engagement teams to local stakeholders to substantiate their extent of the performance based benefits accrued.

Local stakeholders have been made fully aware of the requirements for an auditing team to verify the findings of the annual monitoring report, as is standard procedure, and what this auditing process will entail. Since the restrictions on travel placed by authorities in response to the global covid-19 pandemic the PP has obtained permission from Verra, local stakeholders and the auditors to conduct virtual field visits and interviews on-line, facilitated by the in-situ engagement teams. This process was communicated to the local stakeholders through formal notices to CFMGs and the Forestry Department and via both higher- and lower-level community engagement meetings.

The audit team was able to confirm through the interviews carried to stakeholders that they have been properly informed about project implementation, monitoring results and about the remote audit carried out by AENOR as VVB. None of the meetings and consultations with stakeholders, and points addressed therein, led to any resultant change of the project design during this monitoring period.

It is the opinion of AENOR, based on the information gathered during the audit process /52, 72-73/, that the PP communicates the necessary relevant information about the project implementation, risks, costs and benefits, relevant laws and regulations and the process of VCS Program to local stakeholders. All interviewed community members were aware of the nature of the project, its implementation, and its results, as well as the basics regarding the VCS program and the auditing process. Thus, the project proponent's responses are deemed appropriate.

4.3 AFOLU-Specific Safeguards

The MR describes activities carried out to mitigate risks to local stakeholders due to project implementation. The main affected stakeholders would be those poaching and illegal charcoal producers. The mitigation measure is the creation of jobs and livelihood alternatives. The project has created more than 60 community jobs, mainly for Community Scouts (CS). The CS role requires physical endurance, knowledge of bushcraft, and a willingness to spend one's work time in the outdoors. People with poaching experience are naturally inclined to be high performing CS with a change in mindset towards legally earned income and with the passing of training. Additionally, the improvement in quality of life (water, education, health services) and investment in food security and income diversification through project activities, reduce the risk for community members to engage in illegal poaching and charcoal production.

Regarding land tenure, the project has not altered property nor use rights. The land was previously in game management areas managed by CRB, which are still the responsible for the management. The PP has signed community forest management agreements with the CRB, in which their rights are recognized, including rights over carbon assets.

The PP has continuous communication with local stakeholders through on-field staff and the CRBs. All community forest management agreements signed include the description of the grievance mechanism, which is well known by community members. Additionally, a Stakeholder Grievance Response SOP has been developed and provided to all lead members of the engagement team and to all CRBs. Furthermore, all community meetings have an agenda item titled 'Grievances' to ensure that at each meeting there is a public opportunity to air grievances in a formal, more regular and logged forum. The MR reports 15 grievances. All of the grievances have been addressed and closed except one that is currently in the process. The PP has demonstrated that the grievances have been managed following the Stakeholder Grievance Response SOP and that the one left is in the way of being solved /21-23/.

The documentation reviewed and the interviews with local stakeholders confirmed that the project is mitigating its negative impacts. All interviewees have knowledge of the grievance and redress procedure and manifested that it is being properly implemented for the resolution of any conflict. The Stakeholder Grievance Response SOP and the Community Engagement SOP are efficient in their design and are aligned with the principles set in by the validated PD.

Thus, AENOR deems that the project proponent has taken the appropriate measures to ensure that the project has not created negative impacts on local stakeholders, or has put in place mitigation actions in such impacts where necessary.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

Procedures for quantifying the baseline emissions were conducted by the verification team in accordance with the methodology (VCS VM0009 v3.0 *Methodology for Avoided Ecosystem Conversion*). The verification team performed an intensive review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS documentation, methodology and associated tools, and the PD and MR. Further, the verification team reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by project proponents in spreadsheet format to ensure all formulas were accessible for review /4-6/. The verification team recalculated subsets of the analysis to confirm correctness. The PP also provided a step-by-step overview of select calculations to ensure the verification team understood the approach and could confirm its consistency with the methodologies, PD and MR. Where applicable, references for analysis methods or default values were checked against relevant scientific literature for best practice.

Baseline emissions

Section 5.1 of the MR and the calculation spreadsheet submitted to AENOR provide information related to the baseline emissions calculations. Baseline emissions ($E_{(B\Delta)}^{[m]}$) for the current monitoring period (01-January-2021 to 31-December-2021) were calculated using Equation F.15 and F.16 of VM0009 v3.0.

$$E_{B\Delta}^{[m]} = E_B^{[m]} - E_B^{[m-1]} \quad [F.15]$$

$$E_B^{[m]} = E_{B\,BM}^{[m]} + E_{B\,SOC}^{[m]} - C_{B\,SOC}^{[m]} - C_{B\,BGB}^{[m]} - C_{B\,DW}^{[m]} - C_{B\,WP}^{[m]} \quad [F.16]$$

Cumulative biomass baseline emissions were calculated using a logistic biomass emission model (BEM), validated in the PD, based upon a point interpretation of forest state in the reference area applying equation F.24.

$$E_{B\,BM}^{[m]} = BEM_{SP}(c_{P\,1\,BM}^{[m=0]}, c_{B\,BM}^{[m]}, t^{[m]}, x^{[m]}) = BEM_{U2,3/P1}(c_{P\,1\,BM}^{[m=0]}, c_{B\,BM}^{[m]}, t^{[m]}, x^{[m]}) \quad [F.24]$$

when $E_{B\,BM}^{[m]} \geq A_{P\,1}^{[m=0]}(c_{P\,1\,BM}^{[m=0]} - c_{B\,BM}^{[m]})$

then $E_{B\,BM}^{[m]} = BEM_{U2,3}(wc_{P\,1,2\,BM}^{[m=0]}, c_{B\,BM}^{[m]}, t^{[m]}, x^{[m]})$

when $E_{B\,BM}^{[m]} \geq A_{P\,1}^{[m=0]}c_{P\,1\,BM}^{[m=0]} + A_{P\,2}^{[m=0]}c_{P\,2\,BM}^{[m=0]} - c_{B\,BM}^{[m]}(A_{P\,1}^{[m=0]} + A_{P\,2}^{[m=0]})$

then $E_{B\,BM}^{[m]} = BEM_{U2,3/P1}(wc_{P\,1,2,3\,BM}^{[m=0]}, c_{B\,BM}^{[m]}, t^{[m]}, x^{[m]})$

...

$$E_{B\,BM}^{[m]} = A_{P\,1}^{[m=0]}c_{P\,1\,BM}^{[m=0]} + A_{P\,2}^{[m=0]}wc_{P\,1,2\,BM}^{[m=0]} + \dots + A_{P\,n}^{[m=0]}wc_{P\,i,n\,BM}^{[m=0]} - c_{B\,BM}^{[m]}(A_{P\,1}^{[m=0]} + A_{P\,2}^{[m=0]} + \dots + A_{P\,n}^{[m=0]})$$

Cumulative baseline emission from SOC were estimated using a soil emission model (SEM), applying equation F.29.

$$E_{B\ SOC}^{[m]} = SEM_{sp}(c_{P1\ SOC}^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]}) = SEM_{U2,3/P1}(c_{P1\ SOC}^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]}) \quad [F.29]$$

$$\text{when } E_{B\ SOC}^{[m]} \geq A_{P1}^{[m=0]}(c_{P1\ SOC}^{[m=0]} - c_{B\ SOC}^{[m]})$$

$$\text{then } E_{B\ SOC}^{[m]} = SEM_{U2,3/P1}(wc_{P1,2\ SOC}^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]})$$

$$\text{when } E_{B\ SOC}^{[m]} \geq A_{P1}^{[m=0]}c_{P1\ SOC}^{[m=0]} + A_{P2}^{[m=0]}c_{P2\ SOC}^{[m=0]} - c_{B\ SOC}^{[m]}(A_{P1}^{[m=0]} + A_{P2}^{[m=0]})$$

$$\text{then } E_{B\ SOC}^{[m]} = SEM_{U2,3/P1}(wc_{P1,2,3\ SOC}^{[m=0]}, c_{B\ SOC}^{[m]}, t^{[m]}, x^{[m]})$$

...

$$E_{B\ SOC}^{[m]} = A_{P1}^{[m=0]}c_{P1\ SOC}^{[m=0]} + A_{P2}^{[m=0]}wc_{P1,2\ SOC}^{[m=0]} + \dots + A_{Pn}^{[m=0]}wc_{P\ i,n\ SOC}^{[m=0]} - c_{B\ SOC}^{[m]}(A_{P1}^{[m=0]} + A_{P2}^{[m=0]} + \dots + A_{Pn}^{[m=0]})$$

Cumulative carbon not decayed in SOC used a decay emission model (DEM_{SOC}) as per equation F.33

$$C_{B\ SOC}^{[m]} = \sum_{i \in \mathcal{M}} DEM_{SOC}(E_{B\ \Delta\ SOC}^{[i]}, t^{[m]}, t^{[i-1]}) \quad [F.33]$$

Carbon not decayed in below-ground biomass used a decay emission model (DEM_{DW,BGB}), as per F.32 of VM0009 v3.0.

$$C_{B\ BGB}^{[m]} = \sum_{i \in \mathcal{M}} DEM_{DW,BGB}(E_{B\ \Delta\ BGB}^{[i]}, t^{[m]}, t^{[i-1]}) \quad [F.32]$$

Both cumulative baseline emissions from below-ground biomass at the end of the previous [m-1] and current monitoring period [m] were calculated according to equation F.30.

$$E_{B\ BGB}^{[m]} = \frac{r_{RS} E_{B\ BM}^{[m]}}{1 + r_{RS}} \quad [F.30]$$

The following table summarizes the calculated values of the baseline parameters:

Parameter	Equation used (VM0009 v3.0)	Value (tCO _{2e})
$E_{(B\Delta)}^{[m]}$ Baseline emissions for the current monitoring period	F.15	1,970,329
$E_{(B\Delta)}^{[m-1]}$ Cumulative baseline emissions from previous monitoring period	F.16	7,885,723
$E_{B\ BM}^{[m]}$ Cumulative baseline emissions from biomass at the end of the current monitoring period	F.24	8,867,097

Parameter	Equation used (VM0009 v3.0)	Value (tCO ₂ e)
$E_{B\ BM}^{[m-1]}$ Cumulative baseline emissions from biomass for all prior monitoring periods	F.24	7,092,673
$E_{(B\ \Delta SOC)}^{[m]}$ Baseline emissions from soil carbon in monitoring period	F.29	195,905
$C_{B\ SOC}^{[m]}$ Carbon not decayed in SOC at the end of the current monitoring period	F.33	730,035
$C_{B\ BGB}^{[m]}$ Carbon not decayed in BGB at the end of the current monitoring period	F.32	29,214
$E_{B\ BGB}^{[m]}$ Cumulative baseline emissions from below-ground biomass at the end of the current monitoring period	F.30	3,380,801
$E_{B\ BGB}^{[m-1]}$ Cumulative baseline emissions from below-ground biomass at the end of the previous monitoring period	F.30	3,351,588

AENOR has checked the calculations provided and confirmed that this amount of baseline emissions is in conformance and have followed the methodology in the validated PD.

Project emissions

Section 5.2 of the MR describes the calculations for the project emissions. Current emissions from changes in project carbon stocks were calculated with equation F.41 VM0009 v3.0.

$$E_{P\ \Delta}^{[m]} = E_{P\ \Delta\ BRN}^{[m]} + E_{P\ \Delta\ LS}^{[m]} + E_{P\ \Delta\ SF}^{[m]} + A_{PAA} \left(C_P^{[m-1]} - C_P^{[m]} \right) - C_{P\ \Delta\ WP}^{[m]} \quad [F.41]$$

The project accounting area stocks at the end of this monitoring period were equal to 251,566,794 tCO₂e compared to 228,116,334 tCO₂e at the end of the previous monitoring period. Thus, project emissions for this monitoring period were -41,326 tCO₂e.

AENOR has checked the calculations provided and confirmed that this amount of project emissions is in conformance and have followed the methodology in the validated PD.

Leakage

As reported in Section 5.3 of the MR, leakage emission for the current period ($E_{L\ \Delta}^{[m]}$) was calculated using equations F.44 and F.45 of VM0009.

$$E_{L\ \Delta}^{[m]} = E_L^{[m]} - E_L^{[m-1]} \quad [F.44]$$

$$E_L^{[m]} = E_{L\ ASF}^{[m]} + E_{L\ ASG}^{[m]} + E_{L\ ME}^{[m]} \quad [F.45]$$

Activity-shifting leakage in forested area is calculated through the validated leakage emissions model (LEM) validated in the PD, as per equation F.46. Market leakage is not accounted by the project.

$$E_{L\Delta}^{[m]} = LEM(c_P^{[m]}, c_B^{[m]}, p_{L\Delta}^{[m]}, t^{[m]}, x^{[m]}) \quad [F.46]$$

The following table summarizes the calculated values of the leakage parameters:

Parameter	Equation used (VM0009 v3.0)	Value
$E_{L\Delta}^{[m]}$ Emissions from leakage for the current monitoring period.	F.44	0
$E_{L\Delta}^{[m]}$ Cumulative emissions from activity-shifting leakage in forested areas at the end of the current monitoring period	F.46	0
$E_{L\Delta}^{[m-1]}$ Cumulative emissions from activity-shifting leakage in forested areas at the end of the previous monitoring period	F.46	0
$p_{L\Delta}^{[m]}$ Portion of leakage due to degradation in forest at the end of the current monitoring period	B.9	0.08
$p_{L\Delta}^{[m=0]}$ Portion of leakage due to degradation prior to first verification event	B.9	0.0815

The assessment of the leakage has been done with the full review of spreadsheets calculations /4-6/. Complementary, GIS material /8-20/ has been checked to be contrasted with the boundaries of the project and the spreadsheet calculation.

The calculations have been reproduced according to the methodology used, and the verification team obtained the same results. Thus, AENOR considers that the leakage calculations were done correctly by the PP.

AENOR has checked the calculations provided and confirmed that this amount of leakage emissions is in conformance and have followed the methodology in the validated PD.

Net GHG Emissions Reductions and Removals

As indicated in Section 5.4 of the MR, net GHG emission reductions were calculated using equation F.53 of VM0009 v3.0.

$$E_{\Delta GER}^{[m]} = E_{B\Delta}^{[m]} - E_{P\Delta}^{[m]} - E_{L\Delta}^{[m]} - E_U^{[m]} \quad [F.53]$$

The confidence deduction based on uncertainty in emissions models, carbon stock estimates in the project accounting area and carbon stock estimates in the proxy area ($E_U^{[m]}$) was calculated per equation F.57.

$$E_U^{[m]} = E_{B\Delta}^{[m]} \left[\frac{1.64}{E_{B\Delta}^{[m]} + A_{PAA}C_P^{[m]} + A_{PX}C_B^{[m]}} \sqrt{\left(U_{EM}^{[m]}\right)^2 + \left(U_P^{[m]}\right)^2 + \left(U_B^{[m]}\right)^2} - 0.15 \right] \quad [F.57]$$

The following table summarizes the uncertainty parameters calculated:

Parameter	Equation used (VM0009 v3.0)	Value (tCO ₂ e)
$E_U^{[m]}$ Confidence deduction based on uncertainty in emissions models, carbon stock estimates in the project accounting area and carbon stock estimates	F.57	0
$U_{EM}^{[m]}$ Total uncertainty in Baseline Emissions Models	F.14	14,616
$U_P^{[m]}$ Total uncertainty in project accounting area carbon stock estimate	B.10	20,390,394
$U_B^{[m]}$ Total uncertainty in proxy area carbon stock estimate	B.10	15,727

VCUs were estimated using equation F.55, in which emissions allocated to the buffer account are calculated using a non-permanence risk rating of 10% (see Section 4.6 of this report).

$$E_{\Delta NER}^{[m]} = E_{\Delta GER}^{[m]} - E_{BA}^{[m]} \quad [F.55]$$

The following table summarized the GHG emissions of the project calculated for the current monitoring period.

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)	Buffer pool allocation	VCUs eligible for issuance
2021	1,970,329	-41,326	0	1,929,003	192,901	1,736,102

The net anthropogenic GHG reduction due to the project activity for the monitoring period (01-January-2021 to 31-December-2021) amount to 1,929,003 tCO₂e. The total number of buffer credits that need to be deposited into the AFOLU pooled buffer account are 192,901 and the VCUs eligible for issuance are 1,736,102.

AENOR reproduced the calculations to achieve the same results and deems they are depicted clearly and correctly in the provided sheets. AENOR verification team was able to trace calculations directly from the field measurements. Formulae used are in compliance with the MR, the PD and the methodology, like the default values used to determine the parameters, are appropriate. Thus, the net amount of VCUs to be issued is accurate and realistic.

AENOR verified for the parameters available at validation, the values reported or the references to the documents where they are used or explained by reviewing, reproducing and crosschecking the evidence provided by the PP. AENOR checked that the values of these parameters are appropriately and correctly used in equations. Data and parameters available at validation are the ones stated in section 4.1 of the MR.

The data and parameters monitored to calculate the VCU to be issued are the ones stated in section 3.1.2 of the MR. AENOR checked that the list of parameters to be monitored was complete and consistent with information in the monitoring plan of the PD.

Regarding the accuracy of spreadsheet, formulae /4-6/, conversions and aggregations and consistent use of data and parameters, the PP elaborated a complete procedure to assure the accuracy and appropriateness of data. During the verification process, AENOR not only verified the spreadsheet calculation, data and parameters but also the AENOR team could verify that the PP conducted a rigorous QC/QA procedure of its field measurements and an assessment of uncertainty. Thus, AENOR deems the PP performed good practices in this assessment and concludes that GHG reductions were quantified correctly in accordance with the project description and applied methodology.

AENOR verified the consistency and accuracy of each parameter detailed in it Section 4 of the MR by crosschecking the information in the MR with the information in PD as well as checking values and reproducing the calculations in the spreadsheet calculation package (see Appendix 1) and did not find inconsistencies. Therefore, AENOR deems that values reported for the parameters are accurate and consistent.

The following tables summarize the data and parameters used by the PP to calculate the GHG emission reductions, which has been assessed by AENOR.

Data/Parameter available at validation	Value	Assessment procedure and result
α Combined effects of β and θ at the start of the historic reference period	0.2188	Value is consistent with validated PD /1/ Correctly inputted in the calculation spreadsheets. /4-6/
β Effect of time on the cumulative proportion of conversion over time	0.0003271	Value is consistent with validated PD /1/ Correctly inputted in the calculation spreadsheets. /4-6/
γ Time shift from beginning of historic reference period to project start date	10,589	Value is consistent with validated PD /1/ Correctly inputted in the calculation spreadsheets. /4-6/
λ_{SOC} Exponential soil carbon decay parameter	0.2	Value is consistent with validated PD /1/ Correctly inputted in the calculation spreadsheets. /4-6/
$\hat{\sigma}_{EM}$	0.4273	Value is consistent with validated PD /1/

Data/Parameter available at validation	Value	Assessment procedure and result
Estimated standard deviation of the state observations used to fit the logistic function		Correctly inputted in the calculation spreadsheets. /4-6/
B The set of all selected carbon pools in biomass. Is a subset of C	2	Correctly inputted in the calculation spreadsheets. /4-6/
C The set of all selected carbon pools	3	Correctly inputted in the calculation spreadsheets. /4-6/
J The set of all observations of conversion	13,194	Correctly inputted in the calculation spreadsheets. /4-6/
M The set of all monitoring periods	27	Correctly inputted in the calculation spreadsheets. /4-6/
A_{PAA} Area of project accounting area	536,225	Value is consistent with validated PD and GIS data. /8-20/ Correctly inputted in the calculation spreadsheets. /4-6/
A_{PX} Area of proxy area	3,840	Value is consistent with validated PD, previous MR, and GIS data. /8-20/ Correctly inputted in the calculation spreadsheets. /4-6/
n_d Number of spatial points in the reference area	2,600	Value is consistent with validated PD, previous MR and VR /7/, and GIS data. /8-20/ Correctly inputted in the calculation spreadsheets. /4-6/
o_i State observation for the sample point in the reference area	0 or 1	Correctly inputted in the calculation spreadsheets. /4-6/
P_{LME} Portion of leakage related to market	0	Value is consistent with validated PD. /1/
q Lag between start of degradation and conversion	620	Value is consistent with validated PD. /1/ Correctly inputted in the calculation spreadsheets. /4-6/
r_{RS}	0.54	Value is consistent with validated PD and original source (Chidumayo, E. N. 2013). /69/

Data/Parameter available at validation	Value	Assessment procedure and result
Expansion factor for above-ground biomass to below-ground biomass (root/shoot ratio)		Correctly inputted in the calculation spreadsheets. /4-6/
r_U Onset proportion of conversion immediately adjacent to project area	0.084 for PAI1 and 0.163 for PAI2	Value is consistent with validated PD. Correctly inputted in the calculation spreadsheets. /4-6/
t Time since project start date	2,070	Calculation reproduced. /4-6/ Value correctly estimated.
t_i The point in time of the observation made at point i	1-11341	Correctly inputted in the calculation spreadsheets. /4-6/
t_{PL} Length of project crediting period	10,957	Value is consistent with validated PD. Correctly inputted in the calculation spreadsheets. /4-6/
w_i Weight applied to the ith sample point in the reference area	Multiple values	Calculation reproduced. Values correctly estimated. /4-6/
x_i y_i Latitude and Longitude of the i^{th} sample point	Varies	GIS evidence /8-20/

Data/Parameter monitored	Value	Assessment procedure and result
$A_{P_1}^{[m=0]}$ Area of project accounting area stratum 1 prior to first verification event	485,495	Value is consistent with validated PD and GIS data. /8-20/ Correctly inputted in the calculation spreadsheets. /4-6/
$c_B^{[m]}$ Baseline carbon stocks at the end of the current monitoring period	15.6	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{B\ BGB}^{[m]}$ Carbon not decayed in BGB at the end of the current monitoring period	24,191	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{B\ SOC}^{[m]}$	727,715	Calculation reproduced. /4-6/

Data/Parameter monitored	Value	Assessment procedure and result
Carbon not decayed in SOC at the end of the current monitoring period		Value correctly estimated.
$c_{B\ b}^{[m]}$ Baseline scenario average carbon stock in selected carbon pools	15.6	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{B\ BM}^{[m]}$ Baseline carbon stocks in biomass at the end of the current monitoring period	15.6	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{B\ SOC}^{[m]}$ Baseline soil carbon stocks at the end of the current monitoring period	210.6	Calculation reproduced. /4-6/ Value correctly estimated.
$c_P^{[m]}$ Project carbon stocks at the end of the current monitoring period	236.2 in intact forest and 15.2 in encroached forest	Calculation reproduced. /4-6/ Values correctly estimated.
$c_P^{[m-1]}$ Project carbon stocks at the beginning of the current monitoring period	236.2 in intact forest and 15.2 in encroached forest	Calculation reproduced. /4-6/ Values correctly estimated.
$c_P^{[m=0]}$ Project carbon stocks prior to first verification event	236.2	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{P\ 1\ BM}^{[m=0]}$ Project carbon stocks in stratum 1 prior to first verification event	236.2	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{P\ BM}^{[m=0]}$ Project carbon stocks in biomass prior to first verification event	114,668,494	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{P\ b}^{[m]}$ Average carbon in biomass in the project accounting area	236.2	Calculation reproduced. /4-6/ Value correctly estimated.
$c_{P\ 1\ b}^{[m=0]}$ Average carbon in biomass for project accounting area stratum 1	236.2	Calculation reproduced. /4-6/ Value correctly estimated.

Data/Parameter monitored	Value	Assessment procedure and result
$c_{P\ SOC}^{[m=0]}$ Project soil carbon stocks prior to first verification event	235.2	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{\Delta GER}^{[m]}$ GERs for the current monitoring period	1,929,003	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{\Delta GER}^{[i]}$ GERs for monitoring period i	92,958,817	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{\Delta NER}^{[i]}$ NERs for monitoring period i	83,591,902	Calculation reproduced. /4-6/ Value correctly estimated.
$E_B^{[m]}$ Cumulative baseline emissions at the end of the current monitoring period	9,856,052	Calculation reproduced. /4-6/ Value correctly estimated.
$E_B^{[m-1]}$ Cumulative baseline emissions at the beginning of the current monitoring period	7,885,723	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{B\ \Delta}^{[m]}$ Change in baseline emissions	1,970,329	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{B\ \Delta BGB}^{[i]}$ Change in baseline emissions from below-ground biomass during monitoring period i	3,372,898	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{B\ \Delta SOC}^{[m]}$ Baseline change in emissions from soil carbon	195,905	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{B\ \Delta SOC}^{[i]}$ Baseline emissions from soil carbon in monitoring period i	195,905	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{B\ BGB}^{[m]}$ Cumulative baseline emissions from below-ground biomass at the end of the current monitoring period	3,348,707	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{B\ BGB}^{[m-1]}$ 	2,685,681	Calculation reproduced. /4-6/ Value correctly estimated.

Data/Parameter monitored	Value	Assessment procedure and result
Cumulative baseline emissions from below-ground biomass at the beginning of the current monitoring period		
$E_{BBM}^{[m]}$ Cumulative baseline emissions from biomass at the end of the current monitoring period	8,867,097	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{BSOC}^{[m]}$ Cumulative baseline emissions from soil carbon at the end of the current monitoring period	988,955	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{BSOC}^{[m-1]}$ Cumulative baseline emissions from soil carbon at the beginning of the current monitoring period	793,050	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{BA}^{[m]}$ Cumulative emissions allocated to the buffer account at the end of the current monitoring period	-973,995	Consistent with Non-permanence risk report. /3/ Calculation reproduced. /4-6/ Value correctly estimated.
$E_L^{[m]}$ Cumulative emissions from leakage at the end of the current monitoring period	0	Calculation reproduced. /4-6/ Value correctly estimated.
$E_L^{[m-1]}$ Cumulative emissions from leakage at the beginning of the current monitoring period	0	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{L\Delta}^{[m]}$ Change in emissions due to leakage	0	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{LASF}^{[m]}$ Cumulative emissions from activity-shifting leakage in forested strata at the end of the current monitoring period	0	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{LME}^{[m]}$ Cumulative emissions from market leakage at the end of the current monitoring period	0	Calculation reproduced. /4-6/ Value correctly estimated.
$E_{P\Delta}^{[m]}$ Change in project emissions	-41,326	Calculation reproduced. /4-6/ Value correctly estimated.

Data/Parameter monitored	Value	Assessment procedure and result
$E_{P\Delta BRN}^{[m]}$ Cumulative project emissions due to burning at the end of the current monitoring period	0	Calculation reproduced. /4-6/ Value correctly estimated.
$E_u^{[m]}$ Cumulative confidence deduction at the end of the current monitoring period	0	Calculation reproduced. /4-6/ Value correctly estimated.
$P_{L\ DEG}^{[m]}$ Portion of leakage due to degradation at the end of the current monitoring period	0.08	Calculation reproduced. /4-6/ Value correctly estimated.
$P_{L\ DEG}^{[m=0]}$ Portion of leakage due to degradation prior to first verification event	0.0815	Consistent with previous MR. Correctly inputted in the calculation spreadsheets. /4-6/
$t^{[i-1]}$ Time from the project start date to beginning of monitoring period i	0	Correctly inputted in the calculation spreadsheets. /4-6/
$t^{[m]}$ Time from project start date to end of current monitoring period	PAI1 = 2,436; PAI2 = 223	Calculation reproduced. /4-6/ Value correctly estimated.
$t^{[m-1]}$ Time from project start date to beginning of current monitoring period	PAI1 = 2,071; PAI2 = 0	Calculation reproduced. /4-6/ Value correctly estimated.
$U_B^{[m]}$ Total uncertainty in proxy area carbon stock estimate	15,727	Calculation reproduced. /4-6/ Value correctly estimated.
$U_{EM}^{[M]}$ Total uncertainty in Baseline Emissions Models	14,616	Calculation reproduced. /4-6/ Value correctly estimated.
$U_P^{[m]}$ Total uncertainty in project accounting area carbon stock estimate	20,390,394	Calculation reproduced. /4-6/ Value correctly estimated.

AENOR did not find inconsistencies between the PD, technical annex, monitoring report and spreadsheet calculation.

After a deep and thorough review and reproduction of calculations and the corresponding tracks to the other spreadsheets, AENOR deems the parameters monitored and available at validation are correct, reliable, and consistent. Information in the monitoring report is in compliance with the PD, the calculations provided and the applicable methodology. Thus, the results showed in the monitoring report are reliable, consistent, and accurate.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

The data and parameters used to determine GHG emission reductions and removals are listed in Section 4 of the MR.

During AENOR's verification, the evidence provided by the PP was enough in both quantity and quality to support the determination of GHG emission removals reported by the project.

Quality assurance and control is an essential part of company procedures in order to assure the accuracy of inventory data, modeling results, and carbon accounting. Quality assurance procedures are done in order to minimize and correct any potential data transcription, calculation, or formatting errors that may result in inaccurate carbon accounting results.

The majority of field data is collected using digital tools on smart phones and are either directly loaded to the database or saved on GDrive where it is checked and then transferred to the database. All data submitted to the central database is subjected to quality control by appropriate staff. The PP has developed SOP and Field manuals which /51/ covers all aspects related to carbon inventory. Spot checks and internal audits are conducted to make sure all data collection is carried out following the standards.

In accordance with VCS, the PP is committed to storing all project data in a secure and retrievable manner for at least two years after the end of the project crediting period. In order to facilitate project management and long-term accounting, all primary data outputs supporting annual verification including the spatial database is stored and maintained.

Roles and responsibilities are clearly identified in the MR. QA/QC procedures were developed by the PP for maintaining consistency and quality of field inventories over time. Interviews with the PP and inspection of data and results demonstrated that the PP possess all of the competencies required for reporting of GHG emissions removals in an accurate way.

Data presented to the audit team were clear and coherent and processing steps could be traced to the corresponding sections of the methodology and monitoring plan with transparency.

Above procedures to ensure this are described in Section 4 of the MR, in terms of general QA/QC of the monitoring plan and specific QA/QC procedures applied to data and parameters monitored.

Throughout the verification, the PP demonstrated a commitment toward conservativeness and took all measures appropriate to ensure the reliability of evidence provided. Interviews conducted (oral evidence) are outlined in Section 2.4, and the final documents received from the PP supporting the determination of GHG reductions can be viewed in Appendix 1.

AENOR deems that the PP performed good practices in this assessment and concludes that GHG reductions were quantified correctly in accordance with the PD and applied methodology, and that the evidence is sufficient in quantity and appropriate in quality to determine the GHG reductions of the project.

4.6 Non-Permanence Risk Analysis

PP has elaborated a VCS Non permanence Risk Report (NPRR) for the validation process according to the AFOLU Non-Permanence Risk Tool v4.0. As required by the VCS Program, the non-permanence risk rating is reassessed for each verification event.

Below, it is explained the assessment and the issues raised on regard the non-permanence risk rating determined by the PP in the NPRR.

Risk factor	Risk Rating	Assessment
Internal Risks		
Project Management	-4 (total may be less than zero)	a) to d) Not applicable Risk rating=0 is justified. e) Management team includes individuals with significant experience in AFOLU project design and implementation, carbon accounting and reporting Risk rating=-2 is justified. f) The LCFP has a basic adaptive management plan in place Risk rating=-2 is justified.
Financial viability	0 (total may not be less than zero)	a) to c) Not applicable Risk rating=0 is justified. d) Project cash flow breakeven point is less than 4 years from the current risk assessment. Risk rating=0 is justified. e) to g) Not applicable Risk rating=0 is justified. h) Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven Risk rating=0 is justified. i) Not applicable Risk rating=0 is justified.

Risk factor	Risk Rating	Assessment
Opportunity Cost	-2 (total may be less than zero)	a) to c) Not applicable Risk rating=0 is justified. d) NPV from the most profitable alternative land use activity is expected to be between 20% more than and up to 20% less than from project activities; or where baseline activities are subsistence-driven, net positive community impacts are demonstrated Risk rating=0 is justified. e) to f) Not applicable Risk rating=0 is justified. g) Project proponent is a non-profit organization Risk rating=0 is justified. h) Project is protected by legally binding commitment to continue management practices over the length of the project crediting period. The LCFP is within Game Management Areas, which have provisions for management and conservation of wildlife habitat, guided by the Wildlife Act of Zambia. Risk rating=-2 is justified. i) Project is protected by legally binding commitment to continue management practices that protect the credited carbon stocks over at least 100 years Risk rating=0 is justified.
Project Longevity	15 (total may not be less than zero)	a) Not applicable Risk rating=0 is justified. b) 30-year project longevity with Legal Agreement or requirement to continue management practice. Risk rating=15 is justified.
External Risks		
Land Tenure and resources access/impact	0 (total may not be less than zero)	a) Not applicable Risk rating=0 is justified. b) Ownership and resource access/use rights are held by different entities. Risk rating=2 is justified. c) to e) Not applicable Risk rating=0 is justified. f) The resources in the Project Area are guided by the 2015 Wildlife Act and 2015 Forest Act. The Project Area is in Game Management Areas, that is an area of land declared under section twenty-

Risk factor	Risk Rating	Assessment
		eight of the Wildlife Act 2015; “28. (1) The 2015 Forest Act states that 3. The ownership of all trees standing on, and all forest produce derived from, customary areas, National Forests, Local Forests, State Land, botanical reserves and open areas is vested in the President, on behalf of the Republic, until lawfully transferred or assigned under this Act or any other written law. To harmonise and safeguard these property rights and guarantee the project permanency the Department of National Parks and Wildlife (DNPW), Forestry Department and Traditional Authorities have been consulted. letter of support and Memorandums of Understanding were signed with the Government departments. Importantly, based on the Forest Act of 2015 there are signed agreements with all community groups and Community Forest Management Groups have formally been established. Risk rating=-2 is justified. g) Not applicable. Risk rating=0 is justified.
Community engagement	-5 (total may be less than zero)	a) to b) Not applicable. Risk rating=0 is justified. c) The monitoring report covering this monitoring period lists all activities that are having positive community impacts and BCP has consulted extensively with all community stakeholders in order to understand the drivers of deforestation within the project zone and to formulate the most efficient mitigation strategy and beneficial projects. The project will certainly have positive socio-economic benefits and is being validated under the CCB Standards Risk rating=-5 is justified.
Political Risks	2 (total may not be less than zero)	a) to e) Zambia presents -0.35 according to the World Bank Institute’s Worldwide Governance Indicators. AENOR verified the value and reliability of source. Risk rating=4 is justified. f) The country is implementing REDD+ Readiness activities: it is a UN-REDD Programme Partner Country Risk rating=-2 is justified.
Natural risks		

Risk factor	Risk Rating	Assessment
Fire Risk	LS*M=0.5	The likelihood of a natural fire is every 10-25 years affecting less than 5 % of carbon stocks Thus LS= 1 is reasonable. Mitigation (M) measures: BCP has implemented a fire management system on the RED+ zones. In the Community Forest Management Agreements (section 5), CRBs are obligated to help in fire management within the REDD+ zones. Fire management is done through introducing a system of firebreaks and controlled, rotational early burns. BCP also encourages fuel-reducing seasonal bio-enterprises, such as the harvest of thatch or grass from the REDD+ zones by women's groups for urban markets. BCP monitors fire hot spots detected by VIIRS and MODIS satellites. Then, M=0.5 is reasonable.
Pest and disease outbreaks	LS*M=0	This risk is considered unlikely, there are no records of disease or pest outbreaks causing any significant impacts (>5%) to carbon stocks in Miombo woodlands. No known literature has documented forest disturbance from pests and diseases in the project area. Thus LS= 0 is reasonable. Mitigation (M) measures: Not applicable.
Extreme weather	LS*M=0	Zambia is not impacted by hurricanes. Droughts could possibly be considered an extreme weather phenomenon. However, this risk is considered unlikely and there are no records of drought causing any significant impacts (>5 %) to carbon stocks in Miombo woodlands. No known literature has documented forest disturbance from extreme weather conditions in the project area. Thus LS= 0 is reasonable. Mitigation (M) measures: Not applicable.
Geological risks	LS*M=0	Zambia is geologically stable and the risk of earthquakes and volcanoes occurring is unlikely. Thus LS= 0 is reasonable. Mitigation (M) measures: Not applicable
Other natural risks (elephant impacts)	LS*M=0	It is unlikely that elephants will increase to such high numbers as to actually threaten the existence of the project. A simulation model based on studies of Miombo in Zimbabwe have found that elephants at a density of >2 per km² can convert woodland to shrubland in a 10-year period and at densities around 0.27 per km² it will take 120 years to convert to shrubland (Mapaure 2013). Elephants do not occur at such densities in the project area. Thus LS= 0 is reasonable. Mitigation (M) measures: Not applicable
OVERALL RISK RATING=9+0+0.5=10. Then an overall risk rating of 10% is considered.		

AENOR has checked that information provided in the NPRR for the monitoring period is consistent with supporting documents provided. The assumptions and justifications provided to determine the risk rating of each risk factor are elaborated and they are based on provided documents using conservative assessments. AENOR deems that information provided is reliable and appropriate from reliable sources, thus, the overall risk rating is credible and realistic. Thus, the overall risk rating of 10% is credible and realistic.

5 VERIFICATION CONCLUSION

AENOR has verified that the Luangwa Community Forests Project is in compliance with the Verified Carbon Standard version 4.3 without qualifications or limitations. The project has been implemented in accordance with the validated Project Description and its validated variations. The project complies with the validation and verification criteria for projects set out in VCS Version 4, without any qualification or limitation.

AENOR is able to issue a positive verification opinion for the 1,929,003 tCO₂e of verified emissions reductions, as reported in the Monitoring Report version 1.7 dated on 1-July-2022.

The verification assessment covered the monitoring period from 01-January-2021 to 31-December-2021 and verified that calculated emission reductions and/or removals were achieved during the monitoring period with a reasonable level of assurance. The overall non-permanence risk rating was 10%. The net change in carbon stocks has been estimated in 1,929,003 tCO₂. Therefore, the total number of credits to be deposited in the buffer account is 192,901 VCUs and the total VCUs eligible for issuance are 1,736,102 VCUs.

Verification period: From 01-January-2021 to 31-December-2021

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

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)	Buffer pool allocation	VCUs eligible for issuance
2021	1,970,329	-41,326	0	1,929,003	192,901	1,736,102

Net change in carbon stocks: 1,929,003 tCO₂e.

Overall non-permanence risk rating: 10%

VCUs buffer to be deposited: 192,901 VCUs

Total VCUs eligible for issuance: 1,736,102 VCUs

Date: 22 July 2022



Lead Auditor
Juan Carlos Gómez

APPENDIX 1: LIST OF EVIDENCES PROVIDED

1. PD v2
2. MR initial version v1 final version v1.7
3. Non-permanence risk v1.2
4. Spreadsheet LCFP_ER_Calc_M4_FirstActivityInstance v3
5. Spreadsheet LCFP_ER_Calc_M4_SecondActivityInstance v3
6. Spreadsheet master_biomass_summary_project_updated_with_soil_M4 v2
7. Previous verification report v1.3
8. GIS Forest Areas LCFP PAI2
9. GIS Accounting Area LCFP PAI2
10. GIS Kazumba AA Second Instance
11. GIS Mpanshya Corridor AA Second Instance
12. GIS Nyakolwe AA Second Instance
13. GIS Nyamvu AA Second Instance
14. GIS 2021 Leakage
15. GIS LCFP Proxy area
16. GIS LCFP Instance1 Project area
17. GIS LCFP proxy plots
18. GIS LCFP Instance1 Accounting Area
19. GIS LCFP soil proxy plots
20. GIS deforestation M4
21. 2021 Mfuwe grievance register
22. 2021 Chinyunyu grievance register
23. 2021 Nyimba grievance register
24. TOR Sustainable Agriculture activities
25. LCFP bee farmer data
26. HR monthly IM reporting tool 2021_December_2021.xlsx
27. 20220214_BCP Community Investment Cumulative_TN approved.xlsx
28. 20220222_Household Mapping Summary_DM_FINAL.xlsx
29. 2021 Carbon fees Proof_Of_Payment(POP)s
30. 20220222_Household Mapping Summary_DM_FINAL.xlsx
31. 20220214_BCP Community Investment Cumulative_TN approved.xlsx
32. Mfuwe_Follower_Farmer_Training_Attendance_Registers
33. Nyimba_Follower Farmer Training Attendance lists 2021
34. Nyimba_Lead_Farmer_Trainings_Attendance-Registers
35. Chinyunyu_Climate Smart Agriculture training report.docx.pdf
36. Mfuwe_Follower Farmer training report .pdf
37. Mfuwe_Lead farmer Climate Smart Agriculture training report.pdf

38. Mfuwe_Lead farmer Climate Smart Agriculture training_attendace_registers.pdf
39. Nyimba_Follower farmers training report 2021.pdf
40. Nyimba_Lead farmer Climate Smart Agriculture training report.pdf
41. Rufunsa_Lead farmer Climate Smart Agriculture training report.pdf
42. BCP 2021 Harvest Report.pdf
43. LCFP_Community Needs Assessment Report.pdf
44. LCFP_SMART_REPORT_2021 .pdf
45. DNPW_GIS_Laptops_Delivery_Note.pdf
46. FD_GIS_Equipment_Delivery_Note.pdf
47. GRZ_GIS_VCS Training_Report v2.pdf
48. Kamphasa_Solar_Project.jpg
49. LL_BCP_BM_AnnualReport2021_V1.pdf
50. SOP and Field Manuals
51. Poultry and goat rearing facilities were developed to support improved income from livestock production
52. 2021 Mfuwe, Chinyunyu, Nyimba Engagement tracker
53. BCP SOIL ANALYSIS REPORT.pdf
54. Community camera trap project beneficiaries list
55. Jumbe Primary School Solar Panels Project photos
56. Luembe Schools Rehabilitation photos
57. Mabwe (Nsefu) sanitation and VIP latrine projects commissioning photos
58. Malama classroom video
59. Malama health outreach center photo
60. Msoro - Pendwe Village Access Problem bridge photo
61. Nyalugwe improved village chicken project photos and video testimony
62. Nyalugwe_hammer_mill video testimony
63. Nyalugwe_schools_construction photo
64. Sandwe 1X3 Classroom Block Commissioning photos
65. Sustainable Agriculture training attendance list
66. Construction of a Mothers Shelter (outreach centre completed in Kalengo VAG) photos
67. Construction of School Infrastructure photo
68. Improved water supply (19 boreholes in Luembe Chiefdom and 11 boreholes in Sandwe Chiefdom provided) photos
69. Chidumayo_2013_allometry_paper.pdf
70. Mugasha_et_al_2013_Miombo_Allometry.pdf
71. District Agreements Lusangazi, Mambwe, Nyimba, Rufunsa
72. 2021 Engagement tracker Chinyunyu, Mfuwe, Nyimba
73. Written and video interviews
74. UNIQUE drivers and agents study

APPENDIX 2: CLARIFICATIONS AND CORRECTIVE ACTIONS REQUESTED

Clarification Requests (CLs)

CL	01	Date: 10/03/2022
Description of CL		
Provide evidence of the following: 1. Appendix B documents as folder is empty 2. 2016-2021_deforestation as folder is empty 3. District agreements with the Department of Agriculture from 2020 4. Training of farmers during the monitoring period 5. March 2021 Specific Partnership Agreement with Nature's Nectar 6. Distribution of beehives during the monitoring period 7. Kg of honey harvested and money generated by farmers during the monitoring period 8. School renovation in Kalongo VAG and school block completion in Kasinga VAG 9. Outreach centre completion in Kalongo VAG 10. Banana boat purchase in Mbilisao VAG and 80 treadle pumps in Shikabeta Chiefdom 11. Provision of 19 boreholes in Luembe chiefdom and 11 boreholes in Sandwe chiefdom 12. Infrastructural projects initiated during monitoring period 13. Leakage area for project instance 2 14. Clearing in 2021 (ha)		
Project participant response		Date: 29/03/2022
Please note that in order to access all the supporting documents along with the appendixes can be found in the following link https://drive.google.com/drive/folders/1C2HWW-xHDr6hWVA5Bc49LoVILC995JSW 1. Appendix B (ImplementationStatusSupportDocuments) has been populated with the correspondent documents 2. Folder 2016-2021 has been populated with the correspondents .shp files. Please see 2022_M4\AppendixI_Spatial\2016-2021_deforestation . Note for the 2021 deforestation evidence refer to the files "LCFP_defM4_clipped" 3. The requested documentation can be found 2022_M4\M4_Audit_Findings_Round_1\CL#1\01_Districts_agreement 4. Support documentation can be found in the folder 2022_M4\LCFP_M4_AuditEvidenceRequests\Training of farmers in conservation farming 5. Nectar partnership agreement can be found in the folder \2022_M4\LCFP_M4_AuditEvidenceRequests\Improved Apiculture techniques under the name of "NN_BCP_Partnership_Agreement- FINAL-Signed-Signed"		

6. The requested information can be found in \2022_M4\LCFP_M4_AuditEvidenceRequests\Improved Apiculture techniques under the label "20220110_Beehive and Farmer Data_Dec21.xls" 7. The requested information can be found in \2022_M4\LCFP_M4_AuditEvidenceRequests\Improved Apiculture techniques under the name of "NN + BCP Production&Purchasing 2021.xls" 8. The requested information can be found in folder \2022_M4\LCFP_M4_AuditEvidenceRequests\Construction of School Infrastructure 9. The requested evidence can be found in \2022_M4\LCFP_M4_AuditEvidenceRequests\Construction of a Mothers Shelter (outreach centre completed in Kalengo VAG) 10. The requested evidence can be found in \2022_M4\LCFP_M4_AuditEvidenceRequests\Support to delivery of Community Social Services (banana boat purchased in Mbilisao VAG, 80 treadle pumps supplied in Shikabeta Chiefdom) 11. The requested evidence can be found in \2022_M4\LCFP_M4_AuditEvidenceRequests\Improved water supply (19 boreholes in Luembe Chiefdom and 11 boreholes in Sandwe Chiefdom provided). Please note that it was not possible to visit all the boreholes due problems related to accessing some of the chiefdoms. 12. The requested evidence can be found in \2022_M4\LCFP_M4_AuditEvidenceRequests\Infrastructure Development Projects in (Table 9 and 10) 13. The leakage areas for both project instances are described by the shapefile that can be found in AppendixI_Spatial\20211114_LCFP_LeakageArea.shp 14. The requested evidence can be found in G:\Shared 2022_M4\M4_Audit_Findings_Round_1\CL#1\03_Deforestation_2021	
Documentation provided by the Project Participant	
-	
VVB Assessment	Date: 06/04/2022
1. Evidence has been provided and deemed correct 2. Evidence has been provided and deemed correct 3. Evidence for Mambwe and Nyimba have been provided and deemed correct Agreements of Rufunsa and Lusangazi do not match date of the MR and evidence provided Clarify why Lundazi has not been renewed 4. Values in table 4 do not match evidence provided 5. Evidence has been provided and deemed correct 6. Evidence has been provided and deemed correct 7. Evidence has been provided and deemed correct 8. Evidence has been provided and deemed correct 9. Evidence has been provided and deemed correct 10. Evidence has been provided and deemed correct 11. Evidence has been provided and deemed correct 12. Evidence has been provided and deemed correct 13. Evidence provided does not consider leakage for project instance 2 14. Evidence has been provided and deemed correct	

15. Provide evidence of values stated in table section 1.11	
Project participant response	Date: 11/04/2022
3. The MR has been updated with correct agreement dates for both rufunsa and Lusangazi districts. Secondly, Lundazi has not been renewed because we no longer have project areas in Lundazi district. This is due to district administrative boundary changes that happened in 2020 i.e creation of new districts that resulted in having project areas that were initially in Lundazi to be located to newly created districts called Lumezi district. We have therefore also included Lumezi district and uploaded the MoU in the CL#1 folder in the 2nd round findings folder. 4. Table 4 has been updated with correct numbers and evidence has been uploaded in the CL#1 folder in the M4_Audit_Findings_Round_2 folder 13. The evidence provided is for both the 1st and 2nd instance as they share common activity shifting leakage, proxy and reference areas. Please see the the LCFP PD, i.e Figure 11: Common reference area, proxy area, and activity-shifting leakage area (PDR.16) on page 44. That shows common activity shifting leakage, proxy and reference area for the first instance and future instances. 15. Evidence for the 2021 contributions in SDG table have been uploaded in the CAR#1 folder. Documents Provided a. 20220222_Household Mapping Summary_DM_FINAL.xlsx b. 20220214_BCP Community Investment Cumulative_TN approved.xlsx c. Carbon fees POPs d. FD_GIS_Equipment_Delivery_Note.pdf and DNPW_GIS_Laptops_Delivery_Note.pdf - e. GRZ_GIS_VCS Training_Report v2.pdf f. BCP SOIL ANALYSIS REPORT.pdf g. 20220113_ESMS_SOP001 Waste Management_Final.pdf h. BCP 2021 Harvest Report.pdf i. HR monthly IM reporting tool 2021_December_2021.xlsx j. Pictures of hand over ceremony k. Engagement Trackers for community meetings with links to the VAG meeting minutes as evidence for REDD+ topics and explanations to community members at VAG level meetings. l. LL_BCP_BM_AnnualReport2021_V1.pdf m. LCFP_Bee_Farmer_Data.xlsx n. LCFP_Community Needs Assessment Report.pdf o. Poultry.JPG p. LCFP_SMART_REPORT_2021.pdf	
VVB Assessment	Date: 20/05/2022
3. Lusangazi has been updated and deemed correct. Rufunsa states April whereas on the evidence is from May. Please include this clarification of district change Lundazi and Lumezi on the MR. 4. Table 4 has been updated and deemed correct	

13. Evidence has been provided and deemed correct	
15. Evidence has been provided and deemed correct	
Project participant response	Date: 01/07/2022
3. Dates over the Rufunsa agreement has been corrected to May as requested. In addition, the following clarification has been included in the MR4 "To be noted that the Lundazi district has not been renewed due to the absence of project areas within the Lundazi district itself. As a direct consequence of district administrative boundary changes occurred in 2020 (i.e creation of new districts and therefore modification of previous boundary extents) of project areas that were initially in located in Lundazi district where were relocated to newly created districts named Lumezi district."	
VVB Assessment	Date: 05/07/2022
Evidence has been provided and deemed correct. Therefore CL 1 is closed.	

CL	02	Date: 10/03/2022
Description of CL		
Clarify the following:		
1. Frequency of aerial monitoring of encroachment along project boundaries 2. Calculation of forest area and accounting area 3. Source of data from table 16		
Project participant response		Date: 29/03/2022
1. It has conducted a total of 48.8 hours of aerial patrols in 2021. Please note that between March and December there has been some down time due to the unavailability of pilots and planes 2. Please note that additional information can be found in the PD page 113, section 1.1.2 baseline scenario. Please see CL#1 point 13 to allocate the PD document. 3. Table 16 was generated with data composed in file 2022_M4\AppendixP_BiomassProt under the name of "20211122_master_biomass_summary_project_updated_with_soil_M4". Some of the values were not correctly transcribed from the spreadsheet and have now been corrected.		
Documentation provided by the Project Participant		

20220413_LCFP_ProjectActivityInstance2_ForestAreas.dbf 20220413_LCFP_ProjectActivityInstance2_ForestAreas.proj 20220413_LCFP_ProjectActivityInstance2_ForestAreas.shx 20220413_LCFP_ProjectActivityInstance2_ForestAreas.shp	
VVB Assessment	Date: 06/04/2022
1. Clarification has been provided and deemed correct 2. Provide evidence of forest area and accounting area values in table 11 3. Values have been updated and deemed correct.	
Project participant response	Date: 14/04/2022
2. For PA12 the shapefiles have been included in the evidence folder and two corrections were applied to Table 1 for Mpanshya Wildlife Corridor and Table 2 where the forest area for Nyamvu Game Ranch was changed to match that of the shapefiles provided.	
VVB Assessment	Date: 20/05/2022
2. Values of forest area for Nyamvu and Mpanshya are not in accordance with evidence provided	
Project participant response	Date: 01/07/2022
2 As requested a corrected version of the Nyamyu and Mpanshya forest cover has been provided under the name of "20220505_LCFP_ProjectActivityInstance2_ForestAreas"	
VVB Assessment	Date: 05/07/2022
Clarification has been provided and deemed correct. Therefore CL 2 is closed.	

Corrective Actions Requests (CARs)

CAR	01	Date: 10/03/2022
Description of CAR		
The following sections of the MR have not been completed in accordance with the VCS template: 1. The latest available VCS format v4.1 has not been used 2. Section 1.1 is more than one page		

3. Section 2.2 does not include details on any updates to the project design due to ongoing communication or justify why updates are not appropriate 4. Section 3.2.2 does not “Identify whether the deviation impacts the applicability of the methodology, additionality or the appropriateness of the baseline scenario and provide an explanation of the outcome.” 5. Section 4.2 row purpose of data in some parameters is not one of the available options “Calculation of baseline emissions, calculation of project emissions, calculation of leakage”	
Project participant response	Date: 16/03/2022
1. The monitoring report is now using the latest template v4.1 2. Section 1.1 is now shortened to 1 page long 3. Section 2.2 of the updated MR has been updated to include a statement that there has been no modification to the project design during the monitoring period. 4. A statement has been added to section 3.2.2 of the updated MR, explaining that the deviation does not result in any impact 5. The purpose of data for the parameters in question has been changed accordingly in the updated MR	
Documentation provided by the Project Participant	
20220404_LCFP_MR_M4_v1.1	
VVB Assessment	Date: 06/04/2022
1. The MR template 4.1 has been updated and deemed correct 2. Section 1.1 is more than one page 3. Section 2.2 has been updated and deemed correct 4. Section 3.2.2 has been updated and deemed correct 5. Parameters $E_{BA}^{[m]}$, $E_{LME}^{[m]}$ purpose of data is not one of the available options	
Project participant response	Date: 14/04/2022
2. Section 1.1 has been adapted as requested 5. Purpose of both parameters has been incorporated as suggested. Please note that the parameter $E_{LME}^{[m]}$ does not apply to the project as the LCFP project does not consider any market leakage.	
VVB Assessment	Date: 20/05/2022
2. Section 1.1 has been updated and deemed correct 5. Purpose of data of parameter $E_{BA}^{[m]}$ is not in accordance with template requirements as it is not one of the available options “Calculation of baseline emissions, calculation of project emissions, calculation of leakage”	
Project participant response	Date: 01/07/2022

6. Purpose of data parameter $E_{BA}^{[m]}$ has been changed to “calculation of project emissions”.	
VVB Assessment	Date: 05/07/2022
MR has been updated and deemed correct. Therefore CAR 1 is closed.	

CAR	02	Date: 10/03/2022
Description of CAR		
The following errors or misstatements have been found on the MR: 1. Area of the second project activity instance does not match area of the shp provided 2. The estimated gross emissions reduction on section 1.1 does not match data from the PDD 3. The number and explanation of grievances on section 2.3 does not match the evidence on Grievance Registries 4. Section 3.1 under “New Projects implemented in 2021” refers some information to 2020 5. Section 4.2 has twice parameter $E_{BASOC}^{[m]}$ and is missing parameter $E_{BBGB}^{[m-1]}$ 6. Section 4.2 parameters $C_{BBGB}^{[m]}$, $E_{BA}^{[m]}$, $E_{BA}^{[m]}$ and $t^{[m-1]}$ do not consider data for project activity instance 2 7. Section 4.2 parameters $E_{BASOC}^{[m]}$, $E_{BASOC}^{[i]}$, $E_{BSOC}^{[m]}$ and $E_{BSOC}^{[m-1]}$ state frequency of monitoring “at first verification” but update values every monitoring period 8. Section 4.2 parameter $U_B^{[m]}$ does not match excel value 9. Values section MR.15-17 do not match excel 10. Table 19 values C and U do no match excel master biomass summary 11. Table 21 values of buffer pool allocation do not match excel 12. Value section MR.77 does not consider project instance 2 13. Value section MR.83 does not match information on PDD		
Project participant response		Date: 04/04/2022
1. The figure was updated. We also provide updated shapefiles for both project instances separately and one combined. 2. The way it is phrased in the new version of the report, only the estimated gross emission reduction for the two activity instances combined is mentioned whereas in the PDD such estimation was provided for the first activity instance only. 3. The number of grievances per chiefdom has been corrected and is now matching the register 4. Section 3.1 has been updated with projects implemented in 2021.		

5. The symbol is supposed to be $E_{BBGB}^{[m-1]}$ but was erroneously given as $E_{BASOC}^{[m]}$. It is now corrected in the MR. The value given remains relevant. The value for $C_{BBGB}^{[m]}$ has been updated The value for $E_{BA}^{[m]}$ has been updated The value for $E_{BA}^{[m]}$ has been updated 6. The value for $t^{[m-1]}$ remains at 2,071 as there was no second project activity instance during the previous monitoring period; Values for $t^{[m-1]}$ and $t^{[m]}$ were updated in the monitoring report to distinguish between project activity instances. 7. The parameters in question are monitored at the first verification, however because decay is taken into consideration each subsequent year, their values change and are therefore updated every monitoring period. We have included a statement that the “values are updated every monitoring period” at each of the parameters. 8. The value for $U_B^{[m]}$ was updated. 9. These values given in MR.15-17 have been corrected. 10. These values have now been updated in Table 19 to match the excel spreadsheets. 11. These values have now been updated in Table 21 to match the spreadsheets. 12. This value has been updated in the MR 13. The ex-ante estimate value as given in the PD for this monitoring period is now reflected in the Monitoring report	
Documentation provided by the Project Participant	
20220324_LCFP_ProjectAreaInstance1.shp 20220324_LCFP_ProjectAreaInstance2.shp 20220324_LCFP_ProjectAreaInstances.shp 20220413_LCFP_M4_NonPermRisk_Report.pdf 20220413_LCFP_M4_NonPermRisk_Report.docx	
VVB Assessment	Date: 06/04/2022
1. Area of the second project activity instance has been updated and deemed correct. However, area of first project activity instance does not match area of the shp provided. Therefore, total area of project does not match with evidence. 2. Clarification has been provided and deemed correct 3. The number of grievances in Mnkhanya do not match evidence. 4. Section 3.1 has been updated and deemed correct 5. Parameter has been updated and deemed correct 6. Parameters $C_{BBGB}^{[m]}$, $E_{BA}^{[m]}$, $t^{[m-1]}$ have been updated and deemed correct Parameter $E_{BA}^{[m]}$ does not match information on excel spreadsheet	

7. Parameters have been updated and deemed correct 8. Parameter $U_B^{[m]}$ does not match excel value 9. Value has been updated and deemed correct 10. Values have been updated and deemed correct 11. Project emissions, net GHG emissions removals, buffer pool and VCU's eligible do not match the excel 12. Value does not match excel spreadsheets 13. Value has been updated and deemed correct.	
Project participant response	Date: 14/04/2022
1. According to our calculations the shapefiles originally submitted as a kml file (<i>LCFP_Project_Area_20190627.kml</i>) on the Verra registry at validation and the renamed file submitted as project activity instance 1 (PAI1) <i>20220324_LCFP_ProjectAreaInstance1.shp</i> is deemed correct as is the sizes of all the chiefdoms according to table 1 in the monitoring report. The updated shapefiles provide various calculations according to different projections for each of the areas as attribute data. We used the last column of these attribute data as the source data (default qgis area calculation method). It adds up to 943,646.3 ha. 2. See the spreadsheet <i>20211104_LCFP_ER_Calc_M4_FirstActivityInstance.xlsm</i> and the spreadsheet <i>20211127_LCFP_ER_Calc_M4_SecondActivityInstance.xlsm</i> and for the first take the value at K125 (1,872,396) in the NERmodel tab and for the second take the value E125 (74,215) and add them together to get 1,946,611 tCO₂e - as indicated in the updated monitoring report. 3. The grievances register was not reflecting 1 unclosed grievance for Mnkhanya but has been updated and now reflects the correct number of grievances for Mnkhanya. ie 5 (1 open and 4 closed). The updated Mfuwe grievance register has been uploaded in the CAR#2 folder. 6. The parameter $E_{BA}^{[m]}$ (Cumulative emissions allocated to the buffer pool at the end of the current monitoring period) is given as -975,756 tCO₂e and was calculated by adding E126 to K126 (-53407, -105819, -130978, -146783, -168785, -175322, -187240) in the NER model tab of the spreadsheet <i>20211104_LCFP_ER_Calc_M4_FirstActivityInstance.xlsm</i> for the first instance together with the cell value E126 (-7422) of the spreadsheet <i>20211127_LCFP_ER_Calc_M4_SecondActivityInstance.xlsm</i> (NER Model tab) - arriving at the value of -975,756 tCO₂e. 8. The value $U_B^{[m]}$ has been changed to 15,727 to reflect the value calculated in the spreadsheet. 11. The value at MR.77 was changed to reflect the real Buffer allocation (-194,661 tCO₂e). The non-permanence risk assessment report was changed to reflect Table 21 in the MR. See the updated files in Appendix H and in the 2nd round findings folder. 12. This value was changed to reflect the value obtained from the spreadsheets to - 194,661 tCO₂e.	
VVB Assessment	Date: 20/05/2022

1. Evidence has been provided and deemed correct 3. Evidence has been updated and deemed correct 6. Value has been updated and deemed correct 8. Parameter in MR does not match value in spreadsheet for current monitoring period (2021) 11. Values have been updated and deemed correct 12. Value has been updated and deemed correct	
Project participant response	Date: 01/07/2022
8. The value in U_B^m both spreadsheets (20211104_LCFP_ER_Calc_M4_FirstActivityInstance_V3_1 and 20211127_LCFP_ER_Calc_M4_SecondActivityInstance_V3_1) has been updated	
VVB Assessment	Date: 05/07/2022
MR has been updated and deemed correct. Therefore CAR 2 is closed.	